SEN1000i-S

Sound & Voice Analytics

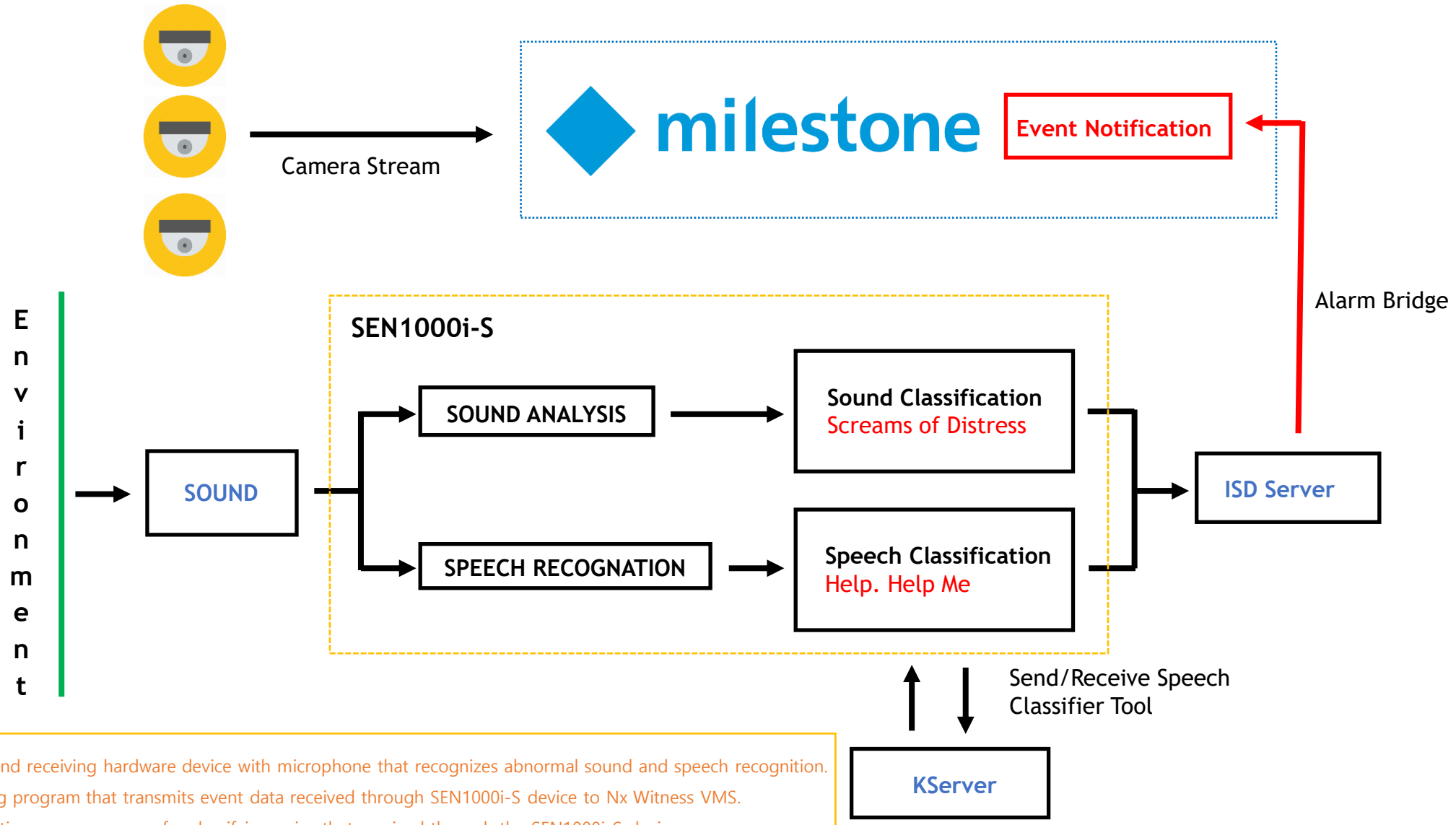
Installation Guide- For Milestone VMS

Content

1

Product Configuration and Description

1 **Integration Schematics:** Sound and Voice Analytics – Milestone VMS



SEN1000i-S: External sound receiving hardware device with microphone that recognizes abnormal sound and speech recognition.

