MAKE THE
WORLD SEE

Milestone Systems

Milestone AI Bridge 1.7

Administrator manual

XProtect Corporate
XProtect Expert
XProtect Professional+
XProtect Express+
XProtect Essential+

milestone

Contents

Copyright, trademarks, and disclaimer

Copyright © 2023 Milestone Systems A/S

Trademarks

XProtect is a registered trademark of Milestone Systems A/S.

Microsoft and Windows are registered trademarks of Microsoft Corporation. App Store is a service mark of Apple Inc. Android is a trademark of Google Inc.

All other trademarks mentioned in this document are trademarks of their respective owners.

Disclaimer

This text is intended for general information purposes only, and due care has been taken in its preparation.

Any risk arising from the use of this information rests with the recipient, and nothing herein should be construed as constituting any kind of warranty.

Milestone Systems A/S reserves the right to make adjustments without prior notification.

All names of people and organizations used in the examples in this text are fictitious. Any resemblance to any actual organization or person, living or dead, is purely coincidental and unintended.

This product may make use of third-party software for which specific terms and conditions may apply. When that is the case, you can find more information in the file `3rd_party_software_terms_and_conditions.txt` located in your Milestone system installation folder.

Overview

What's new?

In Milestone AI Bridge 1.7

The Milestone XProtect Processing Server Admin Plugin installer now requires and verifies the installation of Microsoft Edge WebView2.

In Milestone AI Bridge 1.6

- The first version of this administrator manual for Milestone AI Bridge.

This and related documentation and eLearning courses

This documentation describes how XProtect VMS administrators in XProtect Management Client configure and manage the integration with IVA[1] applications through Milestone AI Bridge.

How the analytics data[2] are made available for the XProtect VMS and what you can configure in XProtect Management Client depends on the IVA application[3] and your chosen analytics topics[4]. This documentation describes the configuration, maintenance, and behavior of a typical Milestone AI Bridge and IVA applications integration in an IVA application agnostic way.

How XProtect VMS administrators and the IVA app integrator decide to share the configuration tasks in XProtect Management Client is individual for each organization. Therefore, your IVA app integrator may handle some of the XProtect Management Client tasks described in this documentation.

The IVA app integrator typically sets up the processing servers[5] on which most of the analysis of the video happens and installs Milestone AI Bridge and your IVA applications.

Related documentation

On the NVIDIA NGC portal (https://catalog.ngc.nvidia.com/), the IVA app integrator can find guidelines for how to:

---

[1]An acronym for Intelligent Video Analysis.

[2]The result of an analytics topic's analysis of a video stream. You can run multiple analytics topics on the same video.

[3]A software program that analyzes video for objects and the behavior of objects.

[4]A feature in an IVA application that analyzes video for objects in a certain way. An example: an IVA application for traffic analytics has analytics topics for vehicles moving in the wrong direction, speeding vehicles, the entering or exiting of vehicles into or from an area, and free parking spaces.

[5]One server or a cluster of servers that processes some kind of data. In connection with Milestone AI Bridge, the processing server hosts Milestone AI Bridge and the IVA applications. Typically, the video analysis happens on the processing server.

- Integrate their IVA applications with Milestone AI Bridge.

- Deploy the processing servers on which the analysis of the video happens.

- Install and configure the full integration between Milestone AI Bridge, the IVA applications, and the XProtect VMS.

For specific functionality of your IVA applications, read the manuals for your IVA applications.

For other features in XProtect Management Client, read the XProtect VMS administrator manual.

eLearning courses

Milestone generally offers eLearning courses for all XProtect products and you can visit the Milestone Learning Portal at https://learn.milestonesys.com/index.htm for a list of available eLearning courses.

Currently, no Milestone AI Bridge eLearning courses are available. When Milestone AI Bridge eLearning courses are made available, you can find them by searching for **ai bridge** on the Milestone Learning Portal.

Milestone AI Bridge

Milestone AI Bridge is a MIP SDK developed using cloud-native technologies. Milestone AI Bridge acts as a bridge between installations of XProtect Video Management Software (VMS) and Intelligent Video Analytics (IVA) applications deployed as docker containers and enables the exchange of data between these two types of applications.

You can strengthen your security and business understanding by integrating your XProtect VMS with IVA applications through Milestone AI Bridge.

Milestone AI Bridge forwards video streams from cameras added to the XProtect VMS to the IVA applications for video analysis. Milestone AI Bridge allows the IVA applications to send the analysis results back into your XProtect VMS as analytics data (events, metadata, and video).

Architecture overview and system components

Bridging two worlds

VMS applications and IVA applications are, by nature, very different. The code bases used to develop the applications and the operating systems they run on are entirely different. While VMS applications predominately use Microsoft Windows technology, most if not all IVA applications are developed for the Linux operating system and often consist of several docker containers[1].

The purpose of Milestone AI Bridge is to make it easy for developers of IVA applications to integrate their solution with the XProtect VMS.

---

[1]A small application with a limited function like a website, a service, a database, or other. Milestone AI Bridge consists of 10 containers.

