

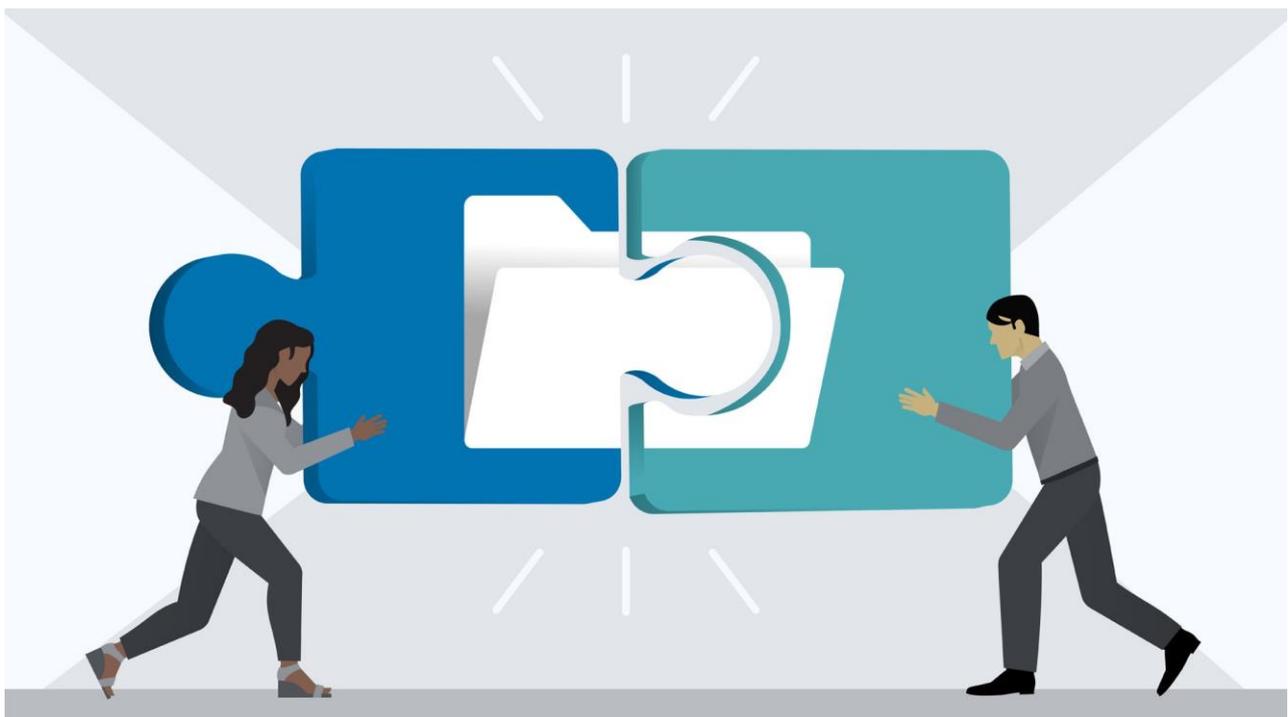
GRAYMATICS

## VMS Integration Document

# Graymatics Video Analytics | Milestone VMS

Version 1.0

**Release Date: September 2021**





# Contents

## Table of Contents

- Contents ..... 1**
- COPYRIGHT INFORMATION ..... 2**
- INTRODUCTION ..... 3**
- SYSTEM REQUIREMENT ..... 3**
- INTEGRATION WITH MILESTONE ..... 4**
- Graymatics Dashboard client Features..... 4**
- Configuration needed in Graymatics Dashboard ..... 5**
- EXTERNAL EVENT CONFIGURATION IN MILESTONE..... 7**
- Milestone Meta Data Support..... 12**
- Metadata output in Smart Client Live View ..... 21**



## **COPYRIGHT INFORMATION**

© 2021 Graymatics Technologies Private Limited, Bangalore, India. All Rights Reserved.

All information contained in this document is the property of Graymatics Technologies Private Limited., It is not to be disclosed by the recipients to third parties, neither allowed to be reproduced by or for third parties in any form or by any means, electronic nor mechanical, including photocopying, without prior written permission from Graymatics Technologies Private Limited.

## INTRODUCTION

Graymatics is a Video Analytics software product for actionable intelligence in security installations. The Analytics are including City Surveillance, Building Surveillance, Business Intelligence, Loss Prevention, Consumer Behavior Analysis, Monitoring Traffic Flow, Parking Management and more 100 AI use cases.

The Graymatics software evaluates the contents of video to determine the specific information about the video contents. The product analyzes rapidly the video for specific data, behavior patterns, tracking movement of people/objects in monitoring zones.

Being an open-platform video analytics solution, Graymatics easily and tightly integrates with many VMS including Milestone. This document provides details on Graymatics integration with Milestone XProtect.

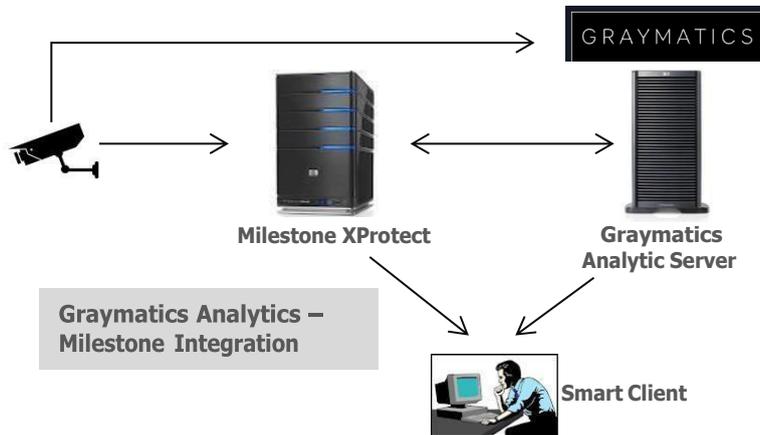
## SYSTEM REQUIREMENT

Graymatics analytics has the following system hardware and software requirements.

CATEGORY	REQUIREMENT
Operating System	Ubuntu 18.04 Server: Ubuntu 18.04 LTS server
Network	Ethernet, 1 Gbit or higher recommended.
Hardware Requirement	x86 Platform, 64 bit, AVX2 support 6 <sup>th</sup> Gen or higher
Server requirement	Core i7 (6 Cores), 3 GHz, 32 GB RAM for up to 15 channels Xeon 6 core, 3 GHz, 32 GB RAM for up to 15 channels Xeon 12 core, 3 GHz, 64 GB RAM for up to 30 channels (approx. 2.5 channels per core, suitable to add multiple CPUs in single server) Supports Nvidia GPU acceleration for all DL based features <b>Note:</b> Actual Configuration will be based on the use-cases and features
Frame Rate Requirement	> 8 fps for Security Analytics (Perimeter Protection/Intrusion), Face Recognition , People Counting, Traffic features and LPR.
Stand Alone version camera support (Works with/without VMS)	Any other camera requires URL to connect camera and get video feed. Models from Axis, Pelco, Bosch, Sony, Honeywell, Hikvision, Dahua, Panasonic, Brickcom, IndigoVision, Cisco, Samsung, Acti, Vivotek, FLIR, Digital Watchdog, and others (ONVIF Cameras). Any Camera with RTSP stream URL. Supports MJPEG, H.264, MPEG4 Supports ONVIF camera,
VMS Software	Milestone (Express/Expert/Professional/Enterprise/Corporate)

## INTEGRATION WITH MILESTONE

- Graymatics application is installed in the Ubuntu Server with GPU.
- Graymatics can take the Video feed directly from Camera.
- Graymatics send alarms to Smart Client application.



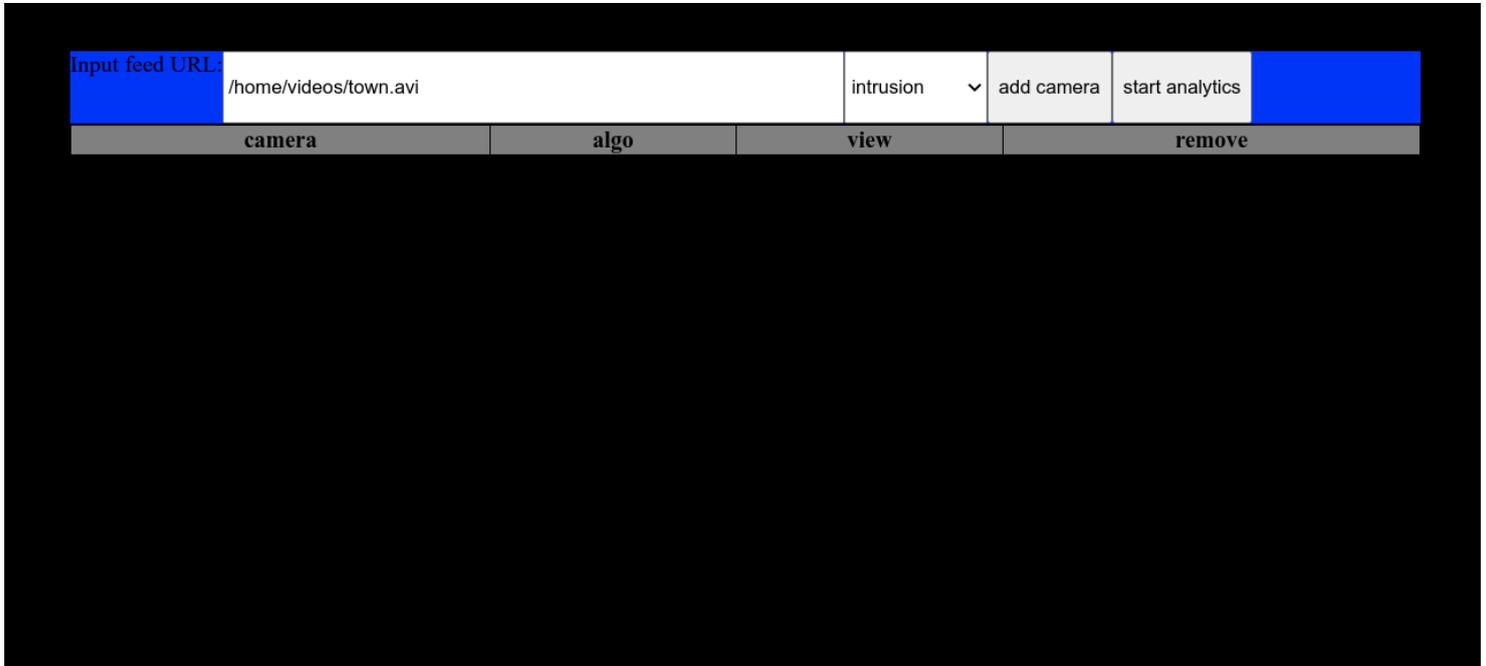
### Graymatics Dashboard client Features

1. Graymatics Management client connects to Milestone and gets video feed
2. The analytic rules are set in Graymatics dashboard and started as service
3. The alarms are sent to Event server of Milestone
4. Graymatics sends events to Milestone as well
5. Graymatics sends metadata to Milestone so that it can be seen in Live view

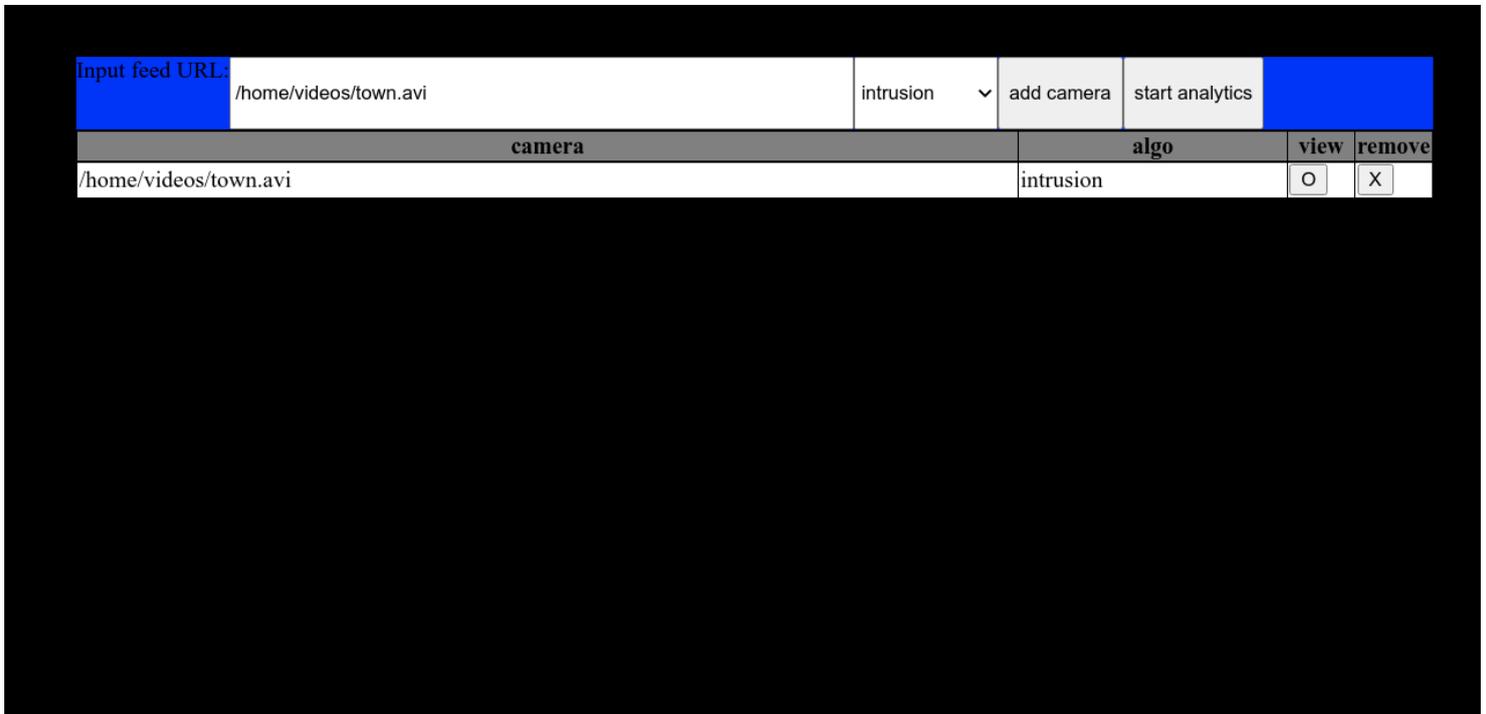
## Configuration needed in Graymatics Dashboard

Addition of Cameras in the Dashboard.