ISD Server : Interworking program that transmits event data received through SEN1000i-S device to Nx Witness VMS.

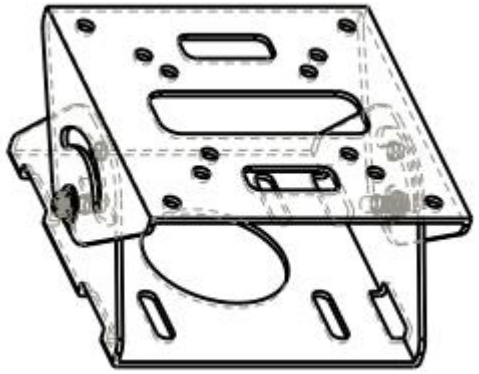
Kserver : A voice recognition server program for classifying voice that received through the SEN1000i-S device.

1 SEN1000i-S Voice recognition product configuration and description -1

◆ Product Components

SEN1000i-S Device

Lower cover



Angle adjusting/ Mount bracket

Etc

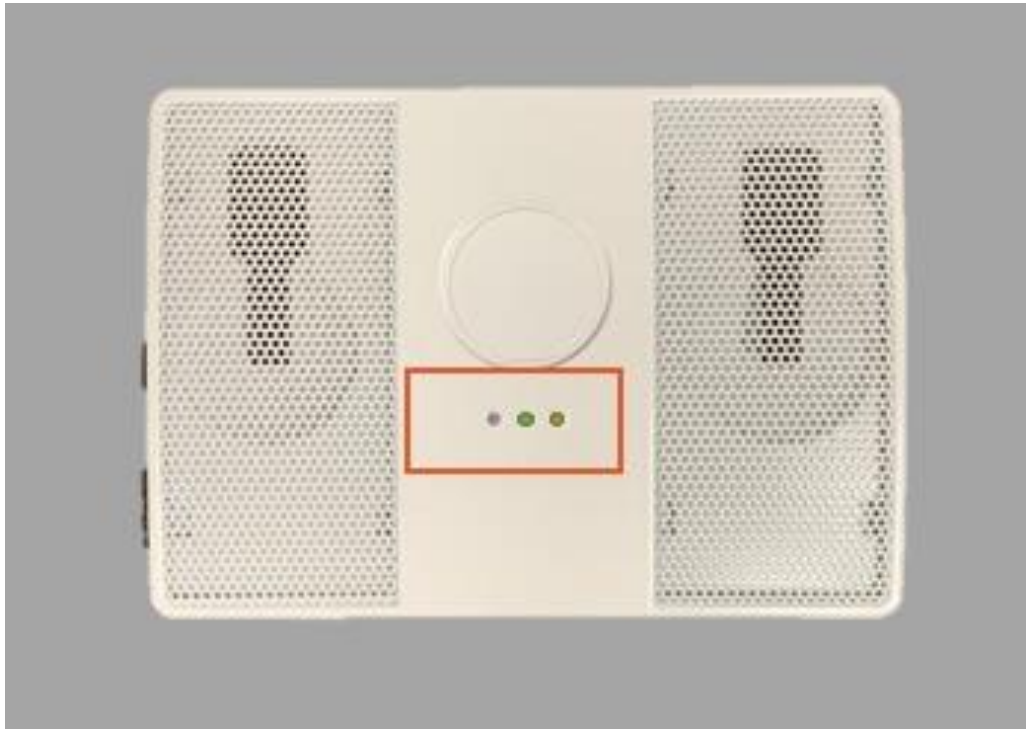
1 SEN-1000-S Voice recognition product configuration and description -2