VMS applications and IVA applications cannot communicate directly with each other, but they can through Milestone AI Bridge.
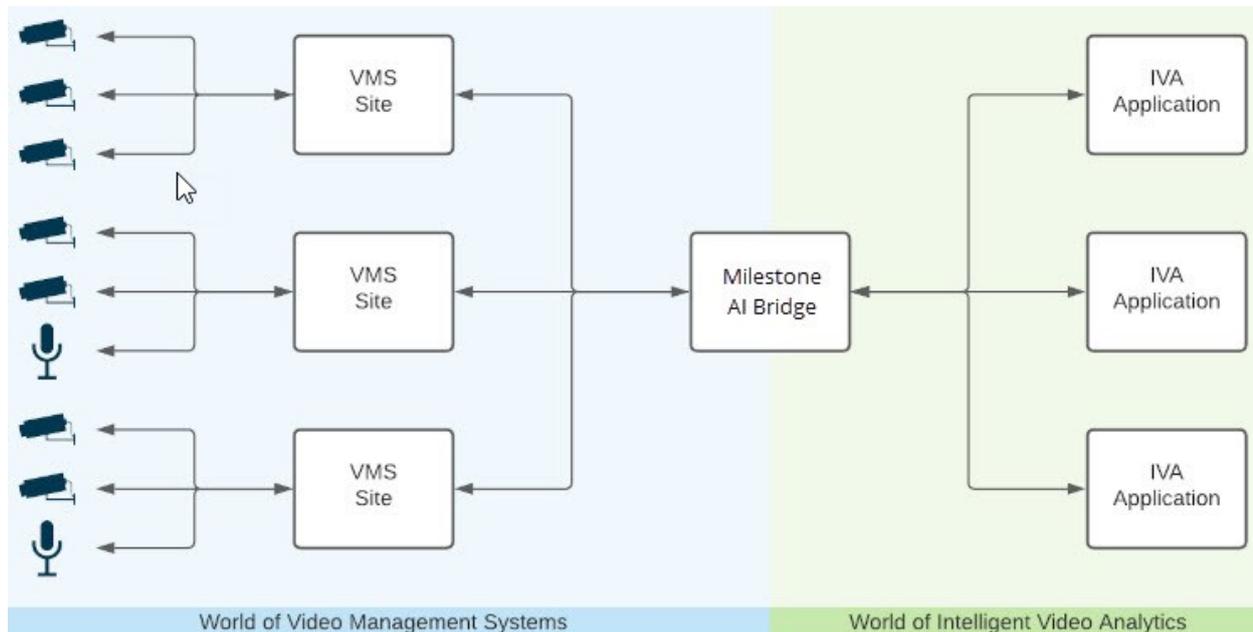
Processing server

When you and your IVA app integrator agree on the best processing server[1], you should also consider the complexity of the IVA applications, the demands for analytics, and the needs for performance, scalability, and resiliency. You can choose between two processing server hosts: the simpler Docker Compose consisting of one server or the more advanced Kubernetes consisting of a cluster of servers.

Application registration

When your IVA app integrator install Milestone AI Bridge and your IVA applications, the IVA applications are automatically registered in Milestone AI Bridge.

When your IVA app integrator enters the login credentials for the Milestone AI Bridge basic user you have created into Milestone AI Bridge, Milestone AI Bridge is automatically registered in your XProtect VMS.

Data exchange

Most communication and exchange of data between the XProtect VMS and the IVA applications happens through Milestone AI Bridge by using various standard protocols. The only exception is the web page on which you draw the graphical representation of the selected analytics topic. This web page is sent directly from the IVA application to XProtect Management Client.

---

[1]One server or a cluster of servers that processes some kind of data. In connection with Milestone AI Bridge, the processing server hosts Milestone AI Bridge and the IVA applications. Typically, the video analysis happens on the processing server.

It is recommended that you secure all the communication between the XProtect VMS, Milestone AI Bridge, and the IVA applications[1]. See Secure the connection between XProtect VMS and Milestone AI Bridge on page 19

From the XProtect VMS to IVA applications

The XProtect VMS shares the following camera information with the IVA applications through Milestone AI Bridge:

- Name and description

- GPS location and field of view

- Current communication status (camera online / offline)

- Available streams and stream properties (among others: codec, resolution, and framerate).

From IVA applications to the XProtect VMS

Through Milestone AI Bridge, the IVA applications send the analytics data[2] back to the XProtect VMS as events, metadata, or video. See also Analytics data types and formats on page 20.

---

[1]A software program that analyzes video for objects and the behavior of objects.
[2]The result of an analytics topic's analysis of a video stream. You can run multiple analytics topics on the same video.