To Add a Camera just enter the RTSP URL of the camera and click on add camera.



## Starting the Analytics



To start the analytics click on Start Analytics

### Deleting the Analytics

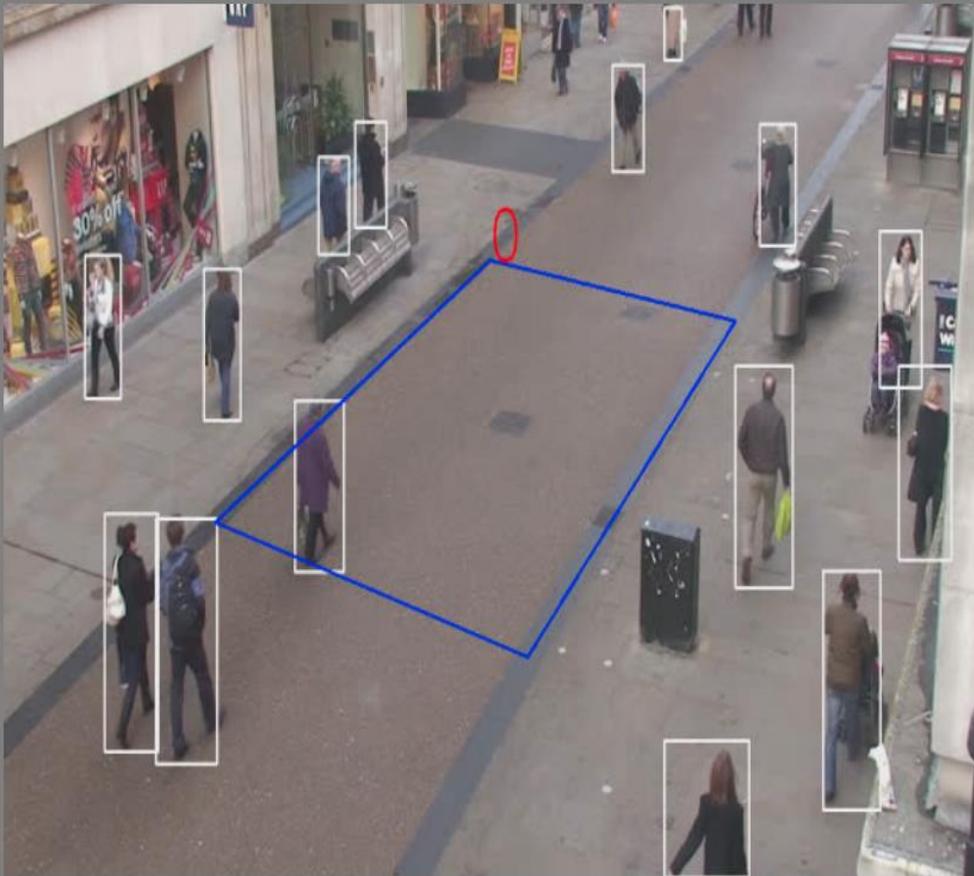
camera	algo	view	remove
/home/videos/town.avi	intrusion	<input type="radio"/>	<input type="button" value="X"/>

To delete analytics, click on remove icon.

### Selecting the Camera Stream to Display Live

camera	algo	view	remove
/home/videos/town.avi	intrusion	<input type="radio"/>	<input type="button" value="X"/>

Click on View icon to open the analytic view of the camera. On Clicking below view will appear.



time	trackId
Tue, 14 Dec 2021 04:54:46 GMT	1639457673_28
Tue, 14 Dec 2021 04:54:42 GMT	1639457673_20
Tue, 14 Dec 2021 04:54:38 GMT	1639457673_14
Tue, 14 Dec 2021 04:54:34 GMT	1639457673_13
Tue, 14 Dec 2021 04:54:33 GMT	1639457673_1

## EXTERNAL EVENT CONFIGURATION IN MILESTONE

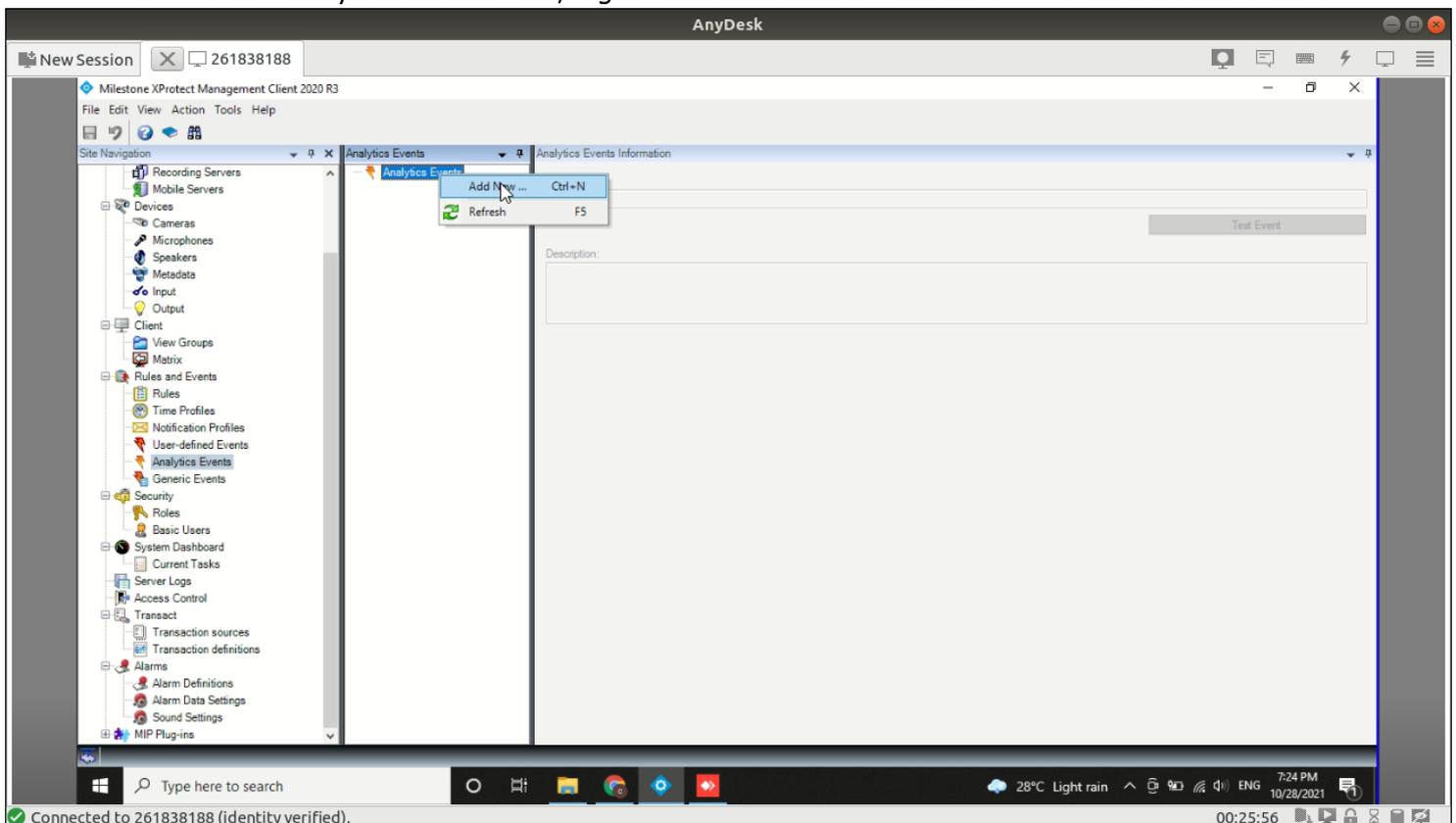
Graymatics alarms can be used as external events in Milestone to trigger applications like Matrix Pop-up, Sound Alarms, E-mail, Event based Recording, triggering Camera Output etc.

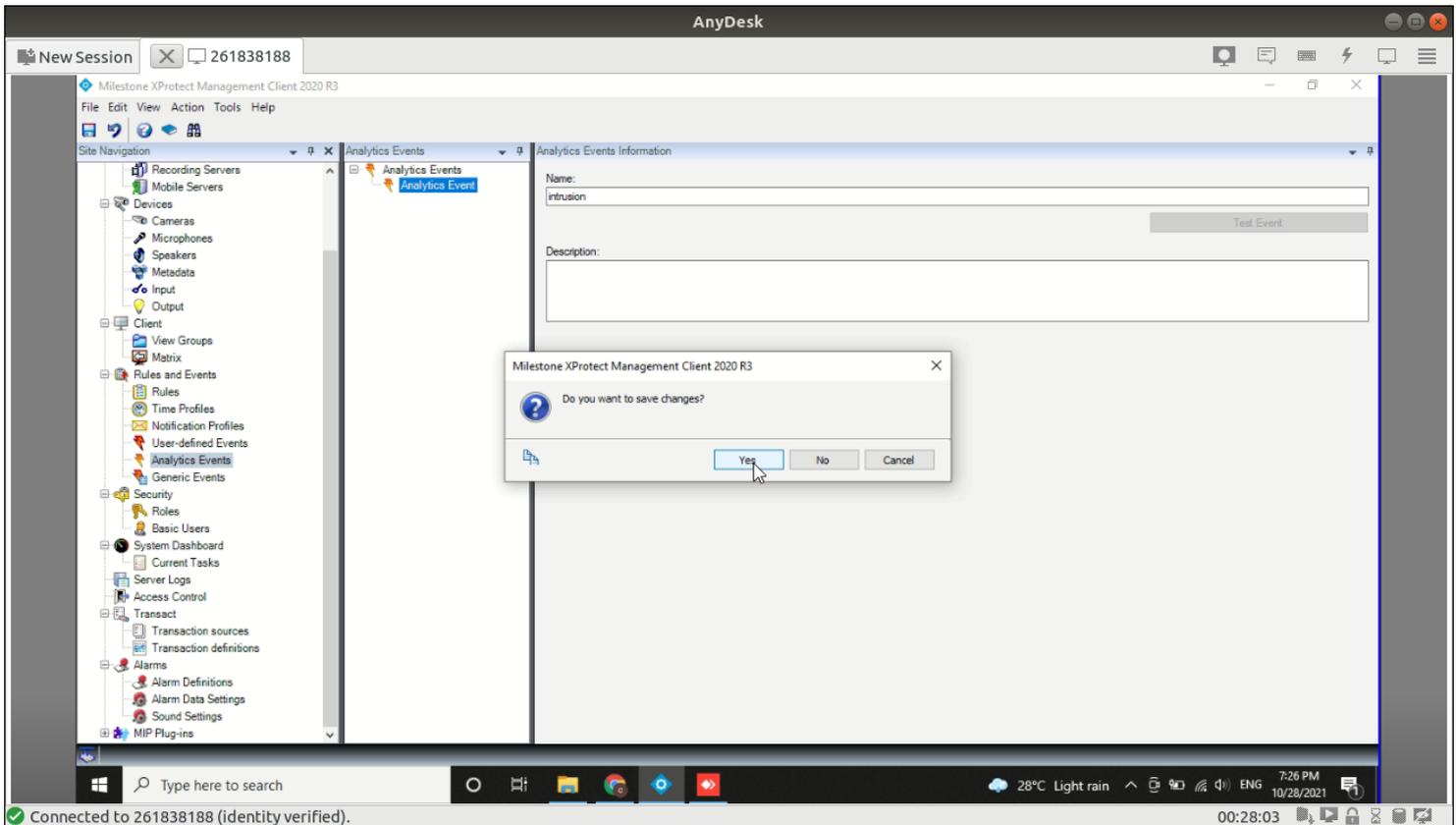
For triggering above mentioned applications in Milestone XProtect Corporate, Analytics events have to be created and then rules need to be defined under Rules and Events

Graymatics sends external events as "AlarmName\_CamerName". For example, if camera name is Highway1 and Loitering application is running in Graymatics, whenever Graymatics detects Tripwire alarm, it sends the alarm to Milestone and external event as "Loitering\_Highway1".

For example, if we want to generate alarms for Loitering application running in Graymatics, the below mentioned steps must be followed:

1. Select Analytics Events under Rules and Events tab.
2. Under Analytics Events tab, right click and select Add New to create a new event.