◆ Equipment Description

Front view	Back	Bottom
		
① Microphone for detecting abnormal sound ② LED for status indication (blue, green, red) ③ Waterproof flexible Connector	VESA Mount hole	① 5V IN Power Terminal ② RJ45 terminal

1 SEN1000i-S Voice recognition product configuration and description -3

◆ Status LED Description

Explanation	Detailed image
"Turned on" until the device reboot (takes 3-5min) "Flashes" when sound source is detected (left) "Flashes" once per second during normal operation of device (center) Power "Always on" after system boot (right) **※ Each LED direction is based on the front of the equipment.**	

Pre-installation Requirement

Step 1. Milestone-related Program Installation

Step 2. Adding Camera to Milestone

Step 3. Neurolytics plugin Settings in MIP

Step 4. ISD Server Settings

Step 5. Adding MIP driver to Milestone

Step 6. Adding Metadata (Camera to MIP driver)

Step 7. SA Event and Alarm Settings

Step 8. CCTV Footage View grid Settings

The detailed Milestone VMS user manual found in the following link

https://doc.milestonesys.com/latest/en-US/portal/htm/chapter-page-sc-user-manual.htm?TocPath=XProtect%20Smart%20Client%7CXProtect%20Smart%20Client%20user%20manual%7C____0

https://doc.milestonesys.com/sc/pdf/2020r3/en-US/MilestoneXProtectSmartClient_UserManual_en-US.pdf

Milestone – SA Plugin System; Installer & License files

1) Milestone installer

2) Plugin File

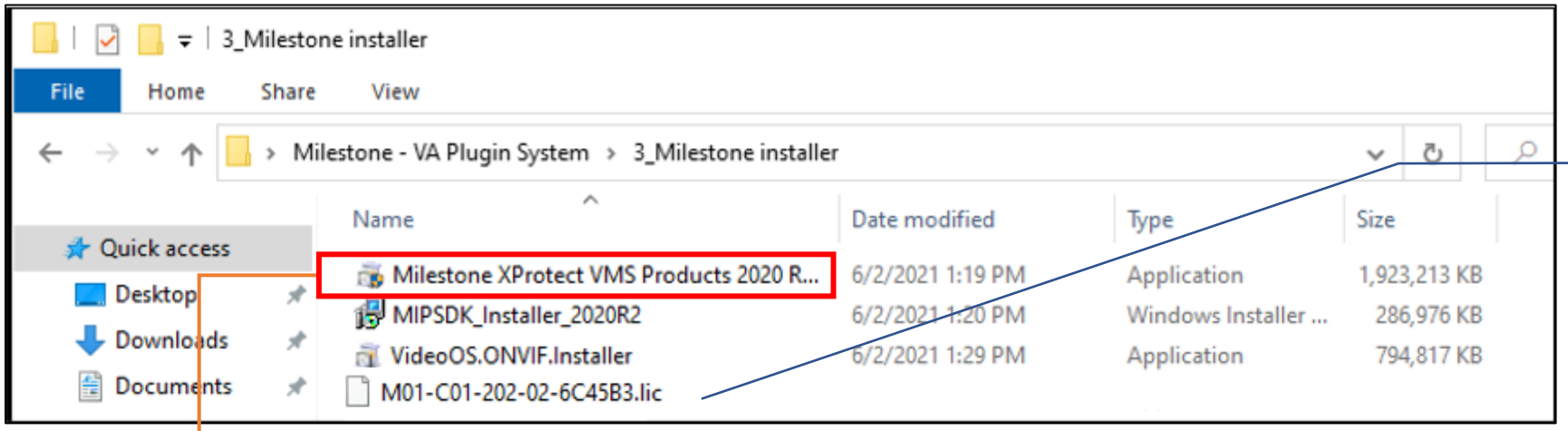
3) SEN-1000i-S installer files Milestone VMS