Ports used by the integration
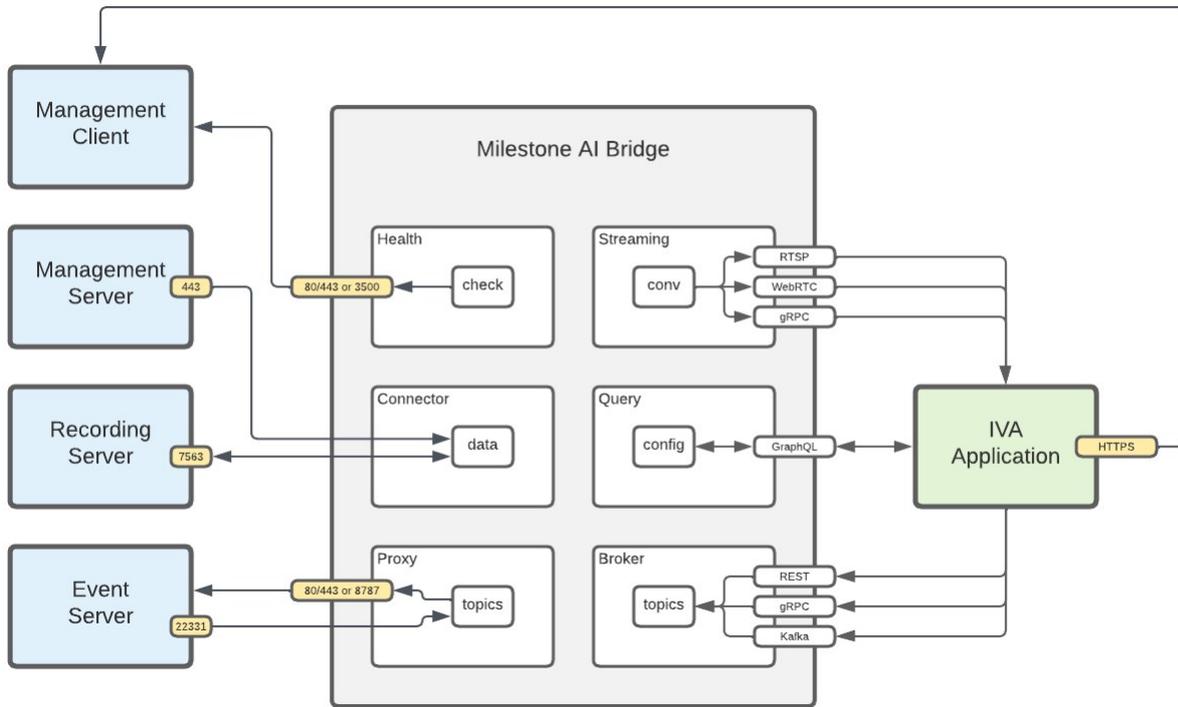
Ports used by the XProtect VMS

Port number	Protocol	Owner	Purpose
80	SOAP	The Management Server service	Configuration. The purpose of port 80 and 443 is the same. • Unsecured communication: use port 80. • Secured communication: use port 443.
443	SOAP		

Port number	Protocol	Owner	Purpose
22331	SOAP	The Event Server service	Events.
7563	IS	The Recording Server service	Video.
	SOAP	The Recording Server service	Status API.

Ports used by Milestone AI Bridge

The port numbers vary depending on whether the processing servers use Kubernetes or Docker Compose.

Docker Compose

Port number	Protocol	Owner	Purpose
3500	GraphQL	Milestone AI Bridge Health container	Health check of processing servers.
8787	VPS	Milestone AI Bridge Proxy container	Video and metadata.

Kubernetes

Port number	Protocol	Owner	Purpose
80	SOAP and API Rest	NGINX controller	Health check of processing servers. Video and metadata. The purpose of port 80 and port 443 is the same. • Unsecured communication: use port 80. • Secured communication: use port 443.
443	SOAP and API Rest		

Ports used by the IVA applications

When an IVA application registers itself on Milestone AI Bridge, the IVA application often also provides an URL to web page displayed in XProtect Management Client. For information on which other ports are used by an IVA application to communicate with Milestone AI Bridge, consult the documentation for the IVA application.

Port number	Protocol	Owner	Purpose
Individual for each IVA application	HTTP or HTTPS	IVA application	Web page made available in XProtect Management Client where you can draw the graphical representation of the selected analytics topic on top of the video from the camera. Requires Microsoft Edge WebView2. See Subscribe for video analytics and receive analytics data back on page 22.

Licensing

Licensing

Milestone AI Bridge is a free MIP SDK and requires no separate XProtect base license. You must have an already running XProtect VMS installation with a base license for a XProtect VMS product version 2022 R1 or later.

If you subscribe to analytics topics that are designed to send modified video back to your XProtect VMS, you must, however, purchase one XProtect device license per video stream received.

Your IVA applications may require one or more licenses. How you purchase these licenses depends on the IVA application manufacturer. Contact your IVA app integrator.

License activation

If you receive video streams from your IVA applications, each video stream uses a device license. As usual, changes in the use of device licenses require license activation.

Some manufacturers of IVA applications have chosen to let you activate licenses to their IVA applications through your Milestone SLC. If this is the case, you activate your IVA applications like any XProtect license.

See also the section about how to activate licenses in the administrator manual for your XProtect VMS.

If a manufacturer of one or more IVA applications has chosen to have their IVA applications activated another way, contact your IVA app integrator.