3. Under Properties tab, mention the required Alarm Name and Description.
4. Select Analytics Events under Triggering event
5. Next, select Alarm Name and select the sources



AnyDesk

New Session 261838188

Milestone XProtect Management Client 2020 R3

File Edit View Action Tools Help

Site Navigation Alarm Definitions Alarm Definition Information

- Recording Servers
- Mobile Servers
- Devices
  - Cameras
  - Microphones
  - Speakers
  - Metadata
  - Input
  - Output
- Client
  - View Groups
  - Matrix
- Rules and Events
  - Rules
  - Time Profiles
  - Notification Profiles
  - User-defined Events
  - Analytics Events
  - Generic Events
- Security
  - Roles
  - Basic Users
- System Dashboard
  - Current Tasks
- Server Logs
- Access Control
- Transact
  - Transaction sources
  - Transaction definitions
- Alarms
  - Alarm Definitions
  - Alarm Data Settings
  - Sound Settings
- MIP Plug-ins

Alarm Definition Information

Add New Ctrl+N  
Refresh F5

Name:

Instructions:

Trigger

Triggering event:

Sources:  Select...

Activation period

Time profile:

Event based: Start:  Stop:

Map

Alarm manager view:

Related map:

Operator action required

Time limit: 5minutes

Events triggered:  Select...

Other

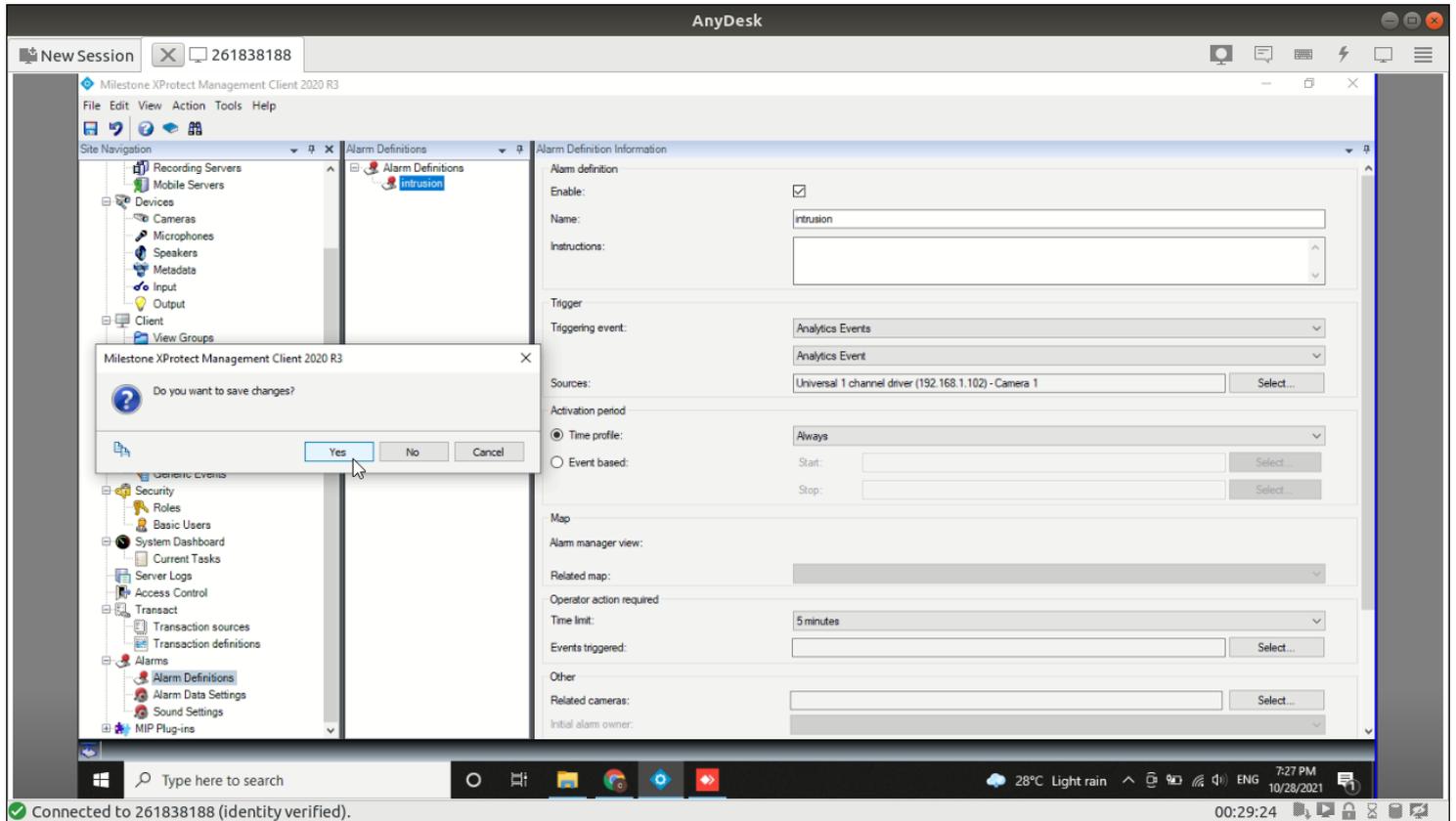
Related cameras:  Select...

Initial alarm owner:

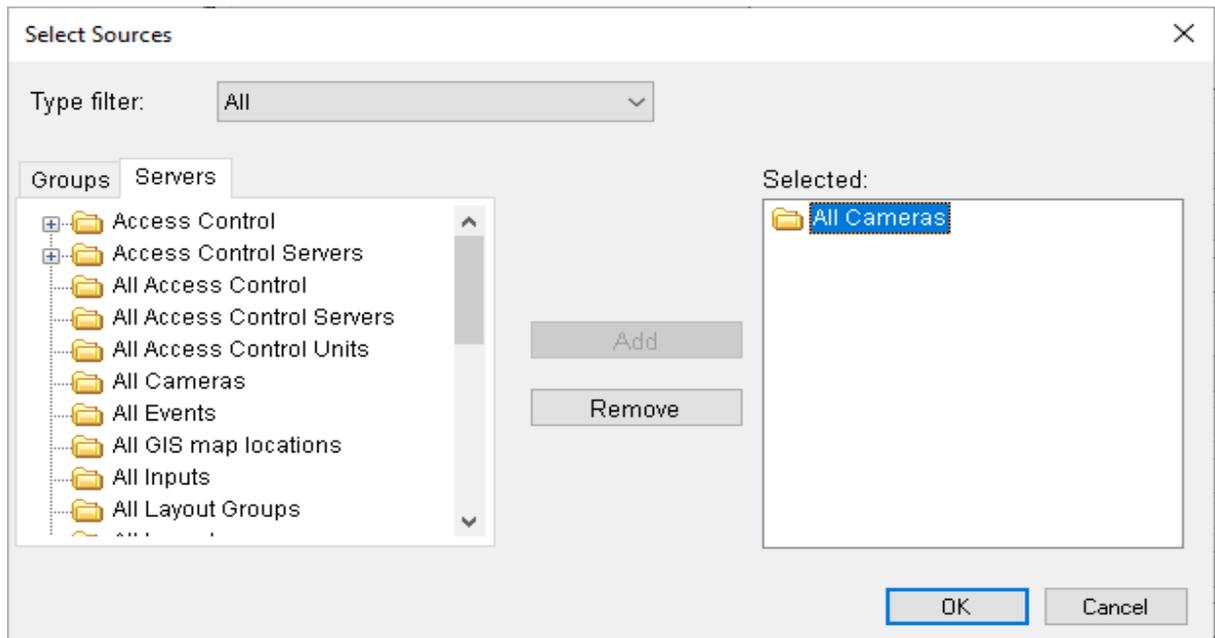
Type here to search

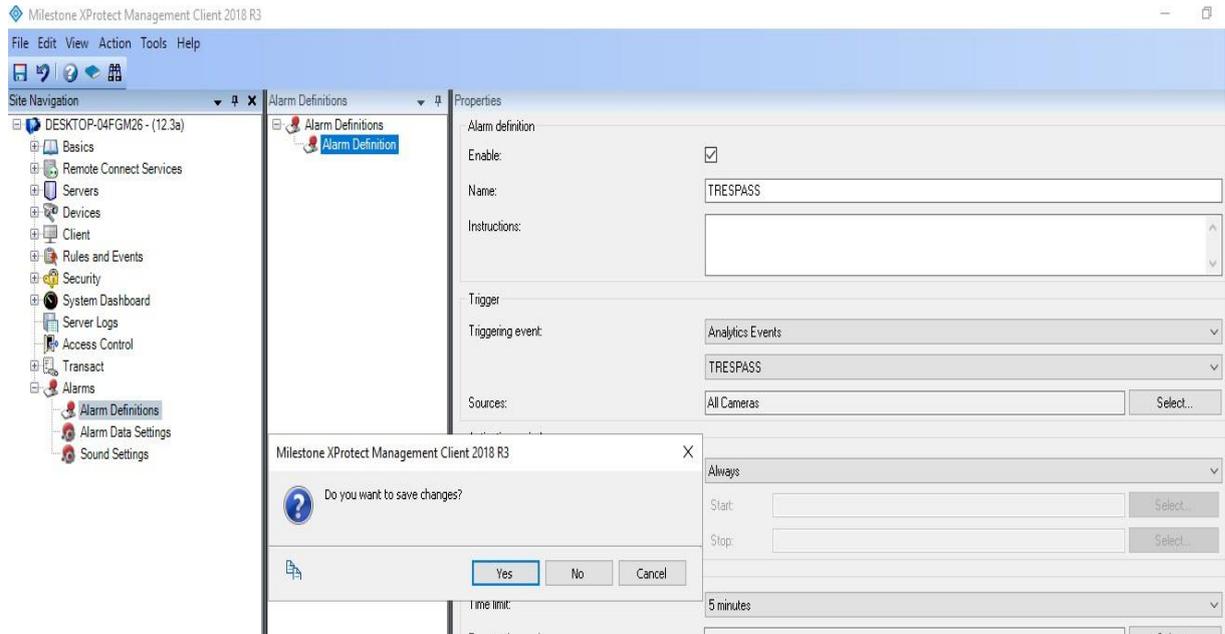
28°C Light rain 7:28 PM 10/28/2021

Connected to 261838188 (identity verified). 00:30:08



- 6. Select all cameras & add it to the selected list
- 7. Save changes





## Event Output

Milestone XProtect Smart Client

12/14/2021 4:56:01 AM

Live Playback Search Property

XProtect < Select view >

Views

Search views and cameras...

Default group

Default view group

New View (1 x 1)

New View (4 x 3)

Private

Cameras

DESKTOP-OS718HD

Camera Group 1

Universal 1 channel driver (192.168.1.1)

MIP Plug-ins

Property Side panel

Property Value

Shared globally

Empty

Shared user-private

Empty

Quick Filters

New (1210)

In progress (0)

On hold (0)

Closed (0)

Servers

DESKTOP-OS718HD

Alarms New (filter applied) Clear filter

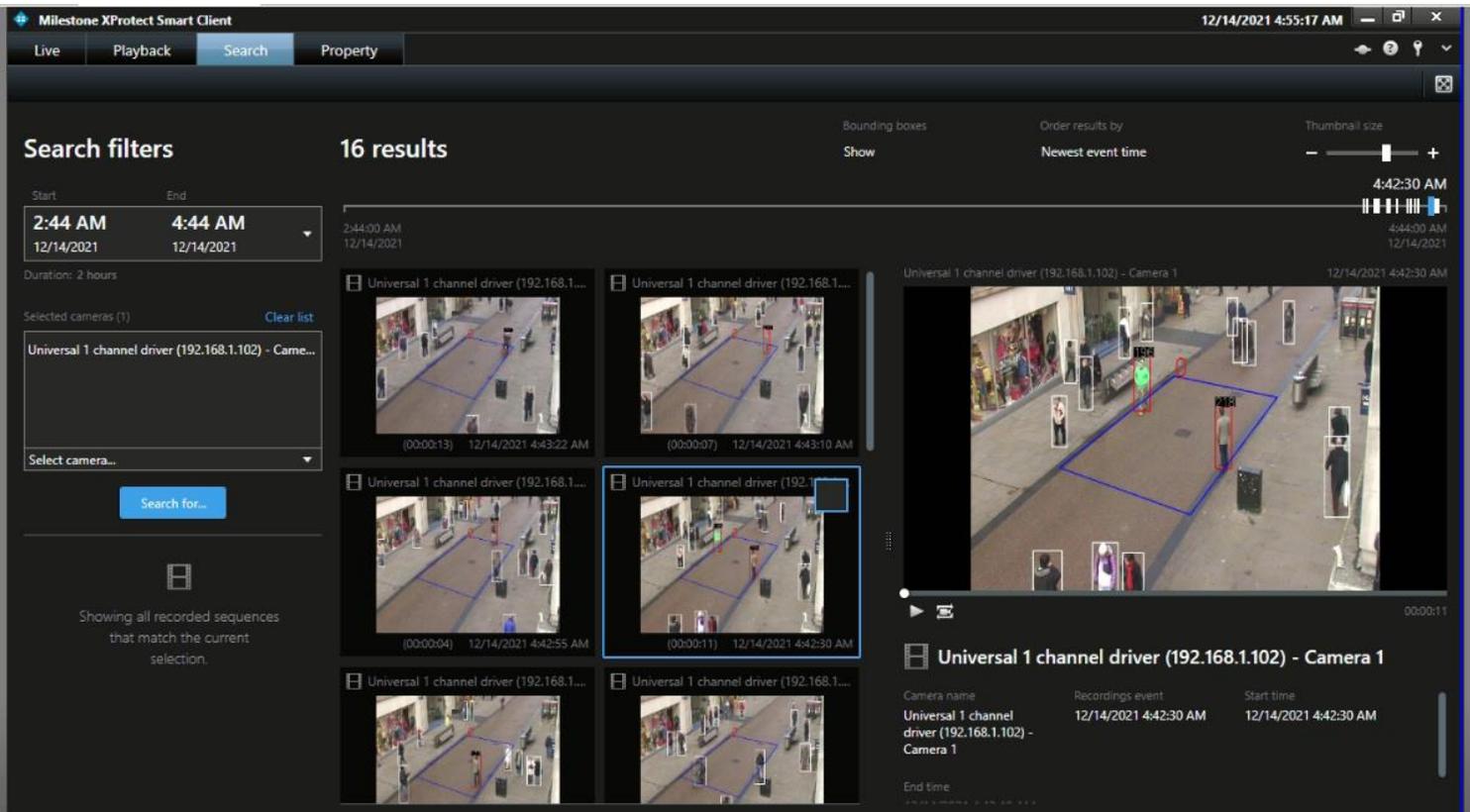
Time	Priority Level	State Level	State Name	Message	Source	Owner	ID
12:50:18 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2550
12:50:18 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2551
12:50:19 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2552
12:50:20 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2553
12:50:24 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2554
12:50:27 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2555
12:50:27 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2556
12:50:28 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2557
12:50:30 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2558
12:50:32 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2559
12:50:32 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2560
12:50:33 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2561
12:50:35 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2562
12:50:35 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2563
12:50:45 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2564
12:50:46 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2565
12:50:46 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2566
12:50:47 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2567
12:50:50 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2568
12:50:51 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2569
12:50:51 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2570
12:51:00 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2571
12:51:07 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2572
12:51:15 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2573
12:51:16 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2574
12:51:16 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2575
12:51:17 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2576
12:51:18 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2577
12:51:19 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2578
12:51:21 PM 12/14/2021	1	1	New	intrusion	Universal 1 channel driver (		2579

### Milestone Meta Data Support

Graymatics sends Alarms/Events to Event Server of Milestone for storage and viewing in Smart Client application.