4) SEN-1000i-S Speech Recognition + Milestone

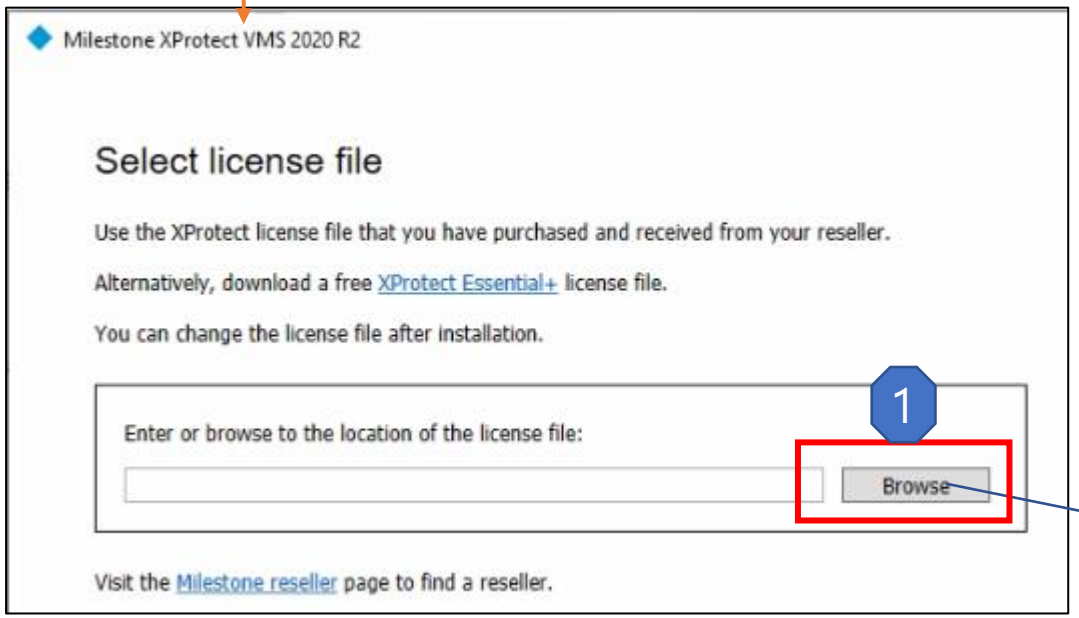
Make sure that all installer and relevant license files are received before starting the installation process

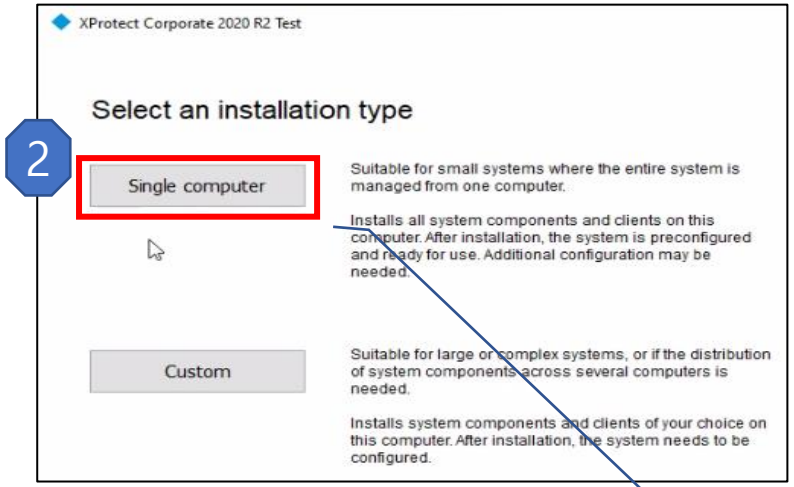
Download and install Visual C++ Redistributable Packages
https://www.microsoft.com/en-us/download/confirmation.aspx?id=14632 (2010)
https://www.microsoft.com/en-us/download/confirmation.aspx?id=48145 (2015)

