



User's Manual

EIZO Video Wall Plugin for Milestone XProtect

Version 1.0

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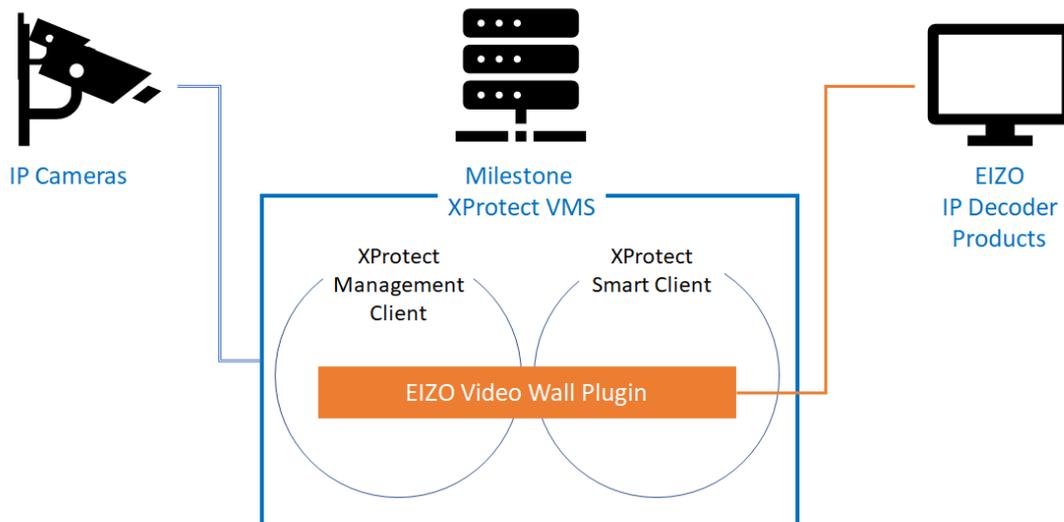
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Overview

System Overview

Basic Information



The EIZO Video Wall Plugin consists of 2 additions to the XProtect system:

- An XProtect Management Client integration
- An XProtect Smart Client integration

Plugin Dependencies

EIZO IP Decoder Products (hereinafter referred to as IP monitors)

- Version : 5.5000 or greater
- A valid enterprise license has been activated

XProtect System

- Windows 10 64-bit
- XProtect edition : Corporate, Expert, Professional+, Express+
- XProtect version : 2021 R1
- Milestone Open Network Bridge version : 2021 R1
- The EIZO Video Wall Plugin version : 1.0.1.1

Plugin Installation

Please check the EIZO website for information on how to obtain the installer.

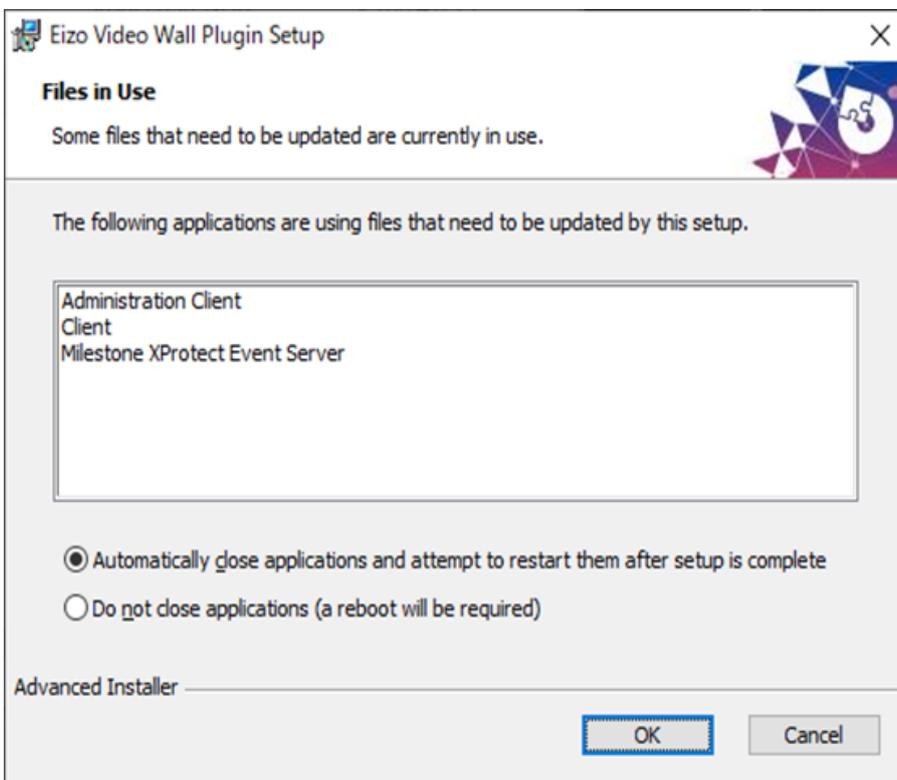
Installation Prerequisites

To ensure a successful installation the following should be completed before running the installer:

- All local Management Clients and Smart Clients must be closed
- The Event Server Window's service should be stopped

Note:

In the event that the above programs have not been closed properly, a Files In Use screen may be displayed to show which programs are still open.



To resume the installation, select

“Automatically close applications and attempt to restart them after setup is complete” and click the “OK” button.

Plugin Install Locations

- C:\Program Files\VideoOS\MIPPlugins
- C:\Program Files\Milestone\MIPPlugins

Note:

The user must choose from the above install locations and should check that a new folder named **EIZOVideoWallPlugin** appears at the end of the path.

eg: C:\Program Files\VideoOS\MIPPlugins\EIZOVideoWallPlugin

Note:

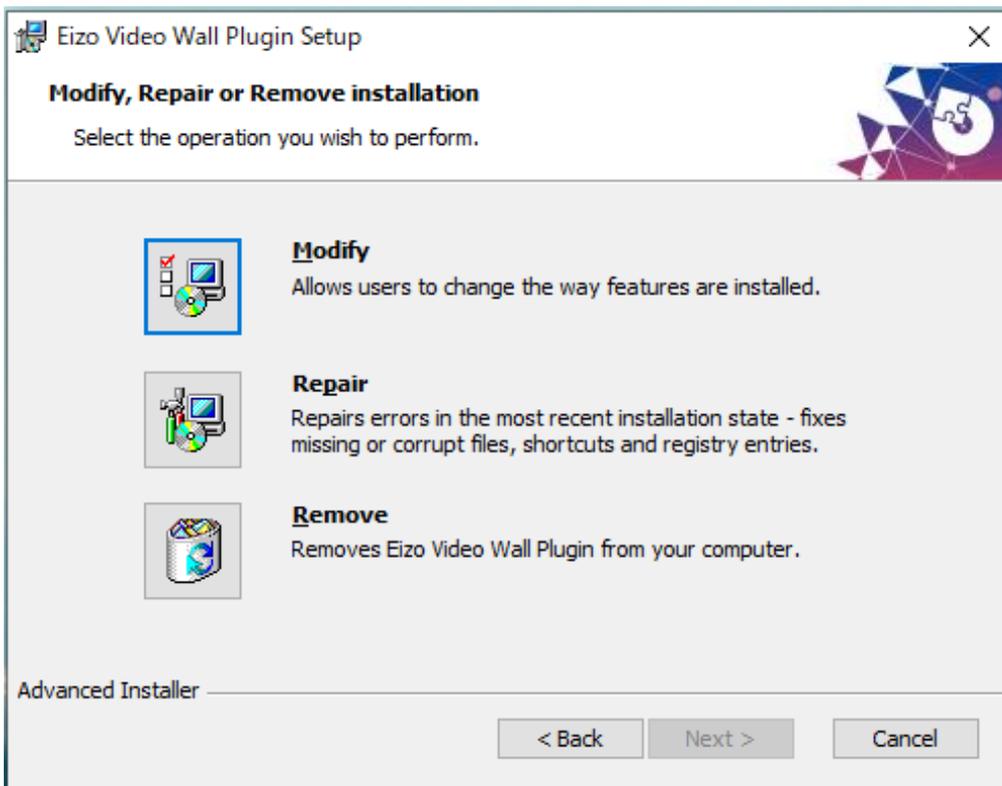
The XProtect Event Server must be restarted after installation.