Alarms can be viewed in either of the following 2 ways:

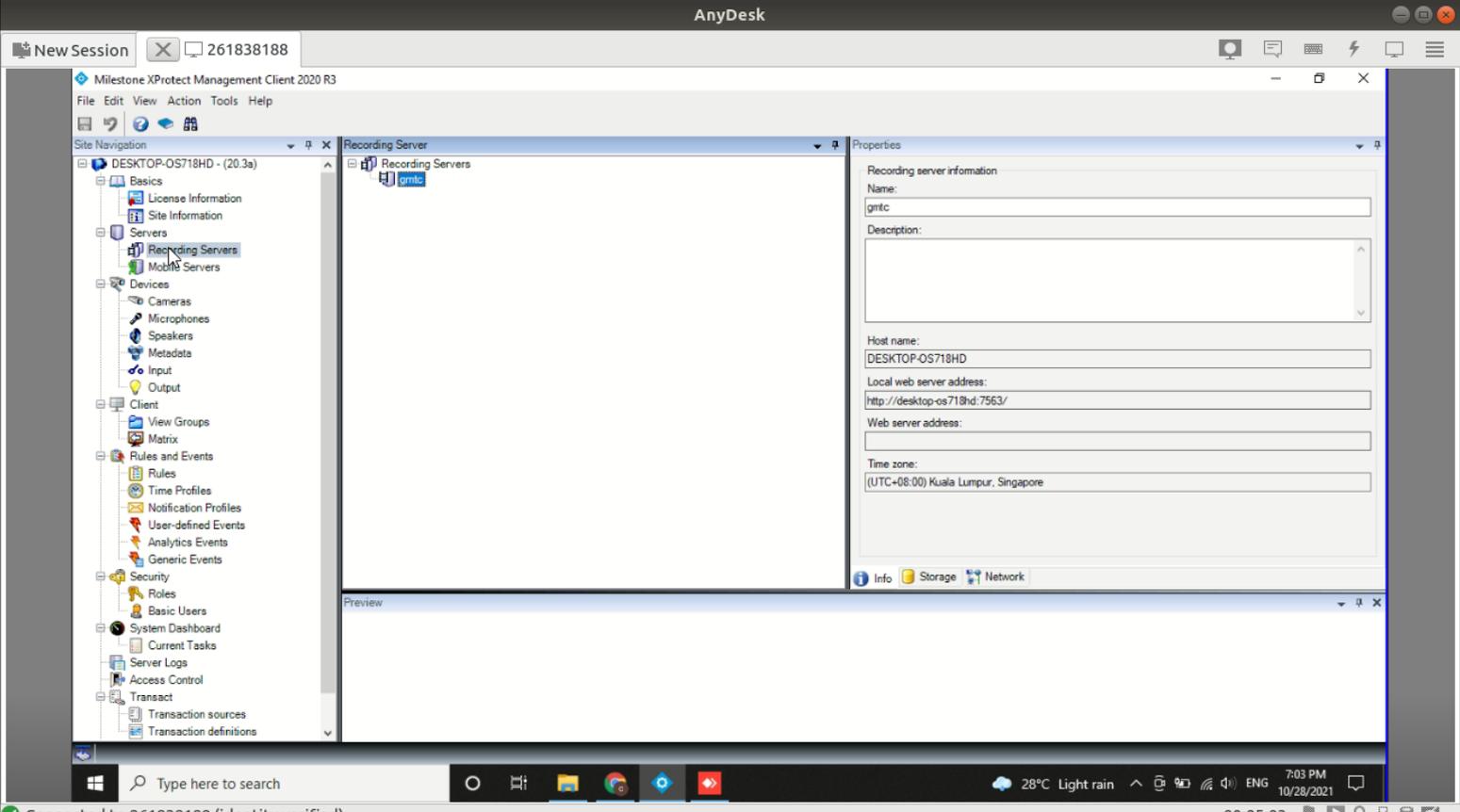
1. The Alarm Manager displays alarms in real time and would be able to search alarms.



## 2. Alarms sent by Graymatics can be seen in Live Video of Milestone Smart client

Graymatics provides live view of alarms via Universal driver. The streams from the dashboard can be accessed via RTSP stream over Universal driver in client. In order to do that we need to add the universal driver as shown in the below steps:

Open the Management client and select the recording server.

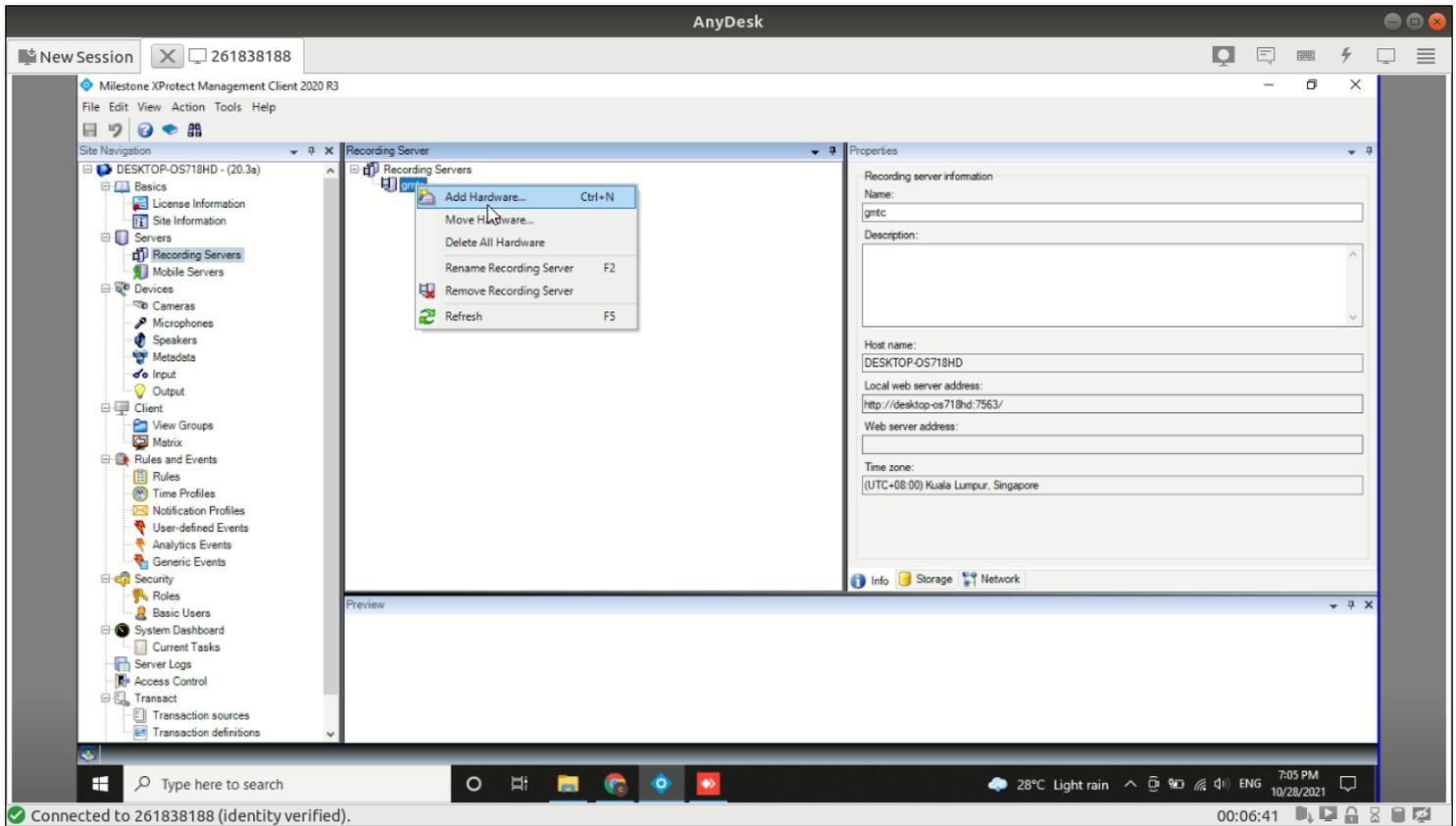


The screenshot displays the Milestone XProtect Management Client 2020 R3 interface. The main window is titled "Recording Server" and shows the configuration for a recording server. The left sidebar contains a "Site Navigation" tree with categories like Basics, Servers, Devices, Client, Rules and Events, Security, and System Dashboard. The "Recording Servers" folder is expanded, showing a sub-folder named "gntc". The right pane displays the "Properties" for the selected recording server, with the following fields:

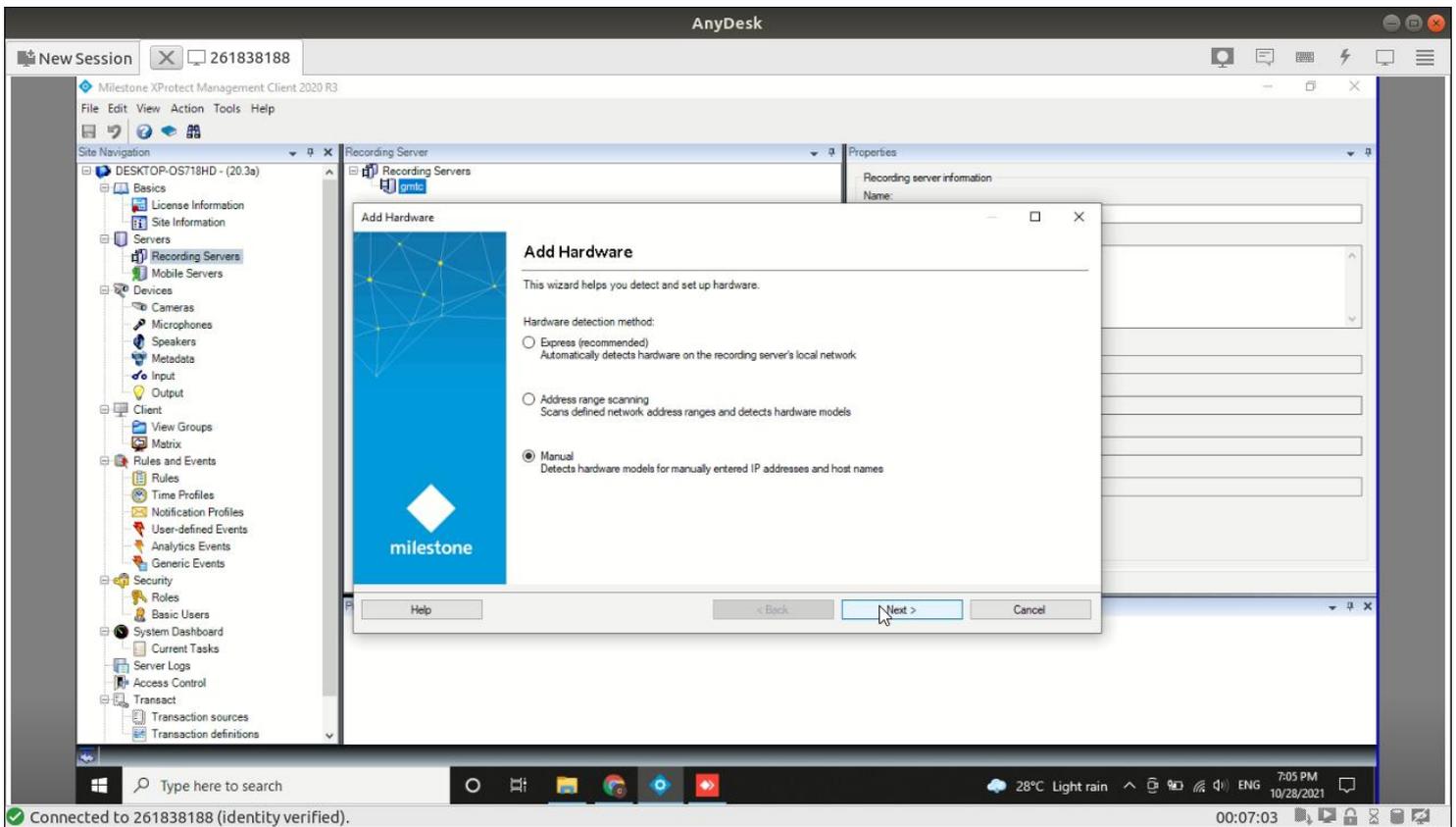
- Recording server information
- Name: gntc
- Description:
- Host name: DESKTOP-OS718HD
- Local web server address: http://desktop-os718hd.7563/
- Web server address:
- Time zone: (UTC+08:00) Kuala Lumpur, Singapore

The bottom status bar shows "Connected to 261838188 (identity verified)." and the system tray includes the time "7:03 PM 10/28/2021" and weather information "28°C Light rain".