Step 1. Milestone-related Program Installation



Milestone License

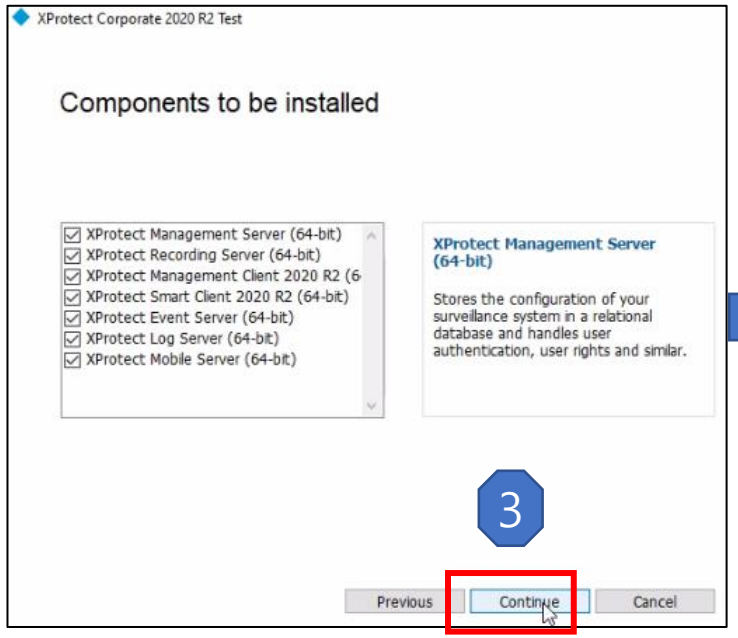


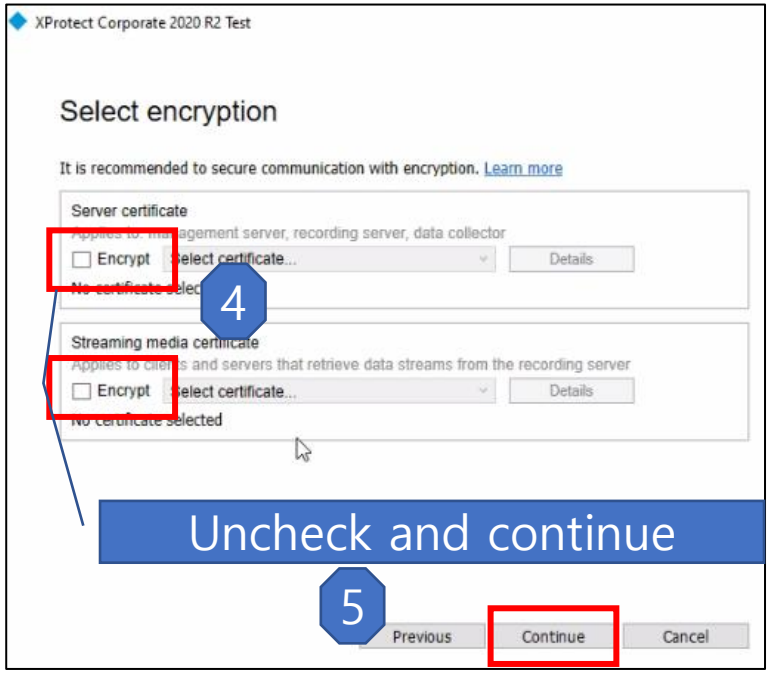


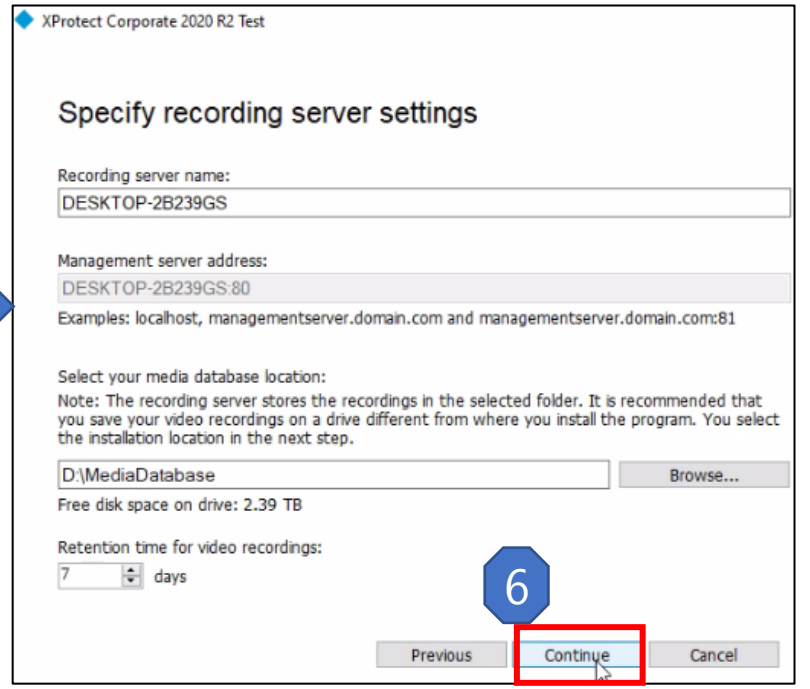