Requirements and considerations

Minimum system requirements

Installing the plug-in or patch for Milestone AI Bridge does not affect the system requirements for any system components in your XProtect VMS.

For information about the system requirements for the various VMS applications and system components, go to the Milestone website (https://www.milestonesys.com/systemrequirements/).

For requirements for the hardware running your processing server, contact your IVA app integrator.

Compatibility

Milestone AI Bridge is fully compatible with XProtect VMS version 2022 R3 and later.

If you have one of the following earlier versions, you must first install a patch on your computers with XProtect Management Client:

- XProtect VMS 2022 R1

- XProtect VMS 2022 R2

For all versions of your XProtect VMS product, you must install a plug-in on your computers with XProtect Management Client to be able to subscribe to analytics topics and handle other management tasks related to your IVA applications.

If your IVA applications provide an URL with a web page for XProtect Management Client, you must install the Microsoft Edge WebView2 application on computers with XProtect Management Client. You can download the installer from https://developer.microsoft.com/en-us/microsoft-edge/webview2/.

XProtect VMS versions earlier than 2022 R1 are incompatible with Milestone AI Bridge.

Installation

Deployment overview

There are several steps in installing and configuring the integration between XProtect VMS, Milestone AI Bridge, and your IVA applications.

Some of the steps are configuration tasks in XProtect Management Client or installations on computers with XProtect Management Client. The administrator of the XProtect VMS typically handles these steps, if necessary with help from the IVA app integrator, for example when installing and configuring a new integration.

Other steps are performed on systems outside of XProtect Management Client and the XProtect VMS installation and are typically handled by the IVA app integrator.

Some steps are independent of each other, while others need some degree of coordination between the XProtect VMS administrator and the IVA app integrator.

This is how we recommend that the steps are completed and typically by whom:

Step	Responsible	Action	Learn more
1	Integrator and administrator	Based on the analytics needs and the size of the XProtect VMS installation, agree on the best Milestone AI Bridge integration.	https://catalog.ngc.nvidia.com/ Architecture overview and system components on page 6 Ports used by the integration on page 9 Licensing on page 12 Minimum system requirements on page 13 Compatibility on page 13
2	Integrator	Set up one or more processing servers with Milestone AI Bridge.	https://catalog.ngc.nvidia.com/
3	Integrator	Install and configure Milestone AI Bridge and the IVA applications.	https://catalog.ngc.nvidia.com/
4	Administrator	Create a basic user for Milestone AI Bridge and	Create a basic user for Milestone AI Bridge on page 18

Step	Responsible	Action	Learn more
		share its user credentials with the IVA app integrator.	
5	Integrator	Use the basic user credentials from the administrator to log Milestone AI Bridge into the XProtect VMS.	https://catalog.ngc.nvidia.com/
6	Administrator	Install a plug-in on computers with XProtect Management Client. For XProtect VMS product versions 2022 R1 or R2, you must also install a patch.	Install the Milestone XProtect Processing Server Admin Plugin on page 16 Install a patch for XProtect Management Client on page 16
7	Administrator	Secure the communication and comply with GDPR or other laws concerning personal data.	Secure the connection between XProtect VMS and Milestone AI Bridge on page 19 Define the retention time for analytics events on page 20
8	Administrator	Subscribe to analytics topics and do other configuration tasks in XProtect Management Client.	Analytics data types and formats on page 20 View the status of processing servers on page 21 View available IVA applications and their analytics topics on page 22 Subscribe for video analytics and receive analytics data back on page 22 Create rules with analytics events on page 23 Add alarms with analytics events on page 24
9	Integrator and administrator	Test the integration.	Test your subscriptions to analytics topics on page 25

Install a patch for XProtect Management Client

If your XProtect VMS is version 2022 R1 or 2022 R2, you must download and install a patch for XProtect Management Client to display licenses for IVA applications on the **License information** page in XProtect Management Client. You can then activate the IVA application licenses the same way as regular XProtect licenses. Not all IVA applications use this licensing scheme. If your IVA applications do not, you do not need to install the patch.

Also, you need only to install the patch on the computers with XProtect Management Client from which you want to subscribe to analytics topics[1] and manage other administrator tasks related to the Milestone AI Bridge and IVA applications integration.

To install:

1. Log into the computers with XProtect Management Client.

2. Exit XProtect Management Client if the application is running.

3. Download the patch zip file that matches the version of your XProtect VMS from https://catalog.ngc.nvidia.com/resources.

    > ✅ To find the patch easily, search for XProtect.

4. Unzip the downloaded aibridge_xprotect_patch.zip file, and from the `mcactivation` folder, copy the two .dll files to the `C:\Program Files\Milestone\XProtect Management Client` folder. Overwrite the files that are already in the folder.

Now, continue to install the Milestone XProtect Processing Server Admin Plugin. See .

Install the Milestone XProtect Processing Server Admin Plugin

Download and install a plug-in for XProtect Management Client to send and receive data between your XProtect VMS and IVA applications through Milestone AI Bridge.

You need only install the plug-in on the computers with XProtect Management Client from which you want to subscribe to analytics topics and manage other administrator tasks related to the Milestone AI Bridge and IVA applications integration.