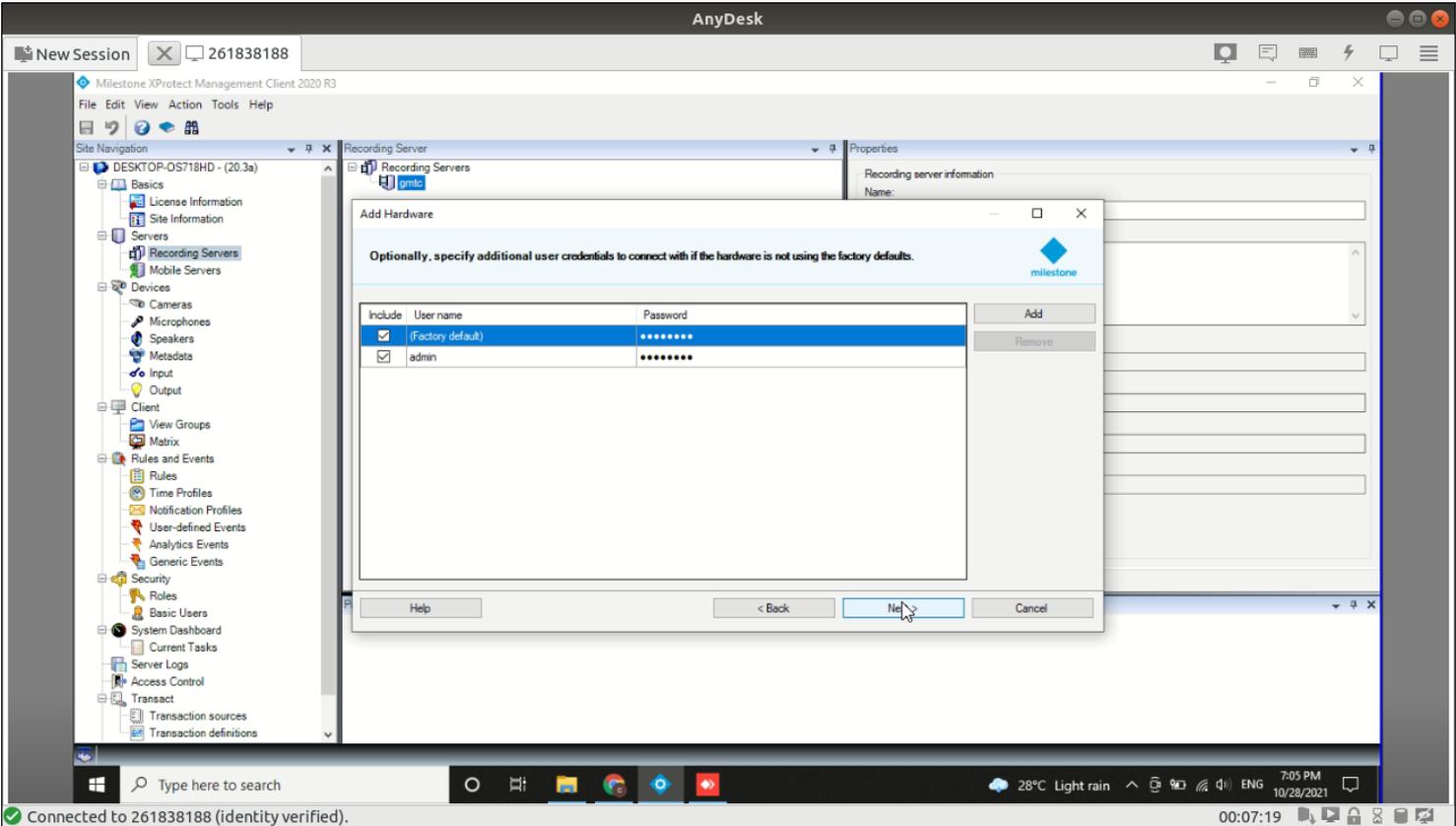
### Click Add hardware



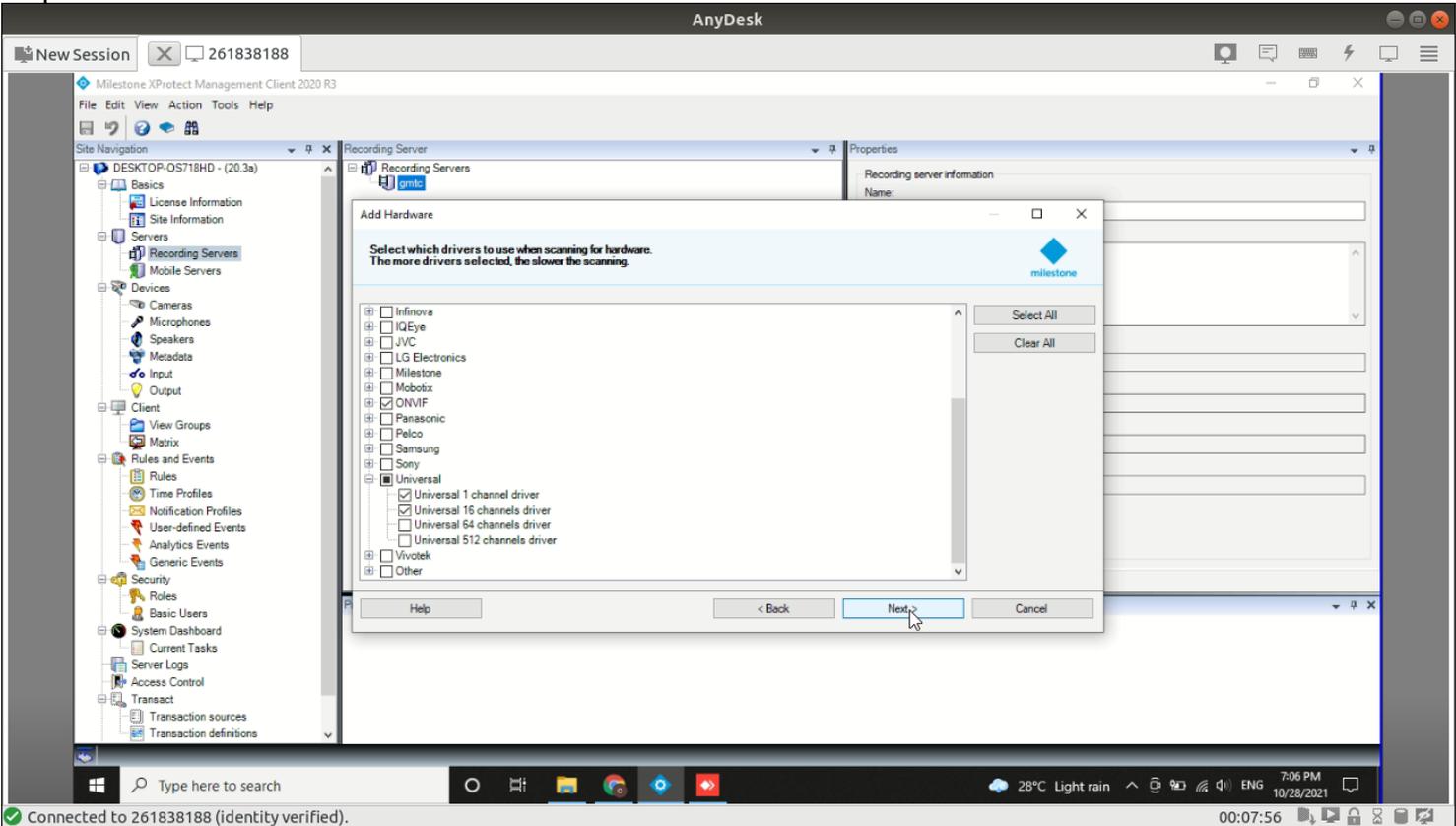
### Select manual and click next



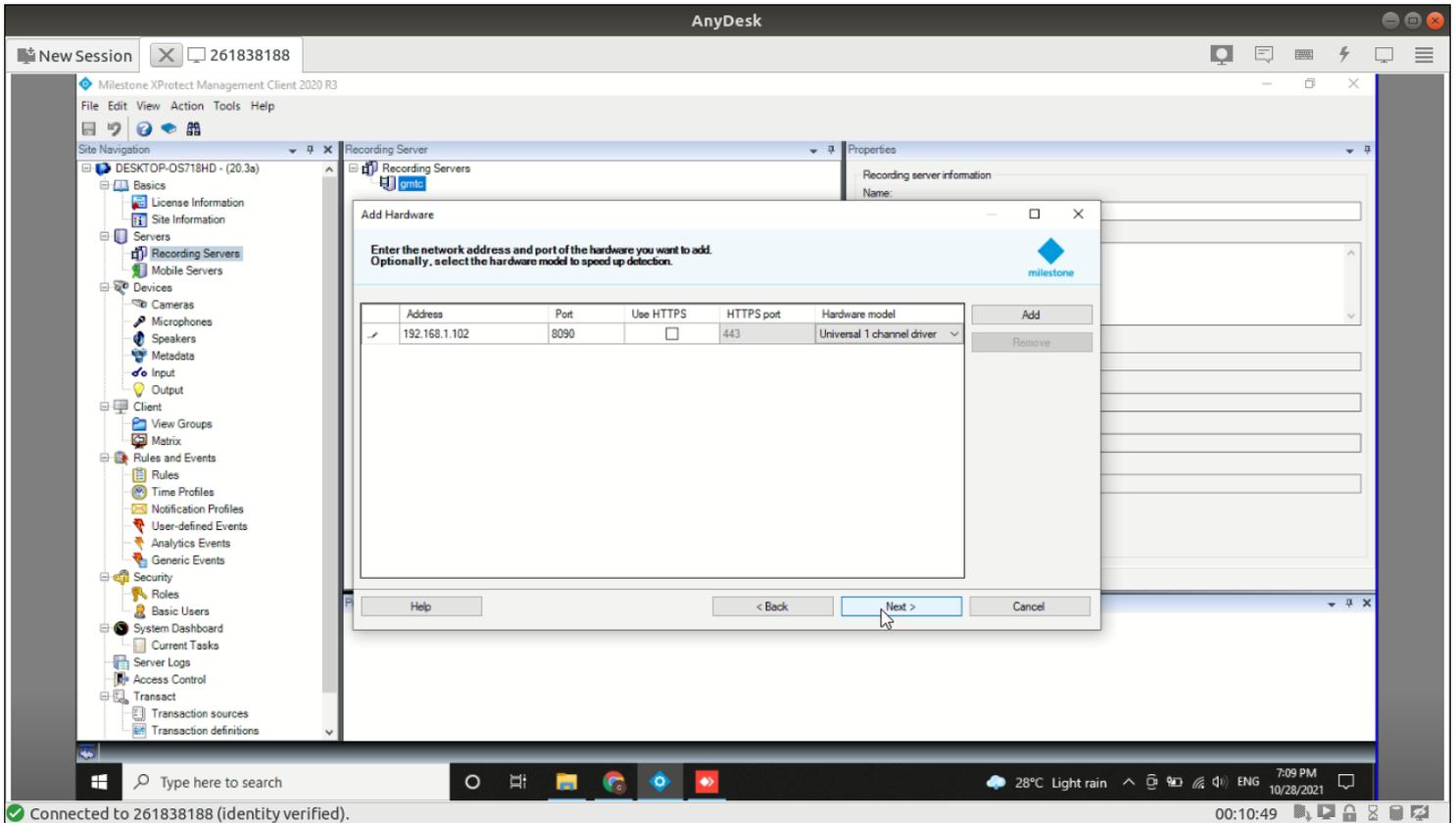
Specify User credential and click next



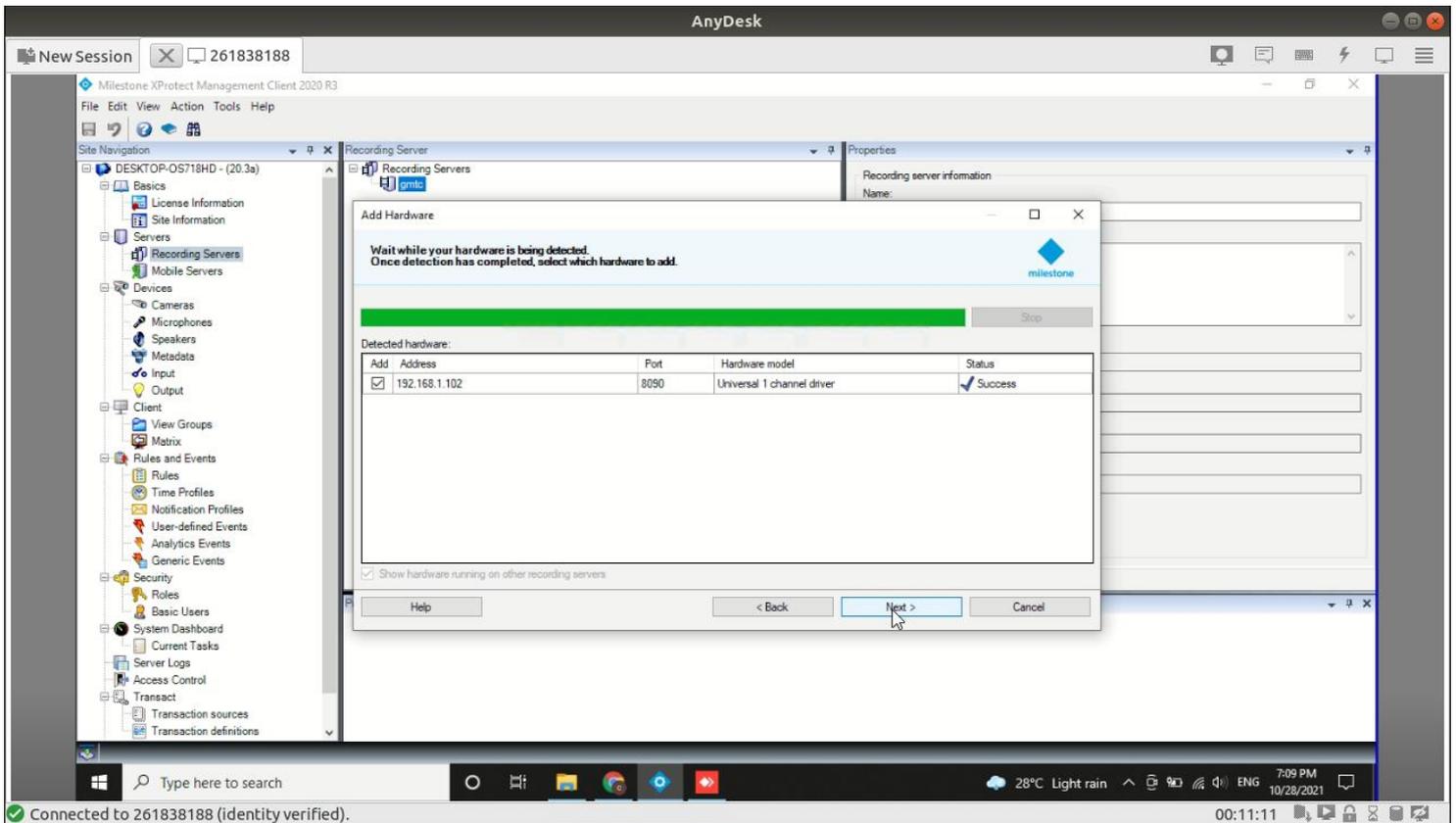