To Uninstall

Run the installer software after the plugin has been installed and select the **Remove** option to uninstall.

Note:

- Before uninstallation, it is expected that the user has manually deleted all EIZO Video Wall entities from the XProtect Management Client.
- Modify option currently unimplemented.



XProtect Management Client

Management Client Overview

A new EIZO Video Wall section has been added to the **Site Navigation**.

Allows for:

- Registering EIZO IP-monitor devices to XProtect video-walls
- Arranging multiple IP-monitors in a video wall layout
- Creating presets for IP-monitors layouts
- Registering cameras to IP-monitors

XProtect Smart Client

Smart Client Overview

A new content item has been added to the **System Overview** pane.

EIZO Video Walls - the EIZO Video Wall for controlling IP-monitor devices.

Allows for:

- Monitoring video-walls with IP-monitor devices
- Getting layouts and registered cameras from IP-monitors
- Managing errors and alerts

Streaming

Server

The **Milestone Open Network Bridge** is required as the streaming gateway server.

Streaming Protocol

- RTP over UDP
- RTP over RTSP

Video Codec

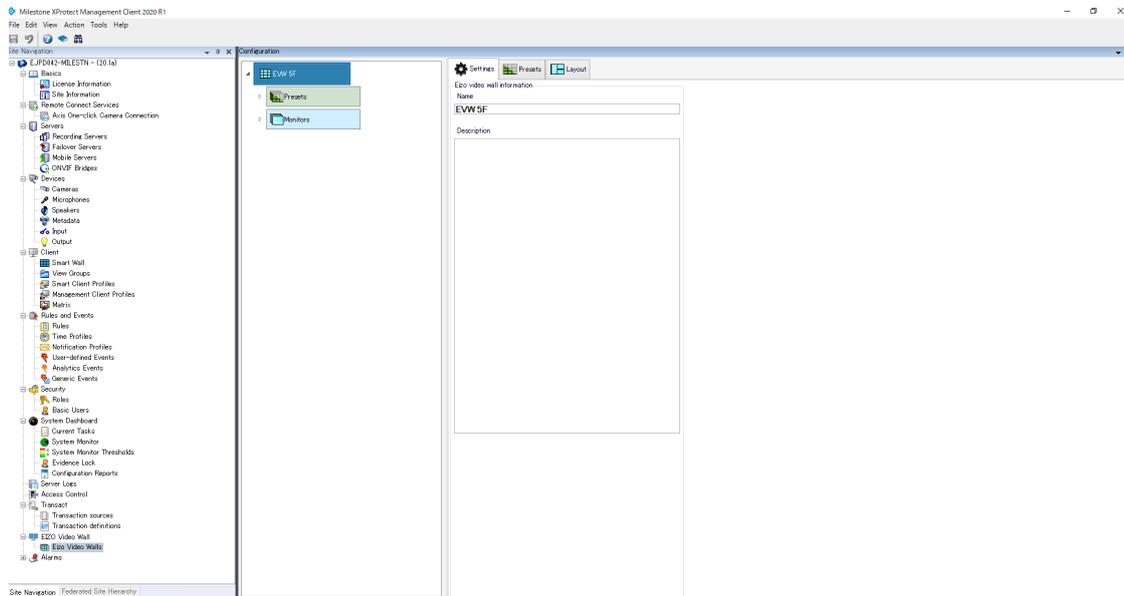
- H.264

XProtect Management Client

Overview

The XProtect Management Client allows users to create and configure multiple entities of **EIZO Video Walls** in the XProtect VMS.

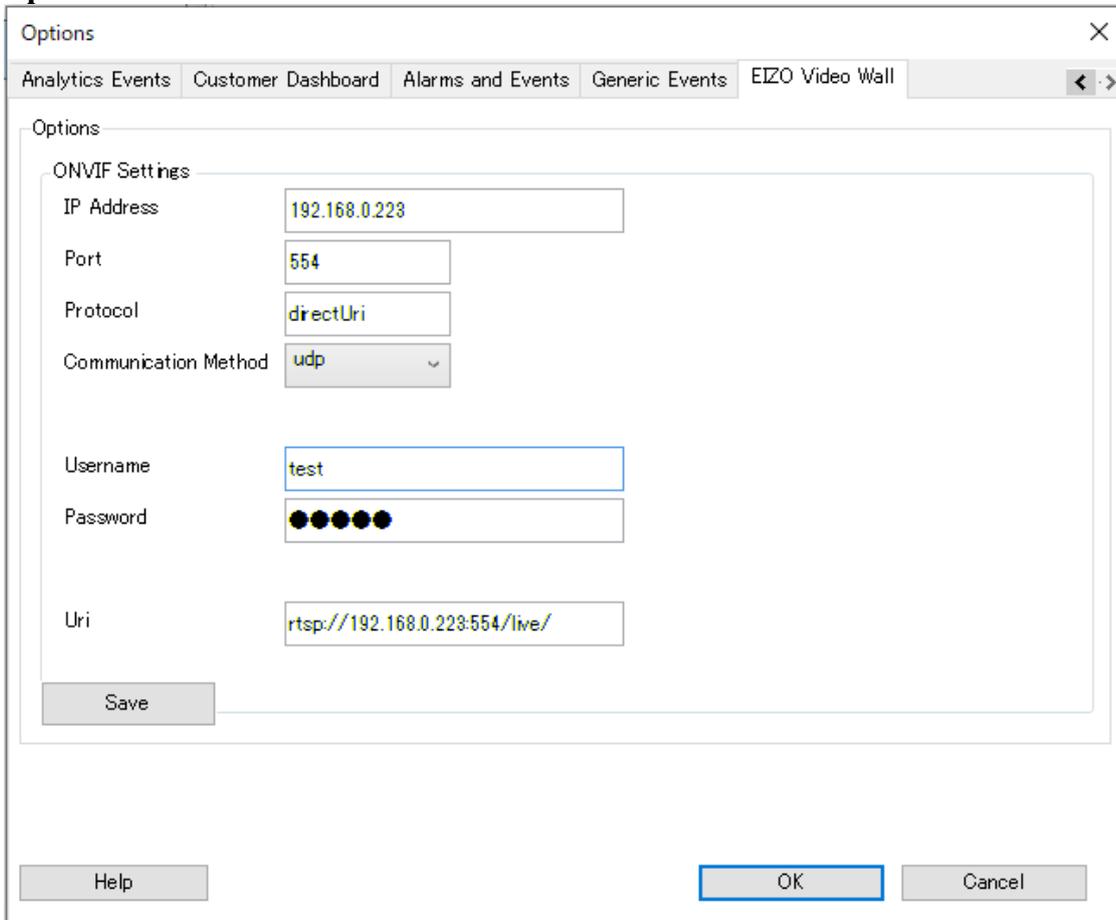
All EIZO Video Wall settings can be configured from the **EIZO Video Wall** section of the XProtect Management Client.