Choose Single computer

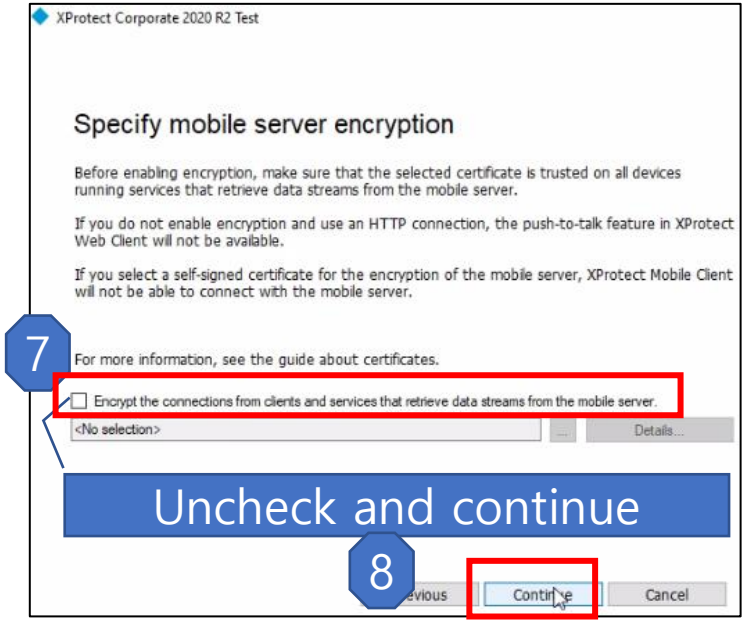
Locate Milestone License

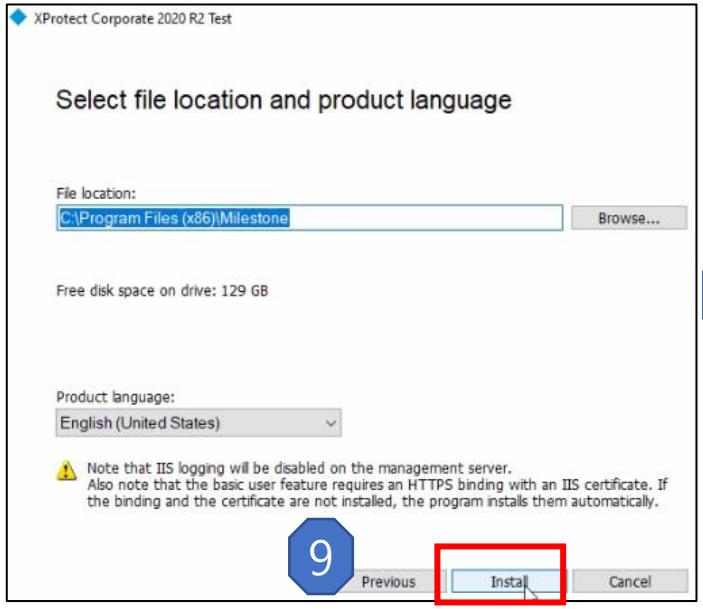
Step 1. Milestone-related Program Installation