To install:

---

[1]A feature in an IVA application that analyzes video for objects in a certain way. An example: an IVA application for traffic analytics has analytics topics for vehicles moving in the wrong direction, speeding vehicles, the entering or exiting of vehicles into or from an area, and free parking spaces.

1. Log into the computers with XProtect Management Client.

2. Exit XProtect Management Client if the application is running.

3. If a patch for your version of XProtect Management Client is required, install this first. See Install a patch for XProtect Management Client on page 16.

4. From https://download.milestonesys.com/aibridge/plugins/, select your version of Milestone AI Bridge and then select the **VideoOS.ProcessingServer.Plugin.Admin.Installer.exe** file to download it.

5. Run the downloaded **VideoOS.ProcessingServer.Plugin.Admin.Installer.exe** file.

6. If the Microsoft Edge WebView2 application is not already installed on the computer, a page is shown from where you can download and install Microsoft Edge WebView2.

7. Follow the instructions in the installation wizard.

When you re-start XProtect Management Client, a new node in the **Site Navigation** called **Processing Servers** is available. If you select **Recording Servers** from the **Site Navigation** and then select a camera, there is also a new **Processing server** tab.

You can configure and manage the behavior of your Milestone AI Bridge and IVA application integration in your XProtect VMS from the **Recording Servers** node and the **Processing server** tab.

If you cannot see the **Processing Servers** node, see Why is the Processing Servers node not available? on page 26.

Configuration

Initial configuration

Initial configuration tasks

Before you install or immediately after you install the patch for XProtect Management Client and the Milestone XProtect Processing Server Admin Plugin, there are a few configuration tasks that you typically define once.

- Create a basic user and assign to the Administrators role so Milestone AI Bridge can connect with your XProtect VMS

- Secure the connections between Milestone AI Bridge and your XProtect VMS

- Define a retention time for events to comply with GDPR or other laws concerning personal data.

Create a basic user for Milestone AI Bridge

You must create a new basic user that Milestone AI Bridge can use when logging into the XProtect VMS. Milestone recommends that the new basic user is only used in connection with Milestone AI Bridge.

Remember to add the basic user to the administrator role.

1. Select **Site Navigation** > **Security** > **Basic Users**.

2. In the **Basic Users** pane, right-click and select **Create Basic User** and specify a user name and password.

   > The password must meet the complexity defined in the appsettings.json file for your XProtect VMS. See the section about creating basic users in your XProtect VMS administrator manual.

3. Clear the **Force Basic User to change password on next login** check box because Milestone AI Bridge cannot change the password when logging in.

4. Keep the **Enabled** status of the basic user and select **OK** to create the basic user.

5. To add the basic user to the Administrator role, select **Site Navigation** > **Security** > **Roles**.

6. Select the **Administrators** role and then the **User and Groups** tab.

7. Select **Add** and then **Basic user.**

8. Select the user you just created for Milestone AI Bridge and select **OK**.

9. In a secure way, share the basic user's login credentials with your IVA app integrator.

Now the IVA app integrator can configure Milestone AI Bridge to log into your XProtect VMS.

Secure the connection between XProtect VMS and Milestone AI Bridge

> ✎ This section is only relevant if you have secured your XProtect VMS using certificates.

You must share the public Certificate Authority (CA) certificate (.cer) and the SSL certificate (.pfx) you use for encrypting your XProtect VMS with your IVA app integrator.

The IVA app integrator must install these certificates on the processing server that has Milestone AI Bridge installed to help secure the connection between the XProtect VMS and Milestone AI Bridge.

See also the administrator manual for XProtect VMS and the Milestone certificate guide.

Secure the connection between XProtect Management Client and Milestone AI Bridge

You must always secure the connections between the computers with XProtect Management Client and Milestone AI Bridge by installing a certificate on the computers with XProtect Management Client. You only need to install the certificate on computers where XProtect Management Client is used to manage the Milestone AI Bridge integration.

Which certificate you must install, depends on whether you have secured your XProtect VMS with certificates or not.

1. Copy the certificate file to the computer with XProtect Management Client.

   - XProtect VMS secured using certificates: Copy the Public Certificate Authority (CA) certificate (.cer) you use with your XProtect VMS.

   - XProtect VMS not secured using certificates: Copy the self-signed server certification `public-authority-[Ubuntu Server IP].cer` file you received from your IVA app integrator.

2. Right-click the certificate and select **Install Certificate**.

3. In the **Certificate Import** wizard, select **Local Machine** as the certificate store.

4. Select **Next** to continue.

5. Select **Place all certificates in the following store** and then select a folder.

6. Select **Browse**, and then **Trusted Root Certification Authorities**.

7. Select **OK** and **Next**.

8. In the **Certificate Import Wizard** window, select **Finish**.

   - If you receive a security warning about installing a root certificate, select **Yes** to continue.

   - If the import has succeeded, a confirmation window is displayed.

9. Verify that the certificate is listed in the center view of the **Trusted Root Certification Authorities** subtree.

Define the retention time for analytics events

To make sure you store the analytics events you receive from your IVA applications for as long as you need them, you can define a retention time.