Prerequisites

To display camera streams on EIZO IP-monitors via the Milestone Open Network Bridge, the following settings should be configured in advance.

An **EIZO Video Wall** tab has been added to **XProtect Management Client --> Tools --> Options**.



The screenshot shows the 'Options' dialog box with the 'EIZO Video Wall' tab selected. The 'ONVIF Settings' section contains the following fields:

- IP Address: 192.168.0.223
- Port: 554
- Protocol: directUri
- Communication Method: udp
- Username: test
- Password: [masked]
- Uri: rtsp://192.168.0.223:554/live/

Buttons: Save, Help, OK, Cancel.

- IP Address: Milestone Open Network Bridge server address
- Port: **RTSP Port** of Open Network Bridge
- Username: Open Network Bridge user credentials as administrators
- Password: password for the above user
- Uri: "rtsp://**server address**:rtsp port/live/"

Setup Procedure

1) Creating EIZO Video Walls

An EIZO Video Wall is an entity used to remotely control EIZO IP-monitor devices via XProtect. This entity may include multiple mimic templates and presets used to manage the registered devices.

Create an EIZO Video Wall by right clicking on the **Configuration** pane and selecting **Add EIZO Video Wall**. A new Video-Wall will be created with configurable **Presets** and **Monitors**.

2) Registering Monitors

A **Monitor** entity refers to the mimic template of an EIZO IP-monitor device, which can be used to configure cameras and screen layouts remotely.

A new monitor can be created by right clicking the **Monitors** entity in the EIZO Video Wall and selecting **Add Monitor**.

The following information is required in order to register a device.

| Field | Description |
|----------------------------|--|
| Name | The name of the EIZO IP-monitor (optional). |
| IP Address | The IP Address of the EIZO IP-monitor. |
| Username | The username used to log into the EIZO IP-monitor. |
| Password | The password used to log into the EIZO IP-monitor. |
| Port | The port for HTTP or HTTPS connections (must match the port set on the device) |
| Synchronization Monitoring | Allow all of the Smart Clients to check if the live screen settings of the IP-monitor match the Video-Wall settings. |
| Fullscreen | Display the EIZO IP-monitor as fullscreen. |

It is also possible to change the settings under the Monitor's **Settings** -> **Edit** tab after adding an IP-monitor.

Registration Conditions:

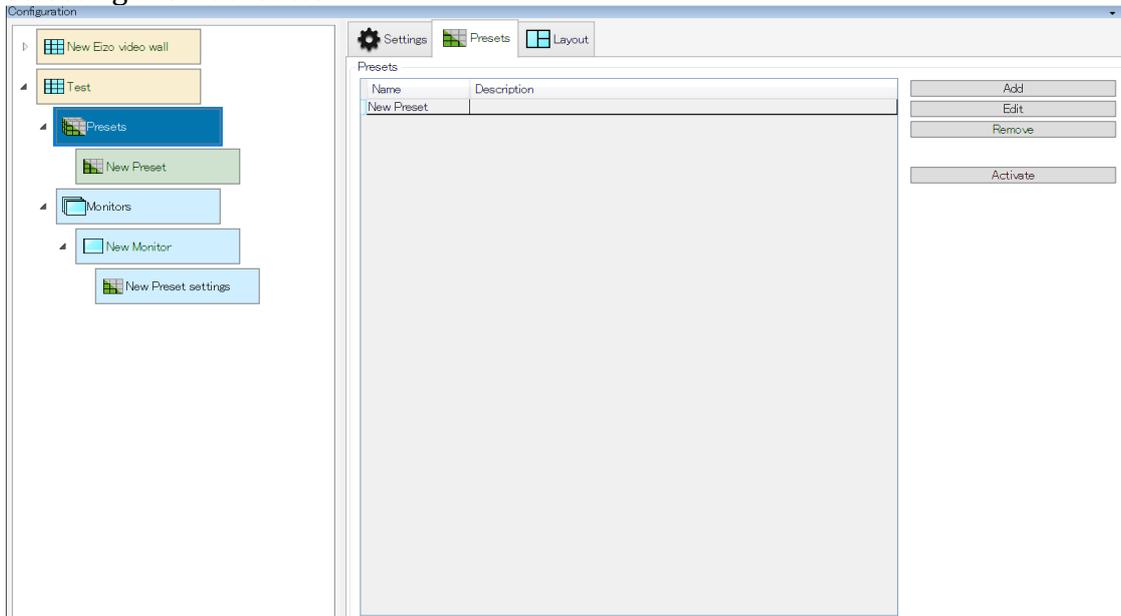
- The device version must be **5.2001 or greater**.
- The device must have an activated **Enterprise License**.
- The HTTP authentication method on the device must be set to **Digest**.

IP monitors will not be registered to the video wall if:

- A connection to the device cannot be made (eg: mismatched IP address or port setting)
- The username / password combination fails to authenticate

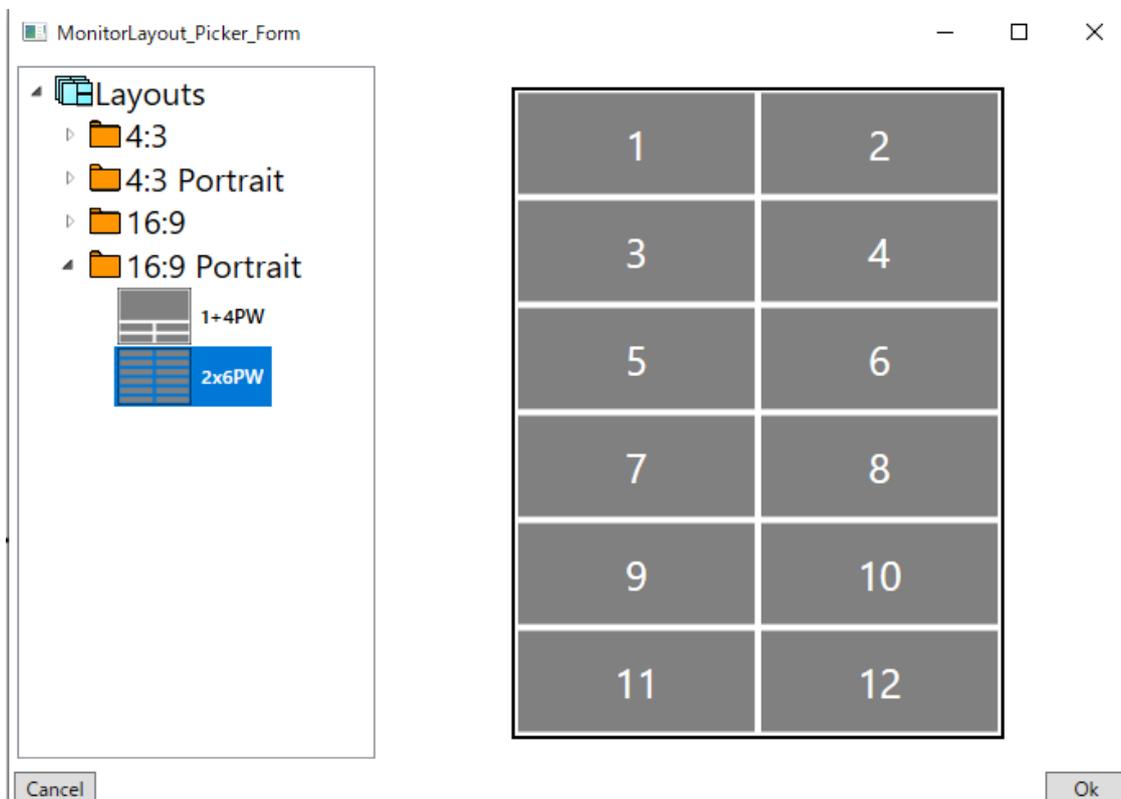
3) Adding Presets

Presets are used to define screen layouts and camera positionings for EIZO IP-monitor devices. A new preset can be created by right clicking the **Presets** entity in the EIZO Video Wall and selecting the **Add** button.