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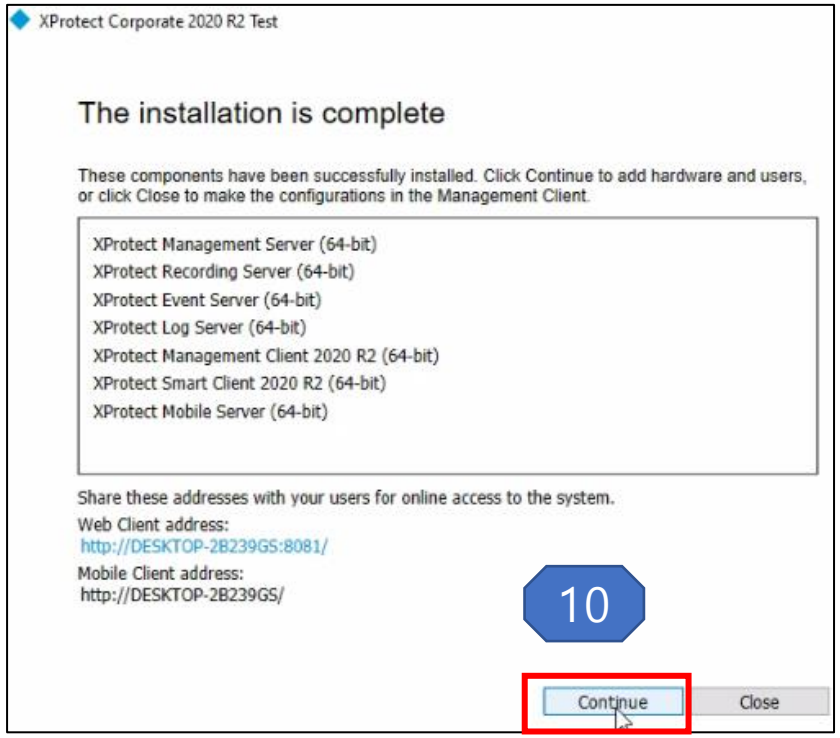