The retention time for the video and metadata you receive from IVA applications is the same as for all video and metadata recordings in the XProtect VMS. See the administrator manual for XProtect VMS.

When defining retention times, consider whether they comply with GDPR or other laws concerning personal data. See the recommendations in the GDPR privacy guide.

1. From the **Tools** menu, select **Options**.

2. From the **Alarms and Events** tab and the **Event retention** list, find **Analytics Events**.

3. Define a retention time for all analytics events by selecting the **Analytics Events** group. Per default, the analytics topics follow the group setting.

4. If wanted, you can define individual retention times for each analytics topic.

Analytics data types and formats

Through Milestone AI Bridge, you can subscribe to three analytics data types[1] from IVA applications. Each type has different analytics data formats[2], purposes, and expressions in the XProtect VMS.

Type	Purpose, expression, and format
Events	If you subscribe to an analytics topic with the analytics data type **Event**, the IVA application sends an event to the XProtect VMS when the analytics topic discovers that something has happened. You can use the event in rules and for triggering alarms. In XProtect Smart Client, alarms are available from the **Alarm Manager** tab. On the **Alarm Manager** tab, the graphical elements from the analytics topics are displayed as an overlay on the video to assist the operator in identifying what the analytics topic was looking for and the object[3] that caused the event. Depending on the IVA application, some analytics

[1]The nature of the analytics data when the IVA application sends the data back to the XProtect VMS. Possible analytics data types are events, metadata, and video.
[2]The format of the analytics data when the data is sent back to the XProtect VMS. Each analytics data type has different formats. An example: the analytics data type Event has the analytics data format analytics_event.
[3]In connection with video analytics, an object is anything that IVA applications look for in the video. Typical examples are persons and vehicles. But it could also be smaller personal belongings like hats, coats, and luggage and the characteristics or behaviors of these, or a combination of all these. Examples: white cars, luggage left unattended, speeding vehicles, or vehicles moving in the wrong direction.

Type	Purpose, expression, and format
	topics may not have graphical elements to display as overlays on the video. This analytics data type has the format: analytics_event.
Metadata	If you subscribe to analytics topics with the analytics data type **Metadata**, a steady stream of bounding boxes related to the analytics topic is sent to the XProtect VMS. This analytics data type has the formats: deepstream_minimal, onvif_analytics_frame, and onvif_analytics.
Video	If you subscribe to analytics topics with the analytics data type **Video**, the IVA application sends a steady stream of video to the XProtect VMS. Often the video is modified by the IVA application. For instance, you can subscribe to receiving blurred anonymized video into XProtect Smart Client, and create a rule that displays the original video without blurring when the rule is triggered by an analytics event. This enables you to protect privacy but also allows your operators to take action when needed. Each stream of video from the IVA application requires its own device license. This analytics data type has the formats: MJPEG, H.264, or H.265.

View the status of processing servers

You can check the status of your processing servers to ensure that your video is analyzed and analytics data is received from the IVA application.

Which status information is available depends on the IVA application. Typically, you can see the network and hardware load on your processing servers.

1. Select **Site Navigation** > **Servers** > **Processing Servers**.

2. Select a processing server.

3. Check the status data and take corrective actions if necessary.

See also

View available IVA applications and their analytics topics

Each IVA application often has several analytics topics[1]–that is, more ways of analyzing video from the XProtect VMS for objects[2]. Your XProtect VMS can receive analytics data from each analytics topic.

To get an overview of the analytics topics available in your IVA applications:

1. Select **Site Navigation** > **Servers** > **Processing Servers**.

2. Select one of the nodes under **Processing Servers**. Each node represents a processing server[3].

3. In the **Processing Server Information** pane, you can see all IVA applications on the selected processing server.

4. In the list of registered applications, select an IVA application.

5. Under **Topics**, you find a list of the analytics topics belonging to the selected IVA application.

6. Repeat with all processing servers, IVA applications, and analytics topics to get a complete overview.

Subscribe for video analytics and receive analytics data back

You can send video from cameras to be analyzed by analytics topics in your IVA applications and receive the results as analytics data back into your XProtect VMS.

You do this by selecting a camera and then defining which analytics topics you want to subscribe to. You can subscribe to several analytics topics for the video from the same camera.

How each manufacturer of the IVA application has chosen to integrate their solution with Milestone AI Bridge is different, so some of the following steps are examples:

1. Select **Site Navigation** > **Servers** > **Recording Servers**.

2. Select a camera and then the **Processing server** tab.

3. Select an analytics topic that you want to subscribe to for having the selected camera's video analyzed.

4. On the lower part of the **Processing settings** pane, draw the bounding box, arrow, line, or other graphical representation of the selected analytics topic.

---

[1]A feature in an IVA application that analyzes video for objects in a certain way. An example: an IVA application for traffic analytics has analytics topics for vehicles moving in the wrong direction, speeding vehicles, the entering or exiting of vehicles into or from an area, and free parking spaces.