4) Editing Presets

Navigate to the **Presets** tab under the **Monitors** entity, select a preset from the drop down and click **Edit** to display a list of layouts to choose from.



Note: No more than 32 windows per layout

5) Activating Presets

On the **Presets** tab of the Video-Wall, selecting a preset and clicking the **Activate** button will send that preset's layout and camera configuration to the live screen of all connected IP-monitors.



Remarks

Saving Settings to the XProtect VMS Database

Any setting changes must be saved with the **Save** button at the top left of the XProtect Management Client.



Note:

After making changes in the Management Client any open Smart Clients should also be refreshed in order to ensure up-to-date settings in the Smart Clients. This can be accomplished either by using the Restore Configuration button or by restarting the Smart Client application.

Reverting Unsaved Setting Changes

Right clicking the **EIZO Video Wall** in the **Site Navigation** pannel and selecting **Refresh** will provide the option to revert any unsaved changes by reloading the plugin.



Checking the Device Connection Status

Each monitor template in the preset tabs has a status check button at the top right-hand corner. Clicking this checks the connection to the device and updates the monitor status color at the top of the template accordingly.



| Color | Status |
|--------|--|
| Black | Communication Success |
| Red | Communication Failure |
| Yellow | Warning due to an invalid edition or unexpected software version |



Checking the Plugin Version

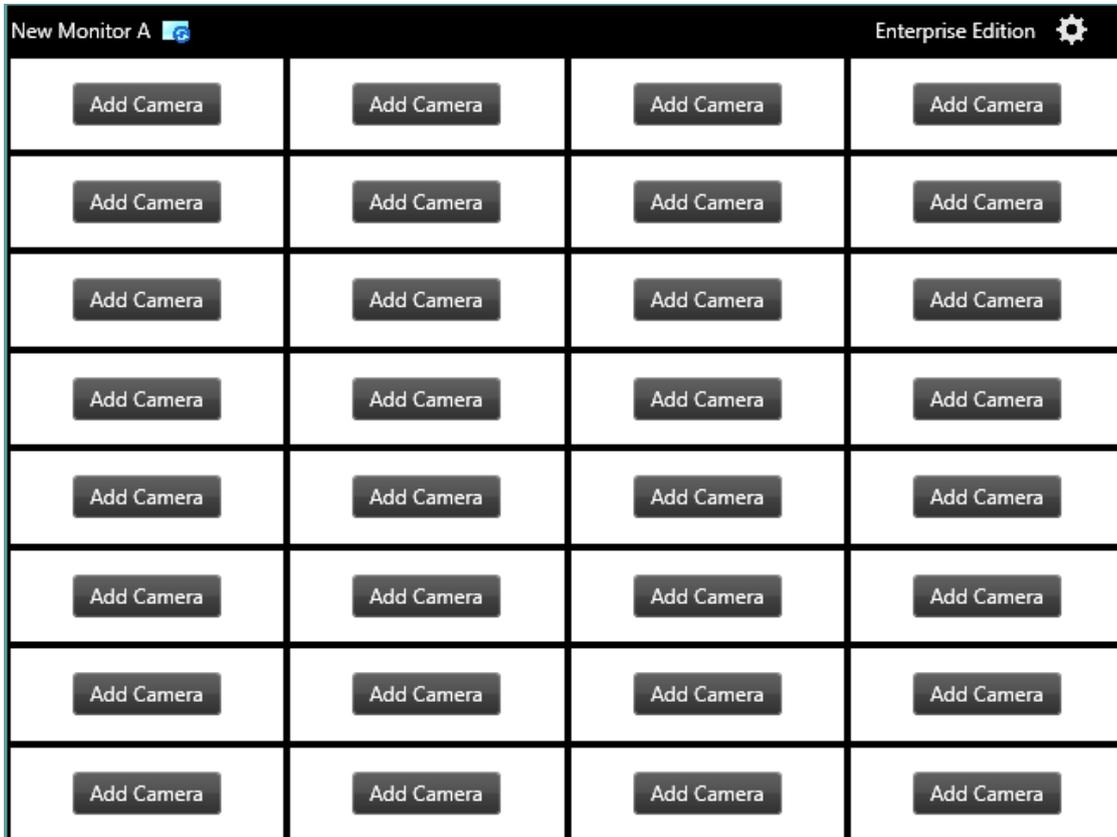
The plugin version can be displayed by opening the XProtect Management Client's **Help --> About**.

EIZO Video Wall v1.x.x.x - Venzo Secure

XProtect Smart Client

Overview

The Smart Client application allows users to place EIZO Video Wall templates (hereinafter referred to as **mimic templates**) onto **view** screens. The mimic template can control IP-monitors by registering cameras, configuring layouts, and monitoring the connection status of the device.