Select universal from list and check channel as per requirement and click next



Enter the IP address of the server and click next

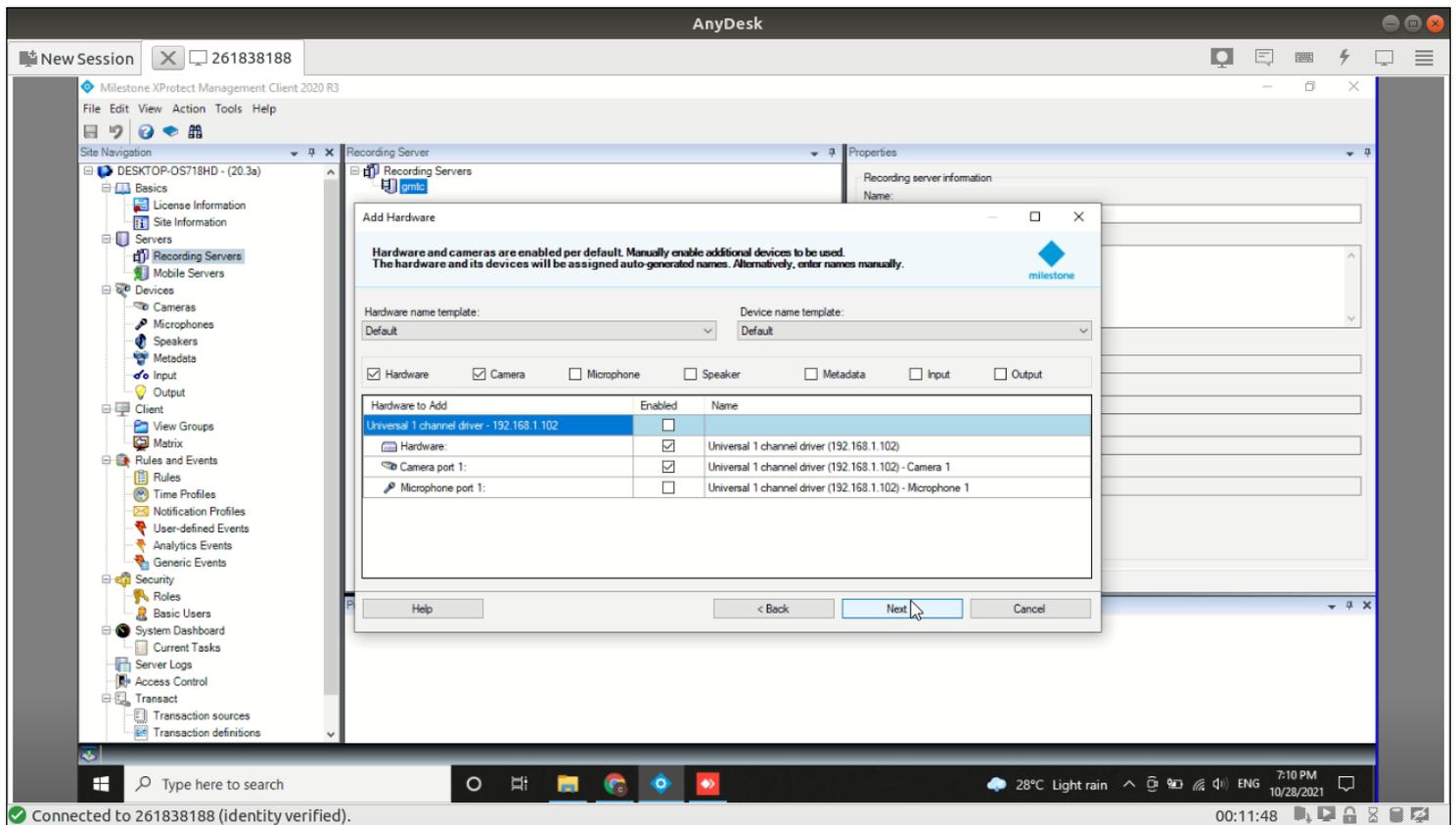


Click next after success status

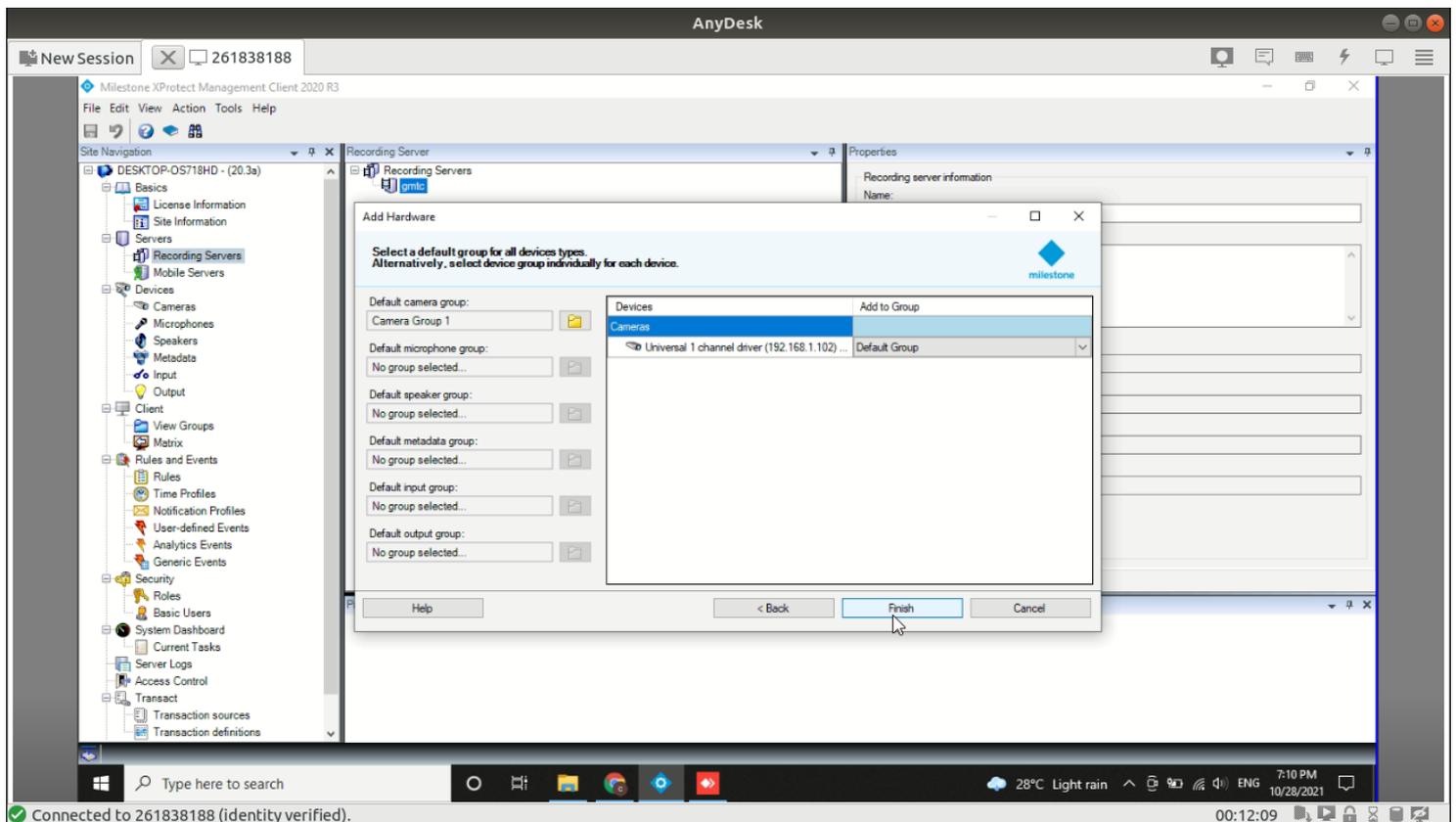




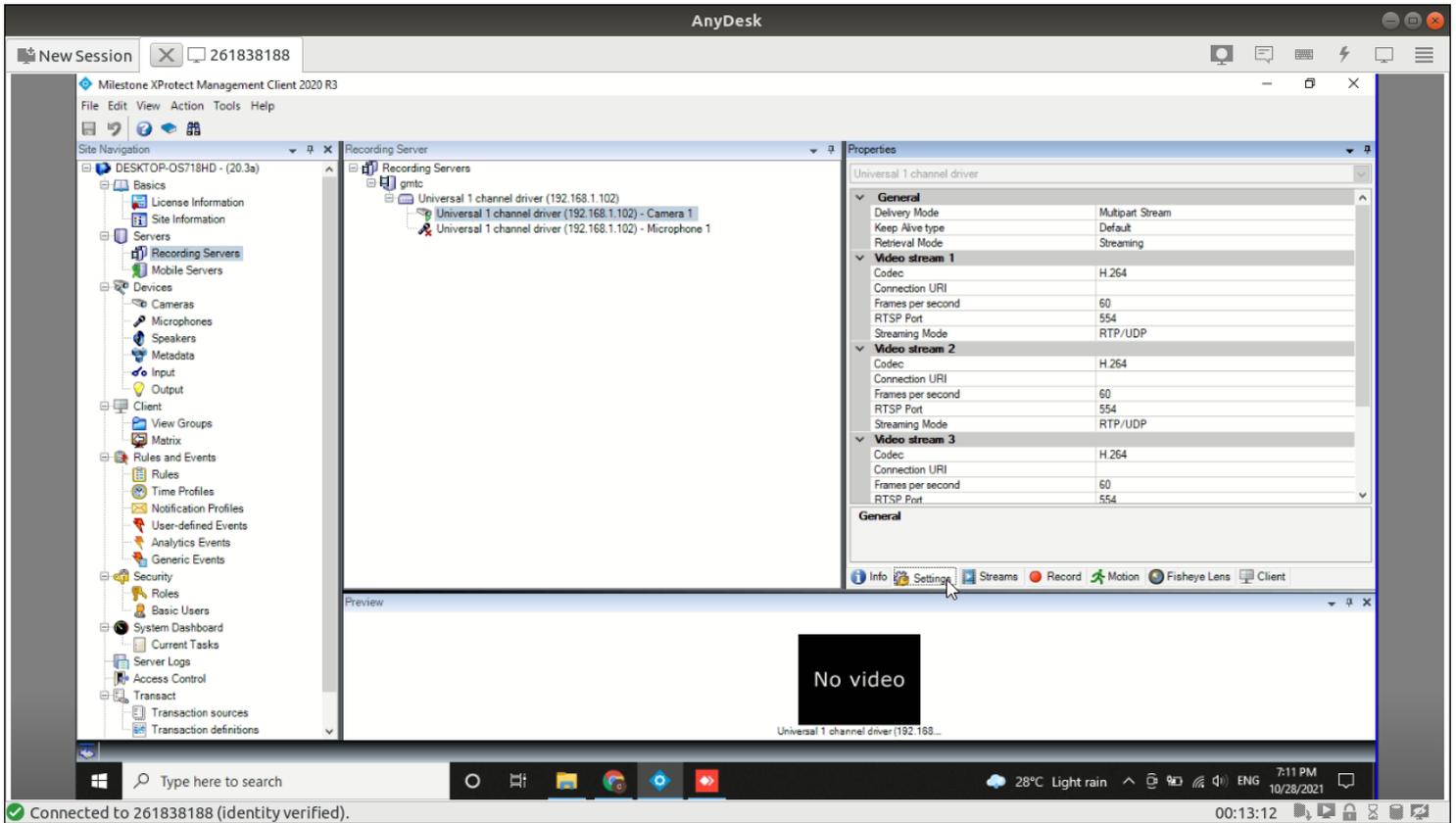
Check hardware and camera port and click next