[2]In connection with video analytics, an object is anything that IVA applications look for in the video. Typical examples are persons and vehicles. But it could also be smaller personal belongings like hats, coats, and luggage and the characteristics or behaviors of these, or a combination of all these. Examples: white cars, luggage left unattended, speeding vehicles, or vehicles moving in the wrong direction.

[3]One server or a cluster of servers that processes some kind of data. In connection with Milestone AI Bridge, the processing server hosts Milestone AI Bridge and the IVA applications. Typically, the video analysis happens on the processing server.

5. Example: Select **Apply** and the analytics topic starts analyzing the video.

6. Example: To receive analytics data back to your XProtect VMS, select the check box in front of the analytics topic you just configured.

If you have subscribed to an analytics topic with the **Metadata** or **Video** analytics data types, an analytics camera is created in the camera group **Processing Server Camera Group**. This analytics camera represents the stream of analytics data sent from the IVA application. If you subscribe to two analytics topics on video from the same camera, two analytics cameras are created. The analytics cameras are given the same name as the original camera plus the suffix **[objects] - metadata** or **[objects] - video**.

If it is the first time you have subscribed to an analytics topic sending analytics events, a new **Analytics Event** node is added under **Rules and Events** in the **Site Navigation**. You can see the events created by the IVA application on this new node. You can use these analytics events in rules and alarms.

Managing permissions to view analytics data

Once your XProtect VMS receives analytics data from analytics topics, you must determine which users should have access to the analytics data.
Depending on the analytics data type sometimes you need to give users permissions before the analytics data becomes available. Other times, the permissions automatically follow the user permissions to view a camera.

Analytics events and metadata from analytics topics

You do not have to configure permissions for the **Analytics** and **Metadata** analytics data types. If users have permissions to view video from a camera, they also have permissions to the analytics events and metadata associated to this camera.

Video from analytics topics

If you have subscribed to an analytics topic with the **Video** analytics data type, an analytics camera is created in the camera group **Processing Server Camera Group**. This analytics camera represents the stream of video sent from the IVA application.

You give operators in XProtect Smart Client permissions to these analytics cameras the same way as you give users permissions to cameras in your XProtect VMS.

If you have XProtect VMS administrators with permissions to configure cameras but not to view video from some of these cameras in XProtect Management Client, you should also restrict these administrators from viewing video from analytics topics that originate from cameras they have no permissions to view video from.

Create rules with analytics events

You can create rules with the analytics events from IVA applications as you do with any other events in your XProtect VMS.

1. Select **Site Navigation** > **Rules**.

2. Right-click **Rules** and select **Add Rule**.

3. Give your new rule a name and a description.

4. Select the rule type **Perform an action on <event>**.

5. Select **event** in the **Edit the rule description** area.

6. Select **Analytics Events** and select one of the events from your IVA applications.
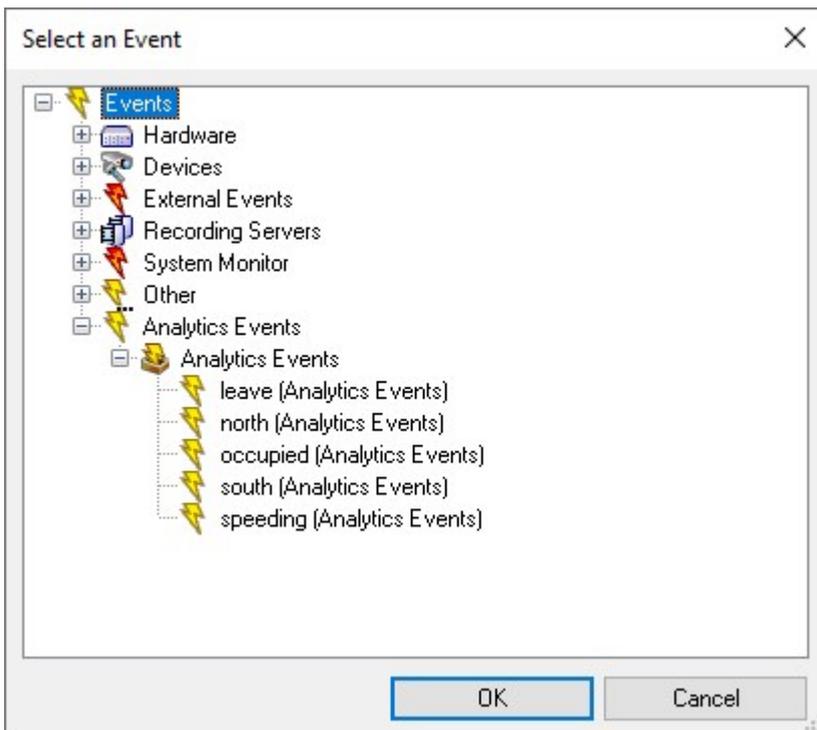
7. Continue to select the various settings for your rule and when done select **Finish**.

See more about rules in the administrator manual for your XProtect VMS.

Add alarms with analytics events

You can add alarms that are triggered by analytics events from IVA applications.