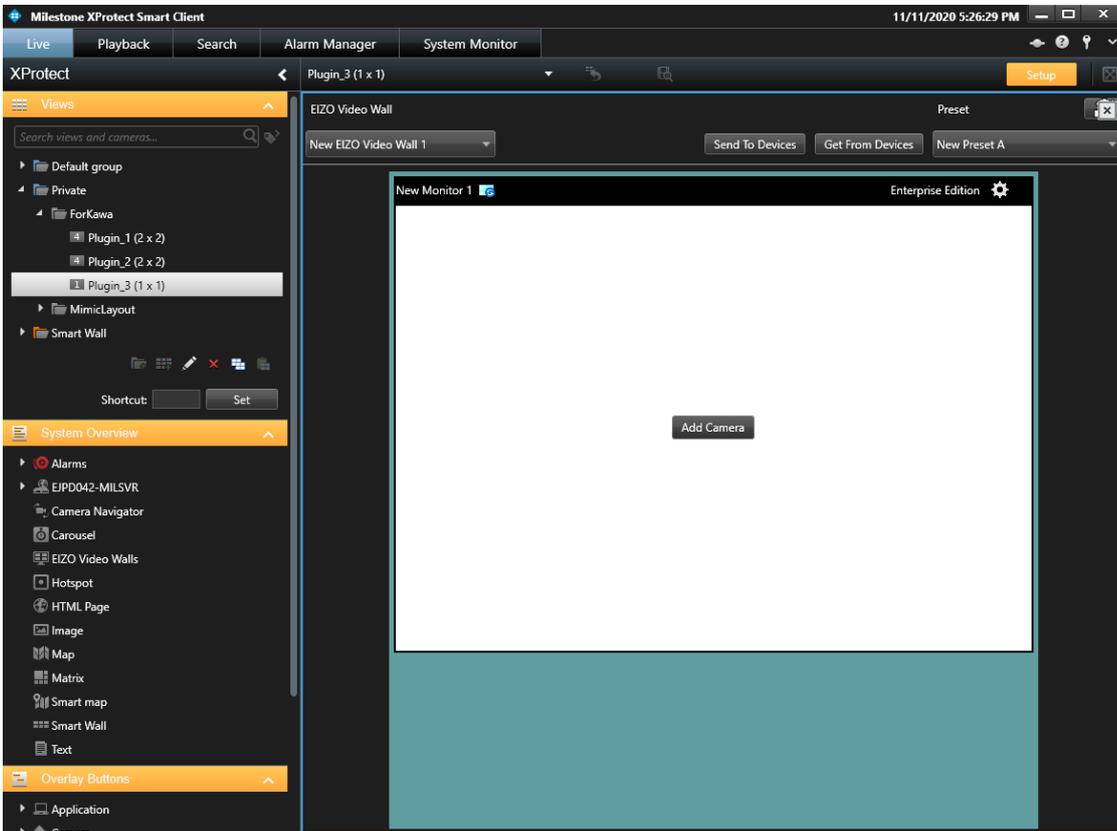


Basic Functionalities

Registering a Mimic Template To a View Screen

Press the **Setup** button on the **Live** tab and drag and drop an **EIZO Video Walls** entity from the **System Overview** pane to an open area on a **view** screen.

After creation, press the **Setup** button again to finalize the settings and a mimic template will be registered to the view.



Adding a Camera

The Smart Client allows users to add cameras on the mimic template in the following ways.

- Dragging and dropping a camera from a camera list.
- Pressing the **Add Camera** button on the mimic template and selecting a camera.
- Copying cameras from a view group by dragging the view group on to the mimic template.

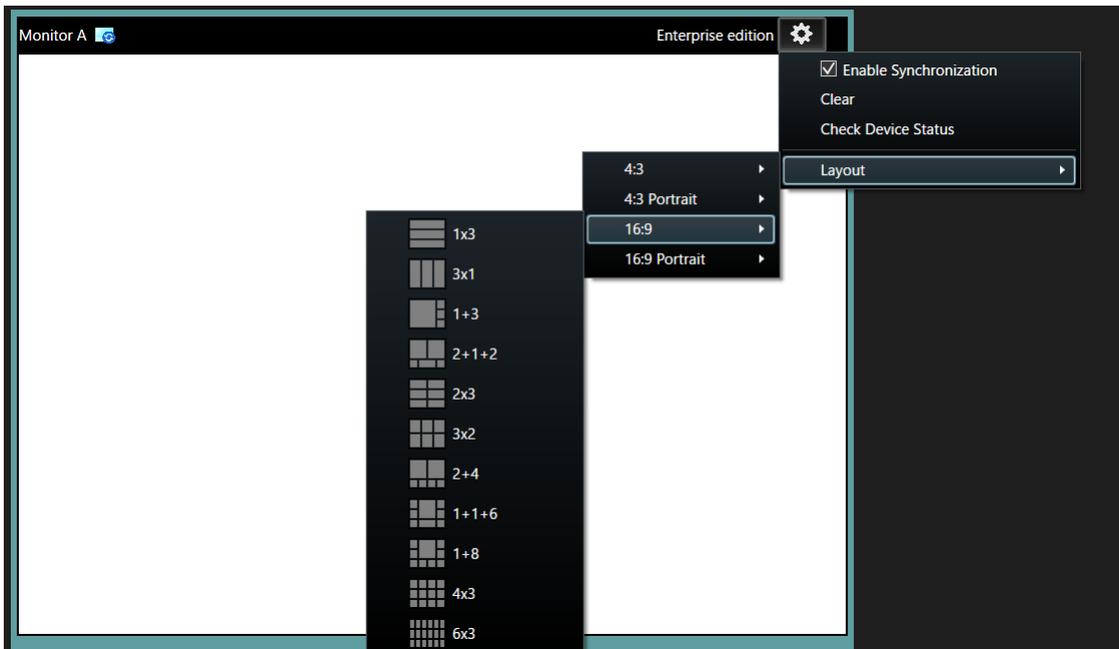
After changes have been made, press the **Send to Devices** button to update the settings on the IP-monitor devices.

Changing a Layout

Pressing the gear icon on a monitor and selecting **Layout** should open a list of supported layouts to choose from.

The **Clear** button removes all registered cameras and updates the layout to 1x1 on the mimic template.

After changes have been made, press the **Send to Devices** button to update the settings on the IP-monitor devices.



Activating a Preset

Select a preset from the **Preset** drop down menu and press the **Send to Devices** button to update all registered IP-monitors with that preset.

Restoring the Default Presets

Making changes on the mimic template (e.g. changing layouts or cameras) temporarily updates the preset in the local Smart Client.

To restore the presets to the default settings, press the **Restore** icon in the upper right corner of the mimic template.



Getting Current IP-monitor Device Layouts

Pressing the **Get from Devices** button will update the mimic template to match the layouts and cameras on the registered IP-monitors.

Activating a View Template Layout

Dragging and Dropping a view template from the **Views** pane to the mimic template will update the layout to match the view.

After changes have been made, press the **Send to Devices** button to update the settings on the IP-monitor devices.

Note:

Other than cameras, it is not possible to copy entities (such as maps and web pages) from a view template into the mimic template.

Removing a Mimic Template From a View

Enter setup mode by pressing the **Setup** button. Left click the X at the top right-hand side of an EIZO Video Wall template to remove the mimic template from the view.

Switching Between EIZO Video Walls

If multiple EIZO Video Walls have been created, it is possible to switch between them using the drop down box on the upper left corner of the mimic template.

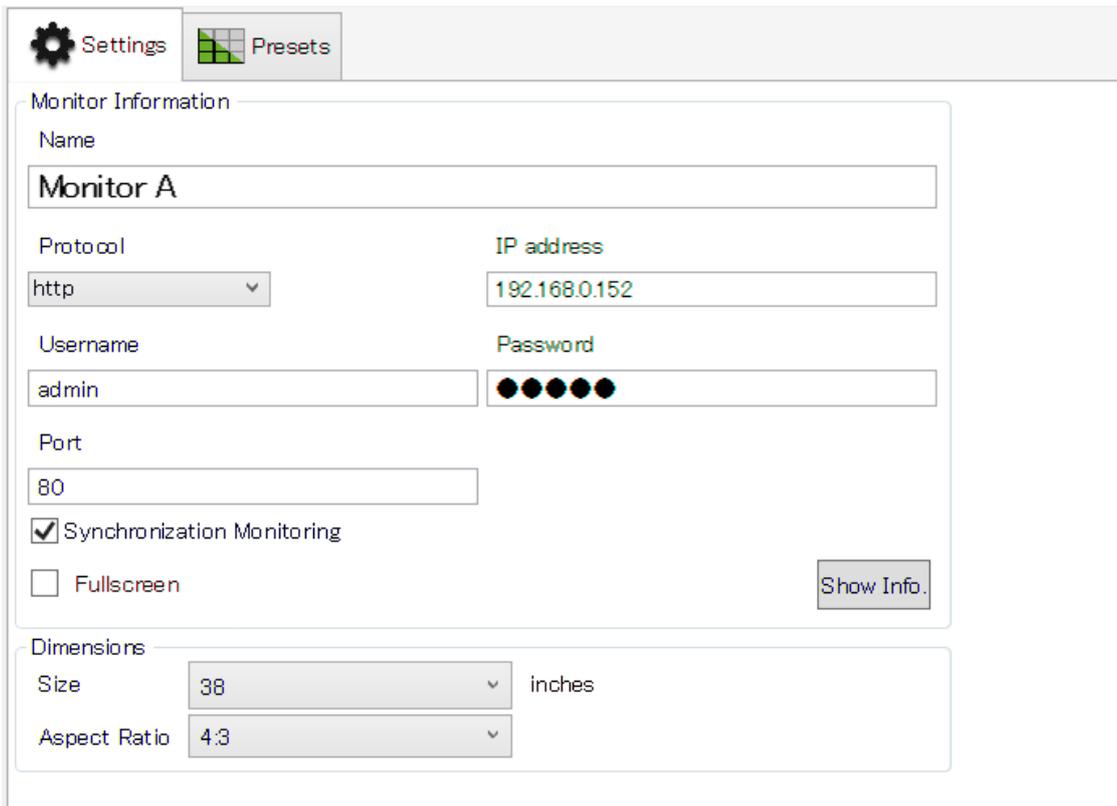


Advanced Functionalities

Enabling Synchronization Monitoring

The Synchronization Monitoring feature periodically checks if the live-view screen of each IP-monitor device matches the mimic template settings.