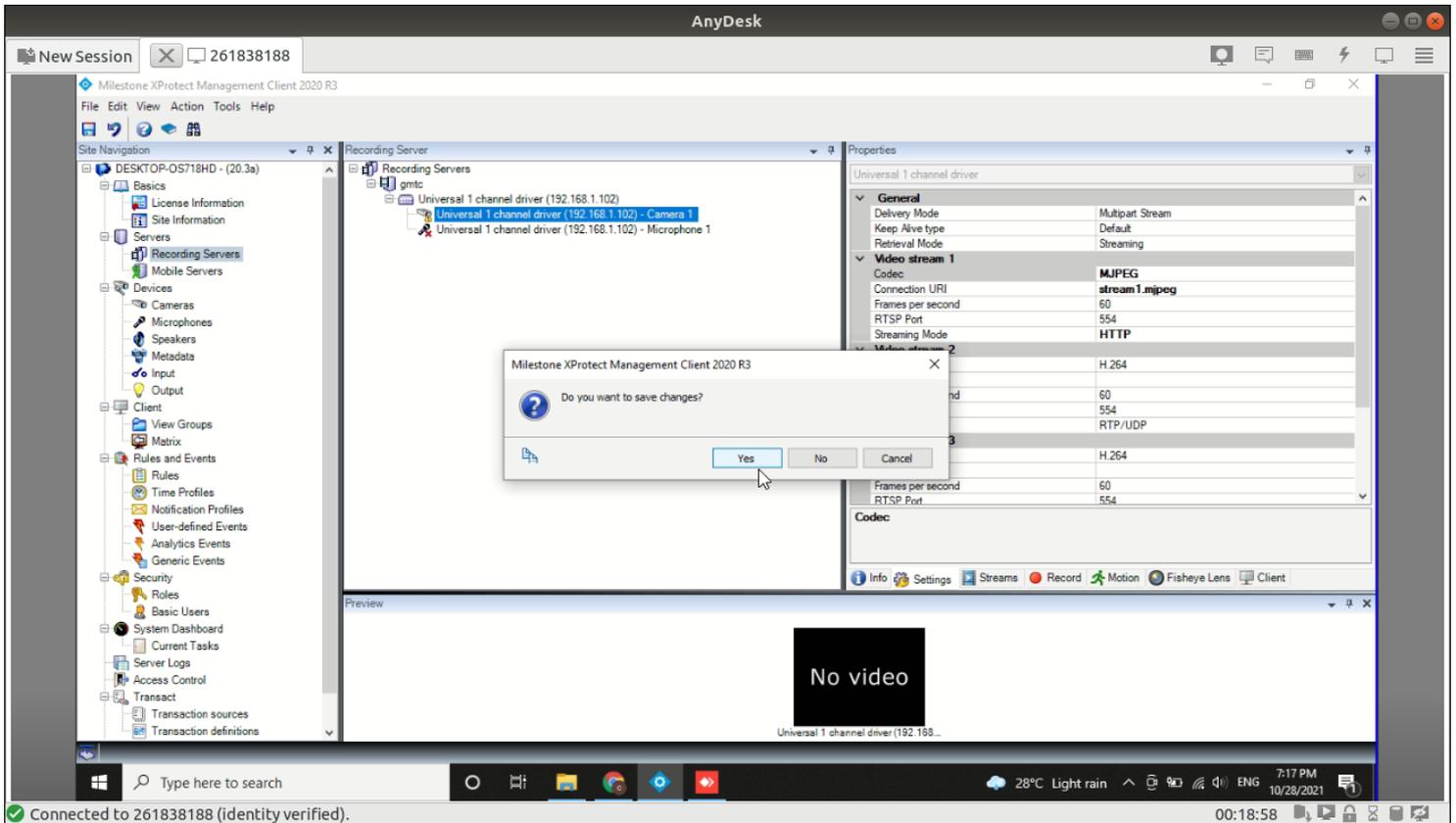
Select group and click finish



Once added click on universal channel 1 and mention the stream url

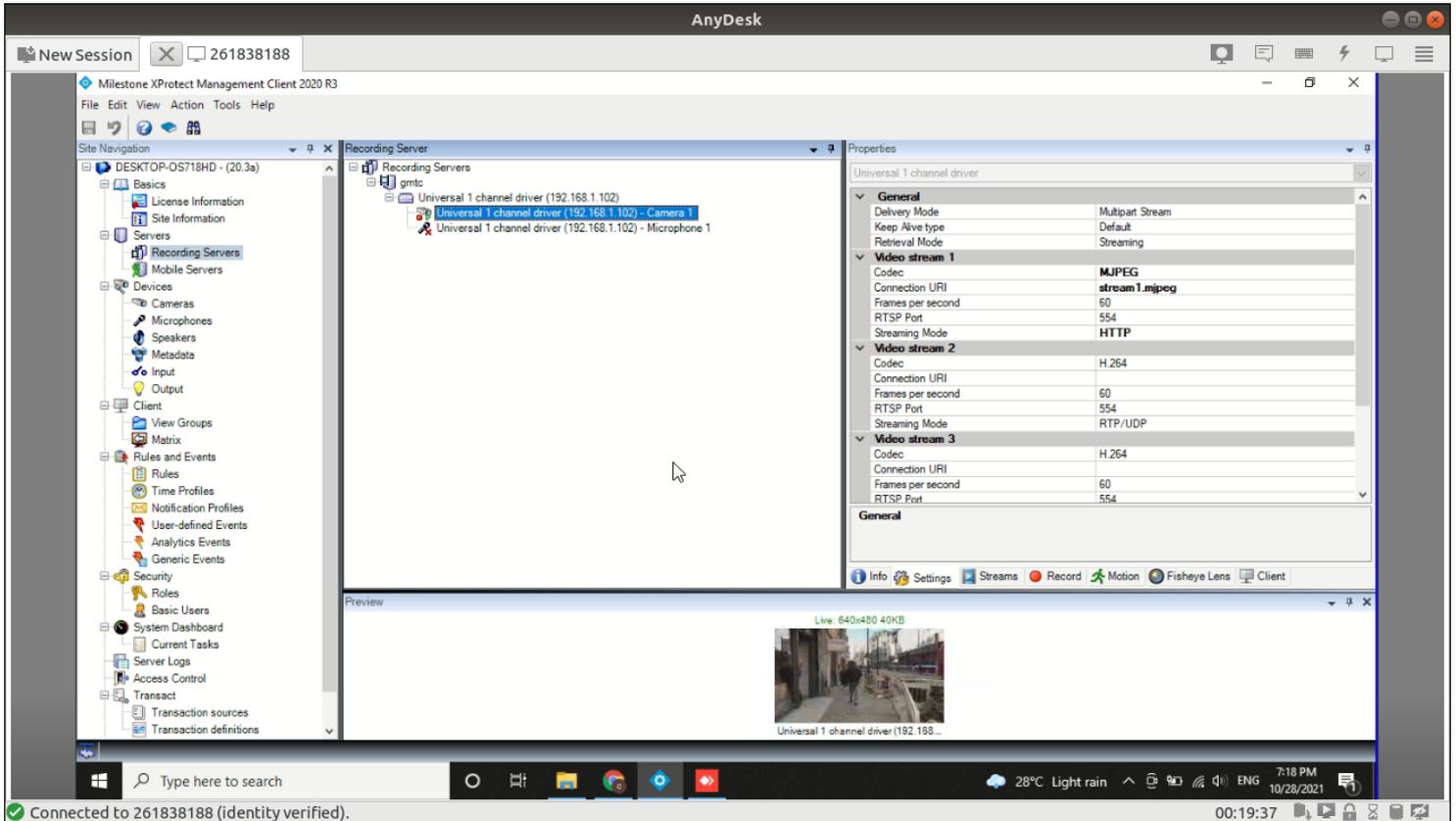


Save changes after the url is entered.