1. Select **Site Navigation** > **Alarms** > **Alarm Definitions**.

2. Right-click **Alarm Definitions** and select **Add New**.

3. Give your alarm definition a name.

4. As triggering event select **Analytics Events** and then the event from an analytics topic.

5. In **Sources**, select the relevant camera or cameras subscribing to the analytics topic.

6. Select an activation period and the additional settings for the alarm definition.

7. Save the alarm definition.

You can read more about alarms in the administrator manual for your XProtect VMS.

Test your subscriptions to analytics topics

When you have subscribed to analytics topics you should test that you receive the expected events, metadata, or video when something is found during the video analysis.

It is a good idea to test your first subscriptions to analytics topics with different analytics data types in cooperation with your IVA app integrator to verify that the integration works as intended.

Analytics events

To test if you receive analytics events from an analytics topic, in XProtect Smart Client, view the live video from a camera that the analytics topic is analyzing and monitor the triggered events or alarms on the **Alarm Manager** tab in XProtect Smart Client.

> ✎ Prerequisite for alarms: You have created an alarm definition with the analytics event you want to test. See Add alarms with analytics events on page 24.

Metadata from analytics topics

To test if you receive metadata from an analytics topic, in XProtect Smart Client view live video from the camera that an analytics topic is analyzing. Ensure that the bounding boxes are displayed around the objects that the analytics topic is analyzing for.

In XProtect Management Client, you can also select the analytics device representing the stream of metadata from the IVA application. If you can see the following illustration, the XProtect VMS is receiving metadata.

Video from analytics topics

To test if you receive video from an analytics topic, view live video from the analytics camera in XProtect Smart Client.

For video from analytics topics, you have to give operators of XProtect Smart Client permission to view the video and in some cases restrict XProtect VMS administrators from viewing the video in XProtect Management Client.

Troubleshooting

The XProtect Management Client user interface

Why is the Processing Servers node not available?

Your IVA app integrator has connected Milestone AI Bridge to your XProtect VMS, and you have installed the Milestone XProtect Processing Server Admin Plugin, but there are still no **Processing Servers** node and **Processing server** tab in XProtect Management Client.

The processing server and your computer with XProtect Management Client are likely not on the same network or domain. To fix it, add the IP address and the hostname of the processing server to the `hosts` file on the computer with XProtect Management Client.

Connectivity issues

Why did the status of the processing server change to Not connected? How do I fix this?

For the integration to work, the processing server with Milestone AI Bridge needs access to the XProtect Management Server service. Also, the Management Server service and the XProtect Management Client need access to the processing server. These three components may be on different networks and domains why reasons behind the **Not connected** status could be:

- Network maintenance
- No internet connection
- The processing server is off

There may be other reasons:

- The basic user you created for Milestone AI Bridge no longer exists or has the required permissions.
- If you have used a self-signed certificate, the certificate may have expired.

Installation log files

Where can I look up what went wrong during an installation?

During the installation, upgrade, or uninstallation of the Milestone XProtect Processing Server Admin Plugin for XProtect Management Client (VideoOS.ProcessingServer.Plugin.Admin.Installer.exe), log entries are written to the Milestone XProtect Processing Server PluginI.log file that you can find in `C:\ProgramData\Milestone\Installer` folder.

Glossary

A

analytics data
The result of an analytics topic's analysis of a video stream. You can run multiple analytics topics on the same video.

analytics data format
The format of the analytics data when the data is sent back to the XProtect VMS. Each analytics data type has different formats. An example: the analytics data type Event has the analytics data format analytics_event.

analytics data type
The nature of the analytics data when the IVA application sends the data back to the XProtect VMS. Possible analytics data types are events, metadata, and video.

analytics topic
A feature in an IVA application that analyzes video for objects in a certain way. An example: an IVA application for traffic analytics has analytics topics for vehicles moving in the wrong direction, speeding vehicles, the entering or exiting of vehicles into or from an area, and free parking spaces.

C

container
A small application with a limited function like a website, a service, a database, or other. Milestone AI Bridge consists of 10 containers.

I

IVA
An acronym for Intelligent Video Analysis.

IVA application
A software program that analyzes video for objects and the behavior of objects.

O

object
In connection with video analytics, an object is anything that IVA applications look for in the video. Typical examples are persons and vehicles. But it could also be smaller personal belongings like hats, coats, and luggage and the characteristics or behaviors of these, or a combination of all these. Examples: white cars, luggage left unattended, speeding vehicles, or vehicles moving in the wrong direction.

P

processing server

One server or a cluster of servers that processes some kind of data. In connection with Milestone AI Bridge, the processing server hosts Milestone AI Bridge and the IVA applications. Typically, the video analysis happens on the processing server.

helpfeedback@milestone.dk

About Milestone

Milestone Systems is a leading provider of open platform video management software; technology that helps the world see how to ensure safety, protect assets and increase business efficiency. Milestone Systems enables an open platform community that drives collaboration and innovation in the development and use of network video technology, with reliable and scalable solutions that are proven in more than 150,000 sites worldwide. Founded in 1998, Milestone Systems is a stand-alone company in the Canon Group. For more information, visit https://www.milestonesys.com/.