To enable this feature, the **Synchronization Monitoring** checkbox under **Monitor->Settings** in the **XProtect Management Client** must be checked in advance.



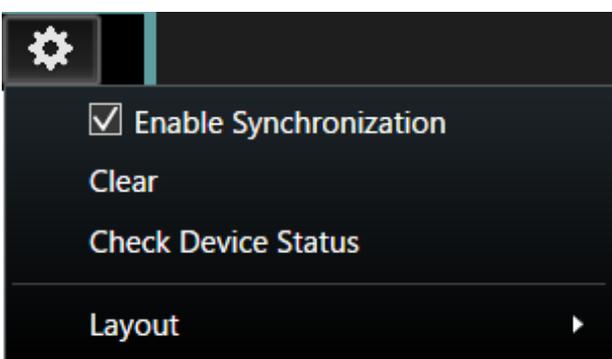
The screenshot shows the 'Settings' window for a monitor named 'Monitor A'. The window has two tabs: 'Settings' (active) and 'Presets'. The 'Monitor Information' section contains the following fields:

- Name: Monitor A
- Protocol: http (dropdown)
- IP address: 192.168.0.152
- Username: admin
- Password: [masked with 5 dots]
- Port: 80
- Synchronization Monitoring
- Fullscreen
- Show Info. button

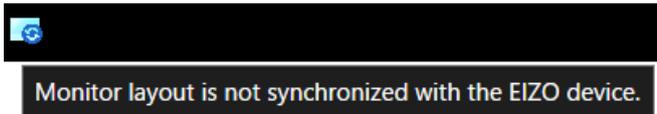
The 'Dimensions' section contains the following fields:

- Size: 38 (dropdown) inches
- Aspect Ratio: 4:3 (dropdown)

When **Synchronization Monitoring** is enabled in the XProtect Management Client, clicking the gear icon on a monitor in the XProtect Smart Client will display an **Enable Synchronization** checkbox. Checking **Enable Synchronization** will cause the Smart Client to perform periodical synchronization checks for that IP-monitor.



If the layout and registered cameras on the IP-monitor do not match the layout and cameras on the mimic template, an icon will be displayed to notify the user of a settings mismatch.



Checking a Device's Status

To check the current state of a registered monitor, click the gear icon and then click **Check Device Status**. This will check the device to make sure a connection can be established, the version is 5.2001 or greater, and a valid Enterprise edition is activated.

If a connection cannot be established, the border at the top of the monitor will turn red. If there is a version or edition mismatch, the border at the top of the monitor will turn yellow.

Fixing these issues and pressing the **Check Device Status** should resolve the border back to black.

Map

It is possible to register cameras from the **Map** entity by dragging and dropping a camera onto a monitor in the mimic template.

After changes have been made, press the **Send to Devices** button to update the settings on the IP-monitor devices.

Event Rules

The following actions are available for linking with XProtect event rules.

- Changing the mimic template layout to a 1x1 layout with the camera that triggered the event.
- Changing the mimic template layout to a designated preset layout.

Remarks

Checking the Plugin Version

The plugin version can be displayed by opening the XProtect Smart Client's **Help** --> **About**.

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Troubleshooting Guide

Prerequisites

The following are necessary to effectively troubleshoot the EIZO Video Wall Plugin:

- A Milestone XProtect system version 2021 R1 or greater.
- An Open Network Bridge of the corresponding XProtect version.
- An EIZO DuraVision product version 5.5000 or greater.
- An EIZO Video Wall Plugin version 1.0.1.1 or greater.
- All system-wide EIZO Video Wall Plugin installations are the same version.

Problems With Streaming

The following error codes, when displayed on the IP Monitors, are an indication of several streaming-related problems.

| Error Code | Description |
|------------|--|
| E01-00 | Camera connection failure due to XProtect factors |
| E02-02 | The camera stream failed to authenticate with the RTSP server |
| E02-03 | Failure to communicate with the camera due to connection or setting errors |
| E02-04 | Failure to communicate with the RTSP Server |
| E04-00 | Unsupported camera resolution |

A Camera Stream Fails to Display

Error E01-00 Causes

This type of error indicates a failure to connect to the camera.

The most common causes being:

- The camera no longer exists in the XProtect system.
- The specified ONVIF Client User for the Open Network Bridge does not have the proper privileges.
- The camera has been set to an unsupported streaming codec.

Error E02-02 Causes

This type of error indicates an RTSP stream authentication failure.
The most common causes being:

- The Open Network Bridge user information does not match the EIZO Video Wall Plugin user information.
- The user in the Open Network Bridge settings does not exist as an XProtect Basic User.

Error E02-03 Causes

This type of error indicates a failure to communicate with the camera due to connection or setting issues.

The most common causes being:

- The XProtect system has lost connection to the camera.
- The camera has been set to an unsupported streaming codec.

Error E02-04 Causes

This error indicates a connection issue to the Open Network Bridge server.

The most common causes being:

- The Open Network Bridge server has not been properly installed.
- The Open Network Bridge service has been stopped (either manually or due to a crash).
- No network connection from the IP Monitors to the computer where the Open Network Bridge server is installed.

Troubleshooting Steps

Troubleshooting the Open Network Bridge

First, it is important to determine whether the problem is with the RTSP server itself or the EIZO Video Wall Plugin.

To confirm this, check that the Open Network Bridge is available in the ONVIF Device Manager and that network streams are viewable. If network streams are not viewable from the ONVIF Device Manager, there is an issue with the Open Network Bridge that must be resolved before following the steps in this guide.