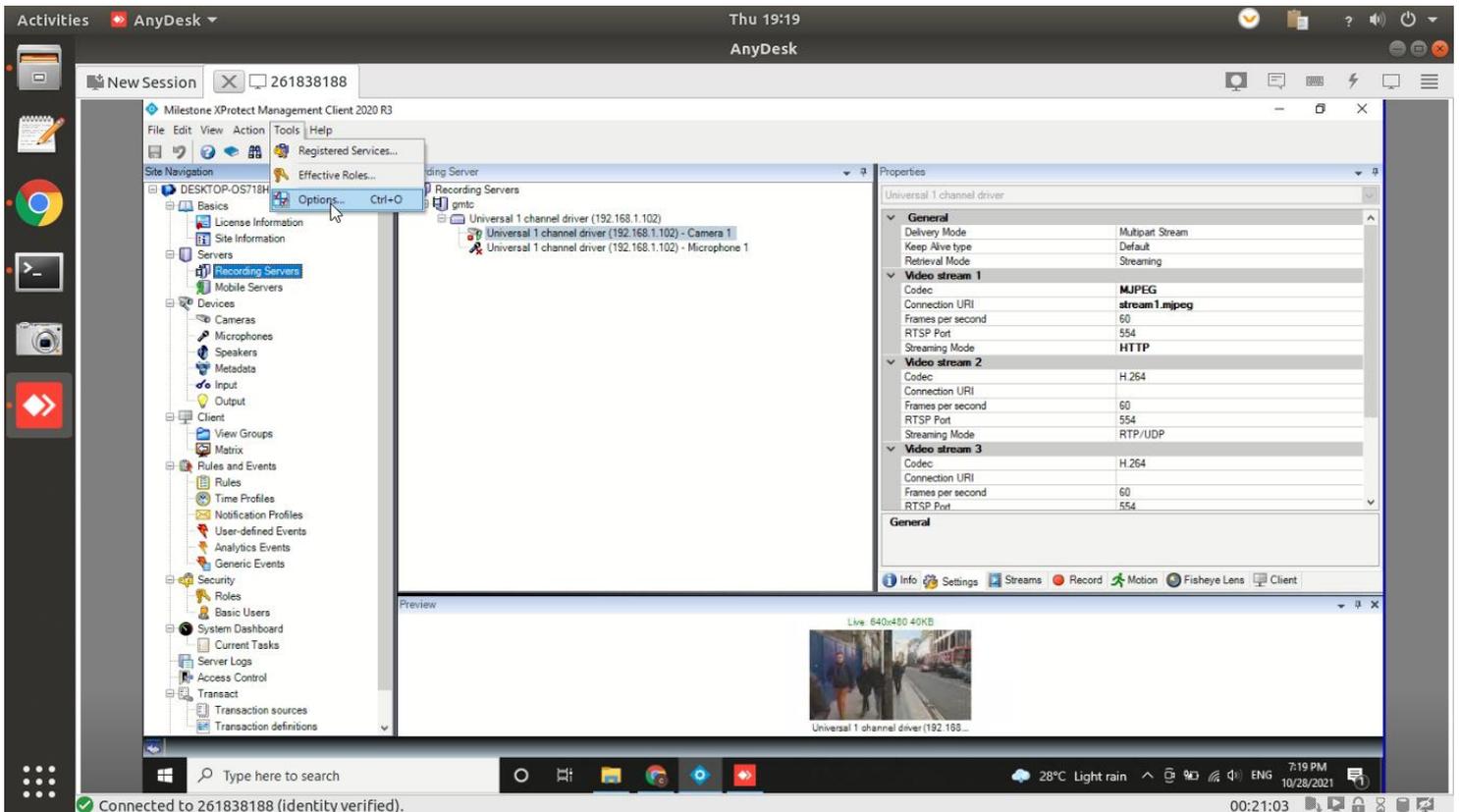




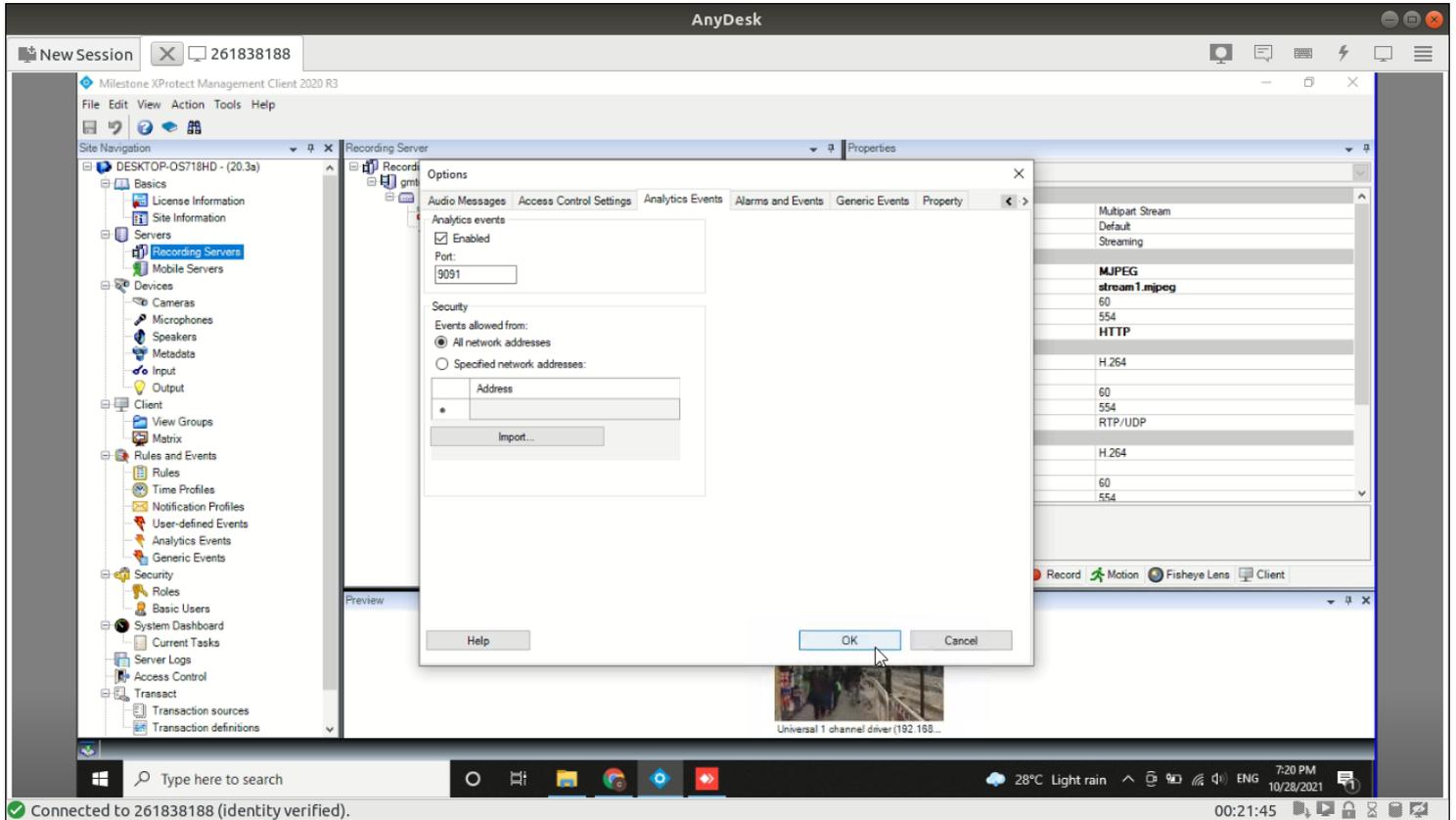
If the setting is right and the port/ip is forwarded, the stream will be valid and the driver will work perfectly.



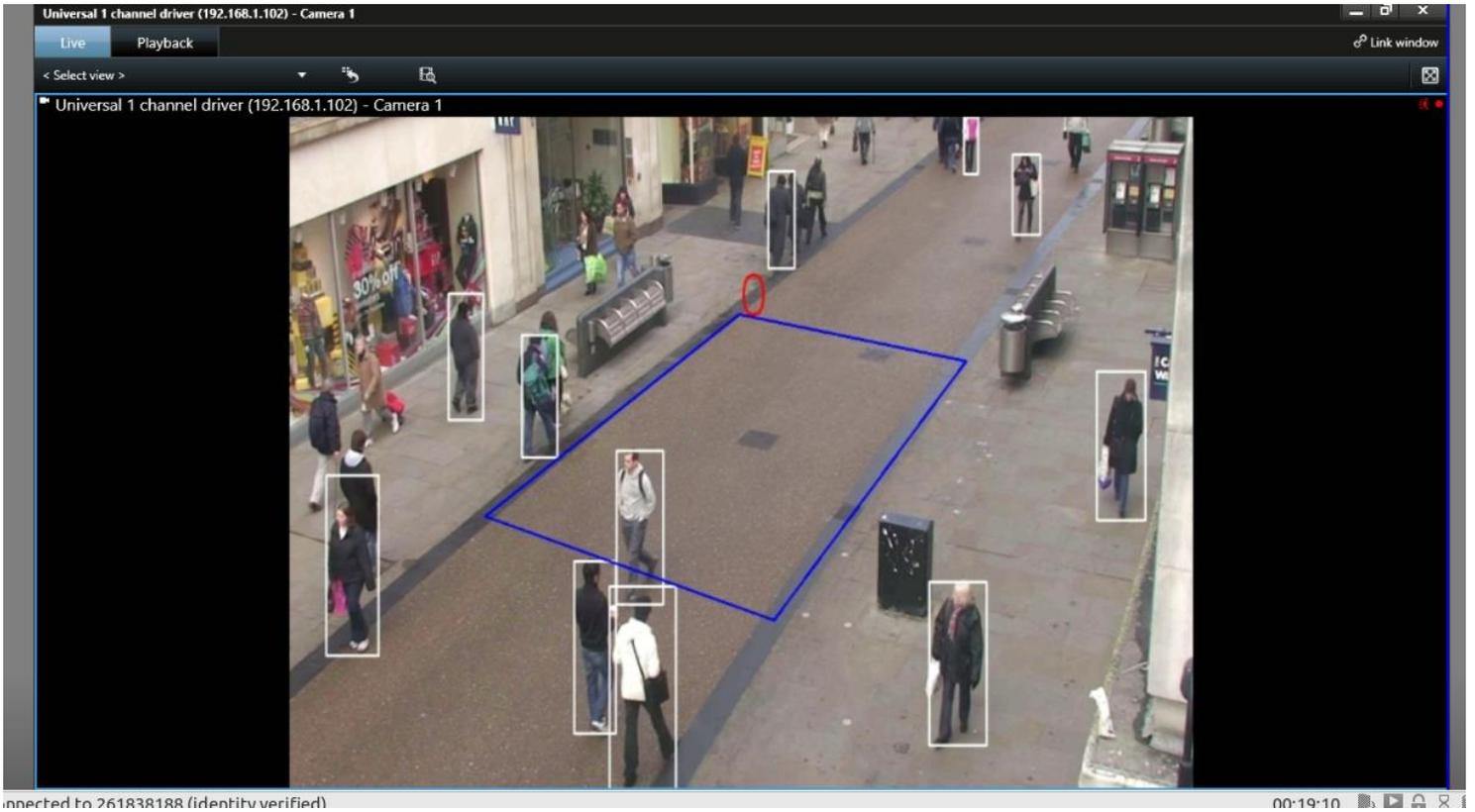
Click on Option to configure option



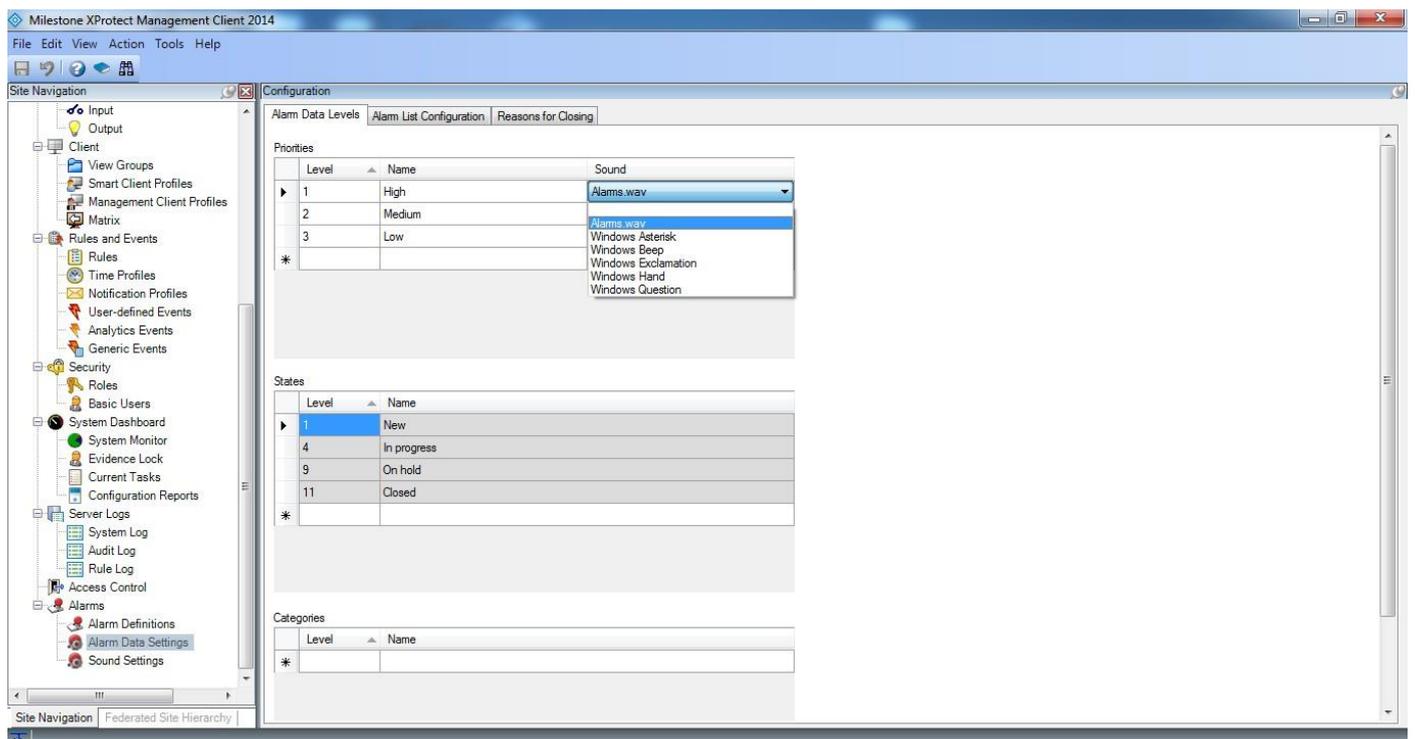
Goto Analytic events and check the Enabled box and click OK



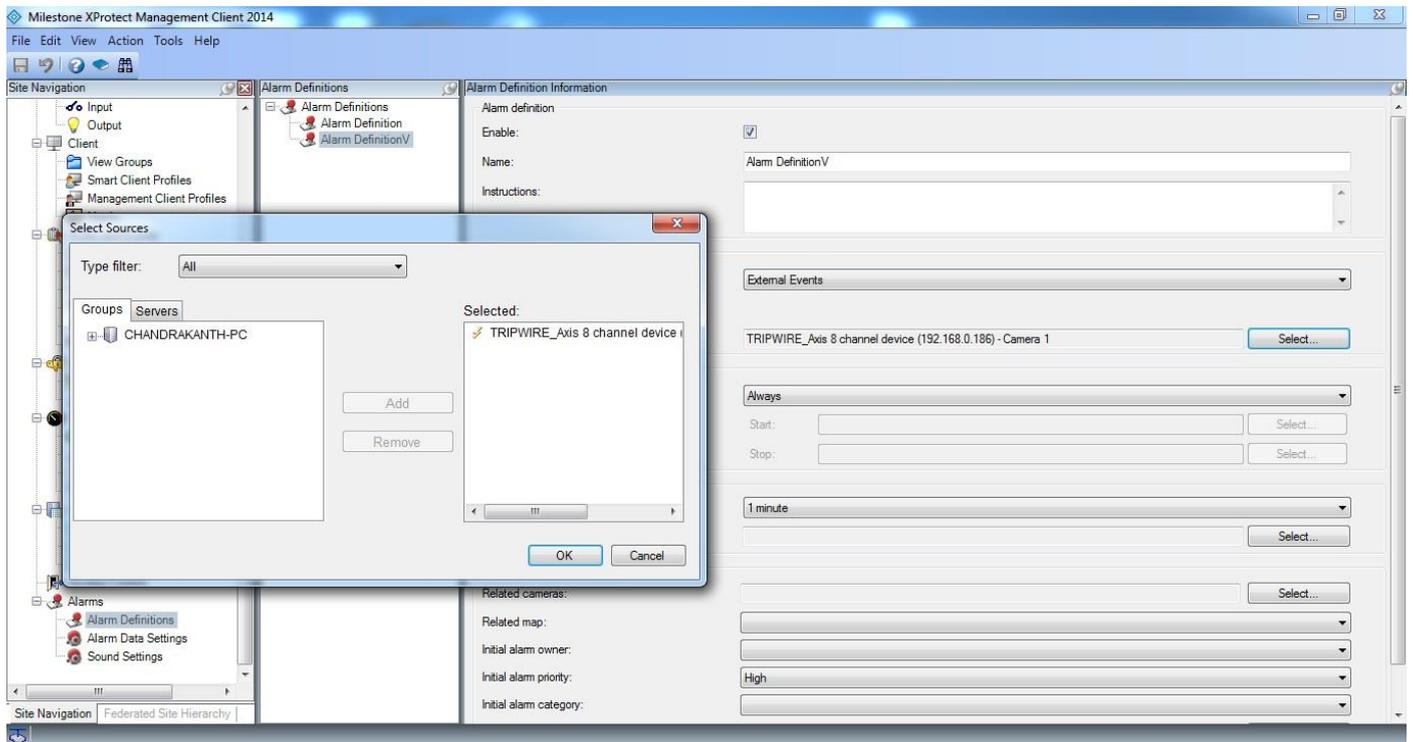
### Metadata output in Smart Client Live View



For creating sound on alarms, select Sound for Alarm Priorities in Alarm Data Levels under Alarms > Alarm Data Settings.



Then go to Alarms > Alarm Definitions, select External Events, and select the event name from the list of External Events, set time for alarm sound and alarm priority.



For more details on external event creation and setting rules, refer Milestone XProtect Administrator's Manual.

# THANK YOU