For more information please refer to: https://doc.milestonesys.com/2020r1/en-US/standard_features/sf_onvifbridge/onvif_usingonvifclientstovi.htm?Highlight=onvif%20device%20manager

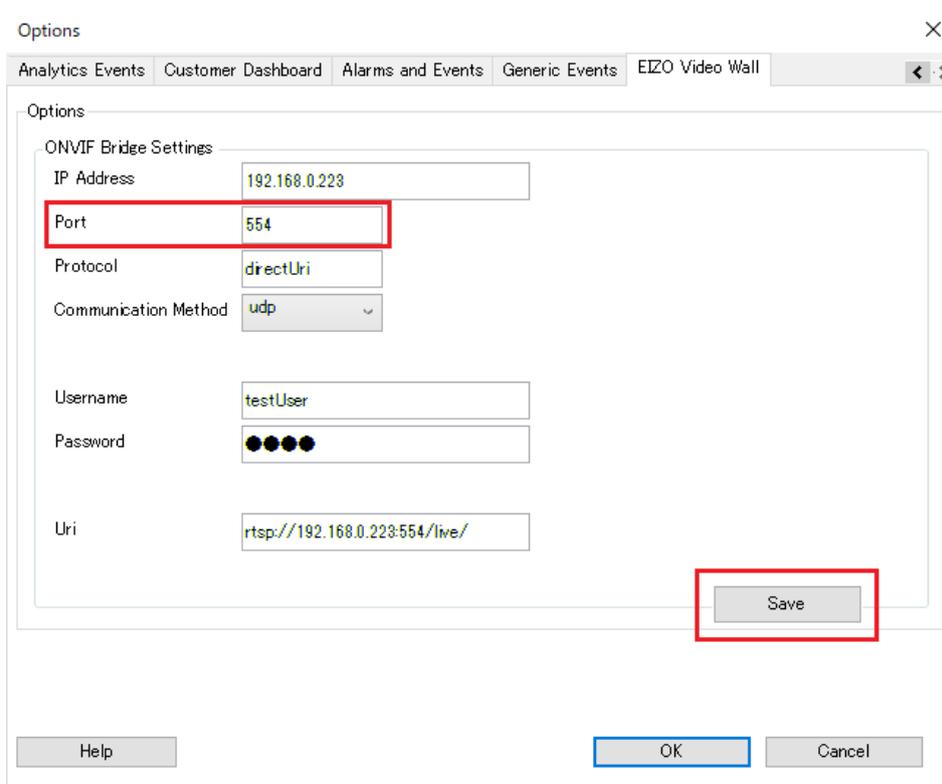
1. Open the **Management Client** and check under Servers in the Site Navigation pane to confirm that the Open Network Bridge has been installed properly.
2. Ensure that at least one Open Network Bridge server exists and that the service is running. This can be done by checking the services tray in the Windows toolbar



3. Confirm that the IP Address and Port fields under:

Management Client -> tools -> options -> EIZO Video Wall

match the IP Address of the Open Network Bridge server and the RTSP Port in the Open Network Bridge Settings.

A screenshot of the EIZO Video Wall Options dialog box. The dialog box has a title bar with 'Options' and a close button. Below the title bar are several tabs: 'Analytics Events', 'Customer Dashboard', 'Alarms and Events', 'Generic Events', and 'EIZO Video Wall'. The 'EIZO Video Wall' tab is selected. The main content area is titled 'Options' and contains a section for 'ONVIF Bridge Settings'. This section has several fields: 'IP Address' (192.168.0.223), 'Port' (554), 'Protocol' (directUri), 'Communication Method' (udp), 'Username' (testUser), 'Password' (masked with dots), and 'Uri' (rtsp://192.168.0.223:554/live/). The 'Port' field and the 'Save' button at the bottom right of the dialog box are highlighted with red boxes. At the bottom of the dialog box are three buttons: 'Help', 'OK', and 'Cancel'.

Important

After making changes in the EIZO Video Wall Options menu remember to press the Save button before closing the menu with the OK button. Failing to press the Save button will result in unsaved changes.

Open Network Bridge Servers

Open Network Bridge Information

Open Network Bridge settings

ONVIF port: 580

RTSP port: 554

Enable WS-Discovery

Default camera settings (as reported to the ONVIF clients)

Max days of retention: 30

Frames per second: 5

Width: 1920

Height: 1080

Bitrate kbps: 512

GOP size: 5

Codec: H264 Baseline Profile
H264 Main Profile
H264 High Profile
H264 Extended Profile

Use configurations from cameras

Real Time Streaming Protocol settings

Skip gaps in recordings

Repeat frames

Maximum time between frames: 350 ms

Prefer absolute time over normalized

Return sequences on command

Maximum number to return: 10

Return from start or end of recording: Start of recording

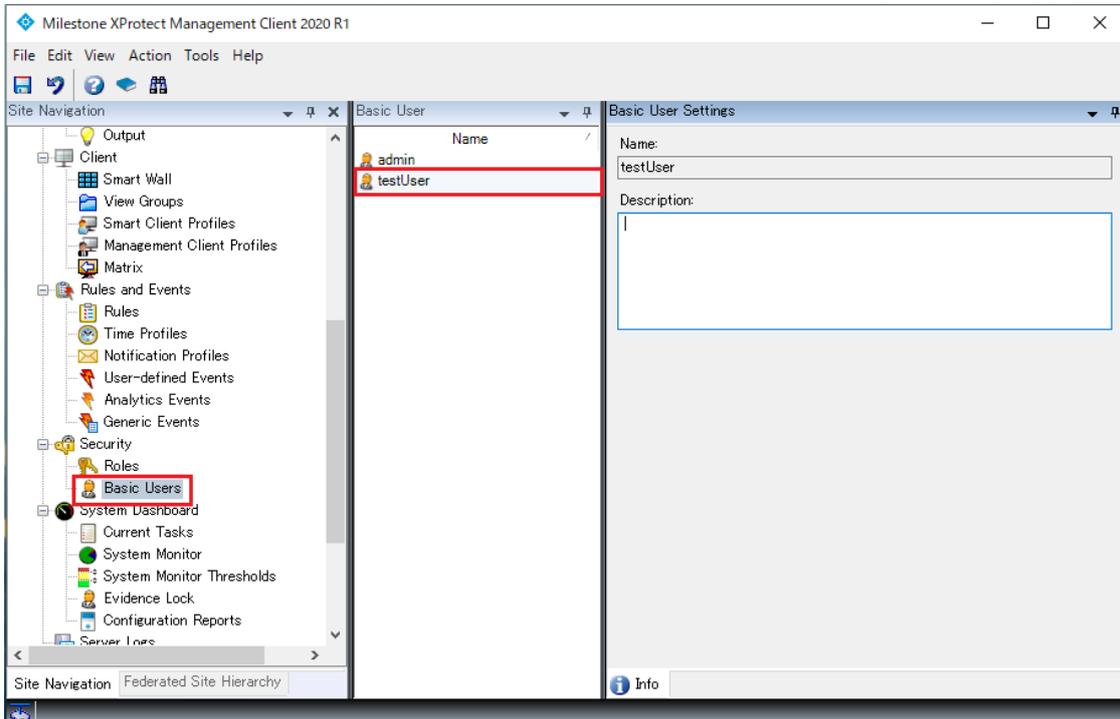
4. Finally check that the correct Open Network Bridge server address is used for the IP Address in the Plugin settings and that the IP Address matches the Uri address.

The Uri is necessary for streaming while the IP Address is necessary for registering cameras to the IP Monitors.

The screenshot shows a software configuration window titled "Options" with a tab labeled "EIZO Video Wall". Inside the window, there is a section for "ONVIF Bridge Settings". The "IP Address" field is highlighted with a red box and contains the value "192.168.0.223". Below it, the "Port" is set to "554", the "Protocol" is "directUri", and the "Communication Method" is "udp". The "Username" field contains "testUser" and the "Password" field is masked with four black dots. The "Uri" field is also highlighted with a red box and contains "rtsp://192.168.0.223:554/live/". At the bottom right of the settings area is a "Save" button. At the bottom of the window are three buttons: "Help", "OK", and "Cancel".

Troubleshooting User Settings

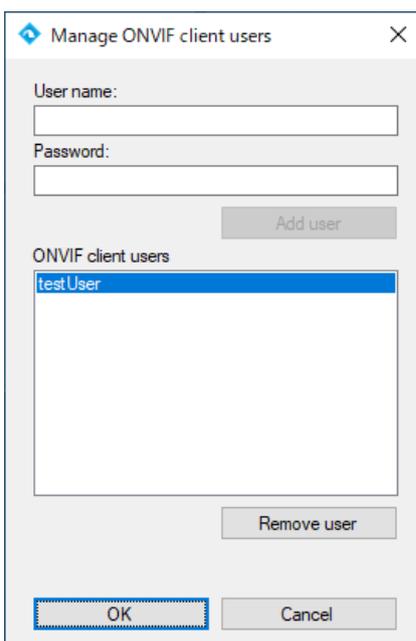
1. Confirm that the desired user for the EIZO Video Wall Plugin exists as an XProtect Basic User with **XProtect Administrator Privileges**.



2. Right click the Milestone Open Network Bridge service in the Windows taskbar and select Manage ONVIF client users to confirm that the desired user has been registered to the Open Network Bridge.

Note

When adding a user to older versions of the Open Network Bridge, the Open Network Bridge plugin might not check if the username and password match a valid XProtect user so it is important to confirm the user credentials beforehand.



3. Check that the user information in the Open Network Bridge Settings matches the Username and Password in:

Management Client -> tools -> options -> EIZO Video Wall

Options

Analytics Events Customer Dashboard Alarms and Events Generic Events EIZO Video Wall

Options

ONVIF Bridge Settings

IP Address 192.168.0.223

Port 554

Protocol directUri

Communication Method udp

Username testUser

Password ●●●●●●

Uri rtsp://192.168.0.223:554/live/

Save

Help OK Cancel

Important

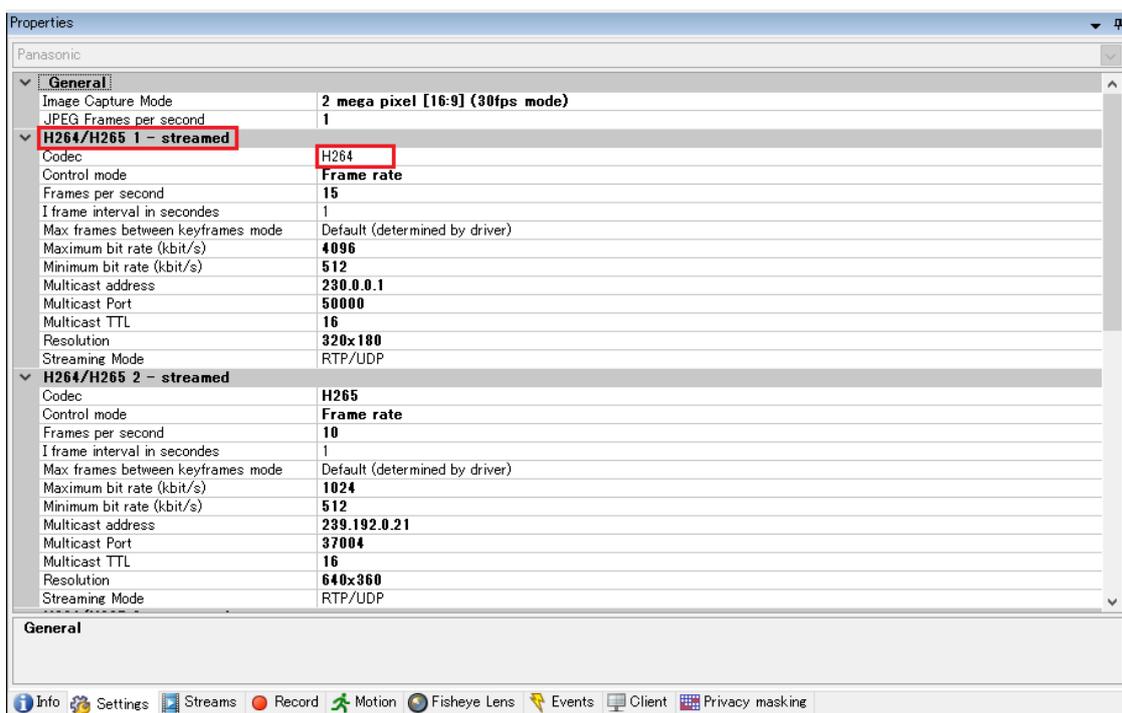
After making changes in the EIZO Video Wall Options menu remember to press the Save button before closing the menu with the OK button. Failing to press the Save button will result in unsaved changes.

4. Finally, before resending cameras to the decoder, refresh any open Smart Clients via the Restore Configuration button or by restarting the Smart Client application. This is to ensure the latest usernames and passwords are also updated in the Smart Clients.

Troubleshooting Camera Streaming Settings

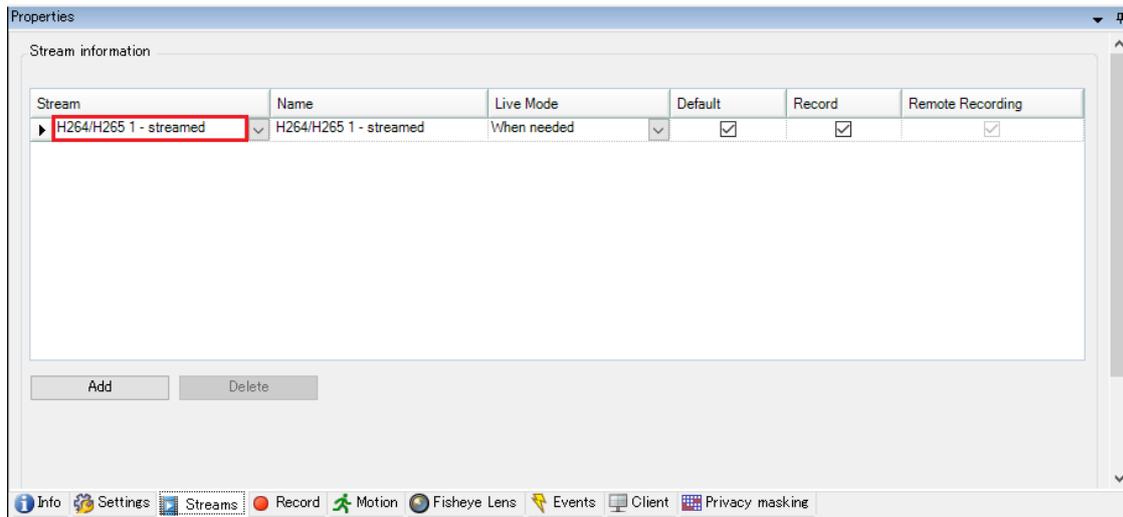
1. Open the **Management Client** and click on Recording Server under Servers in the Site Navigation section.
2. Confirm that the camera displaying the error is registered to a recording server and has a connection to the XProtect system.
3. If Milestone indicates a connection issue check the connectivity to the camera by either checking the network cable physically or via a simple ping command. Resolving the connection issue should resolve the error code.
4. If there is a connection to the camera from the XProtect system, then confirm that the camera's codec setting is set to H.264 under:

Devices -> Cameras -> Camera Group -> Camera -> Settings



5. Then confirm that the H.264 stream is selected under:

Devices -> Cameras -> Camera Group -> Camera -> Streams



Note

Certain cameras may have additional codec settings on their web interfaces. It is also recommended to check that the remote camera codec settings are set to H.264.

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