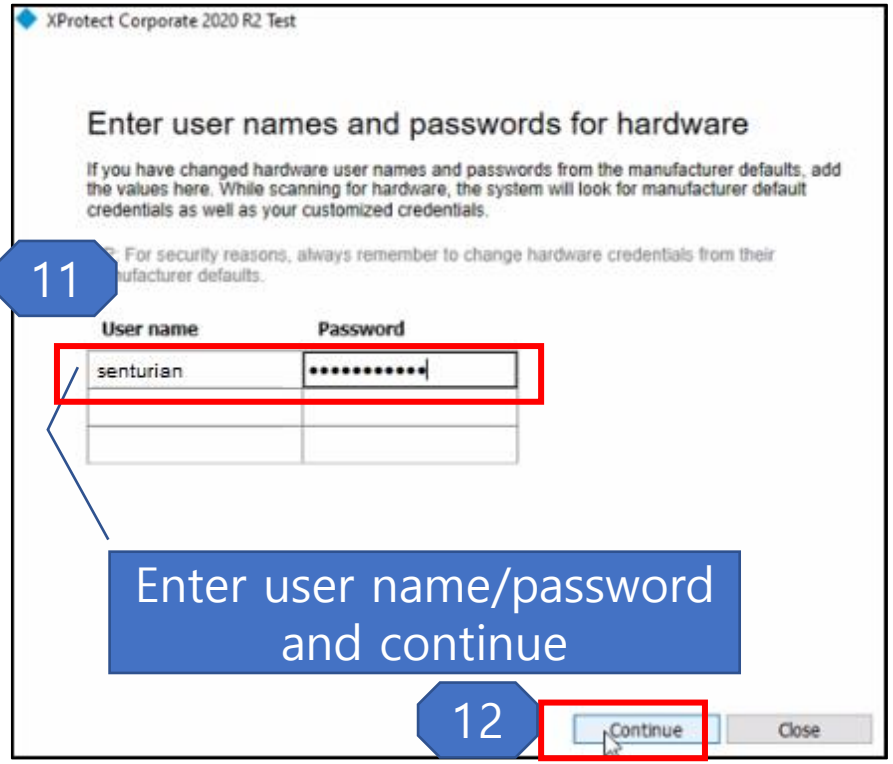
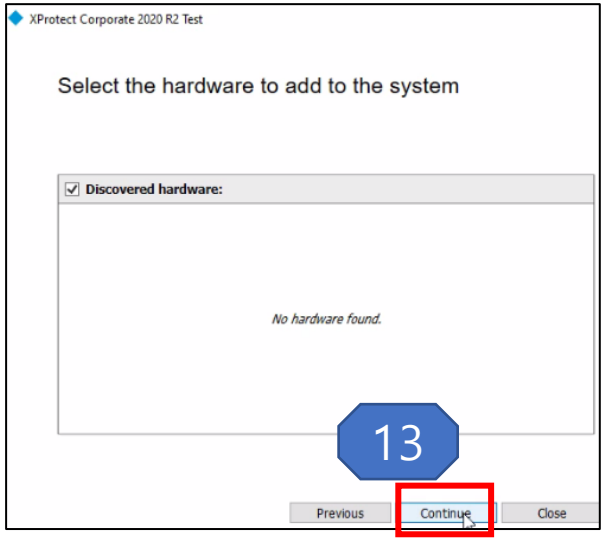
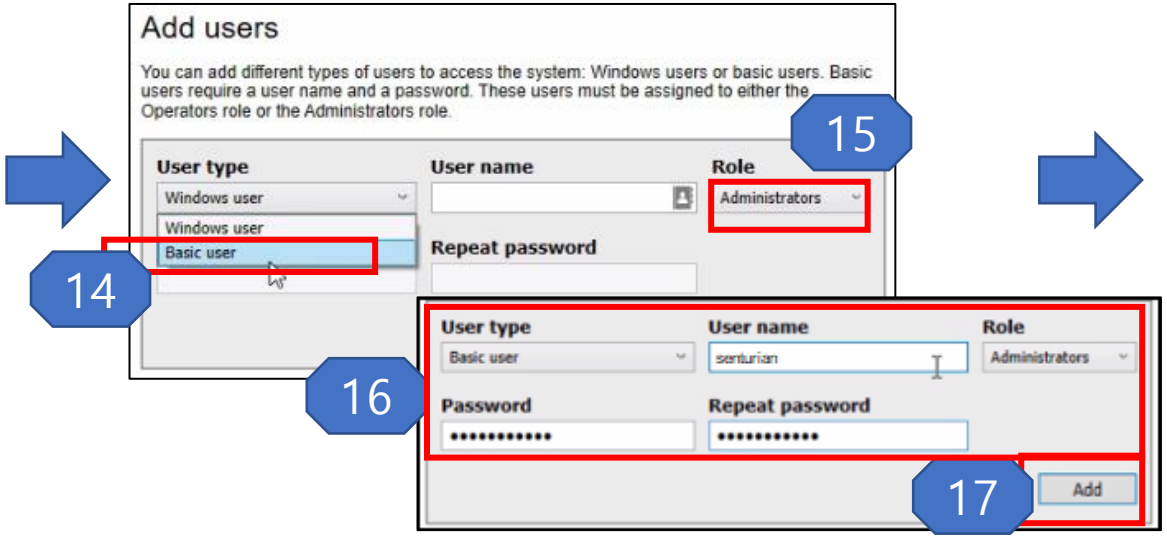
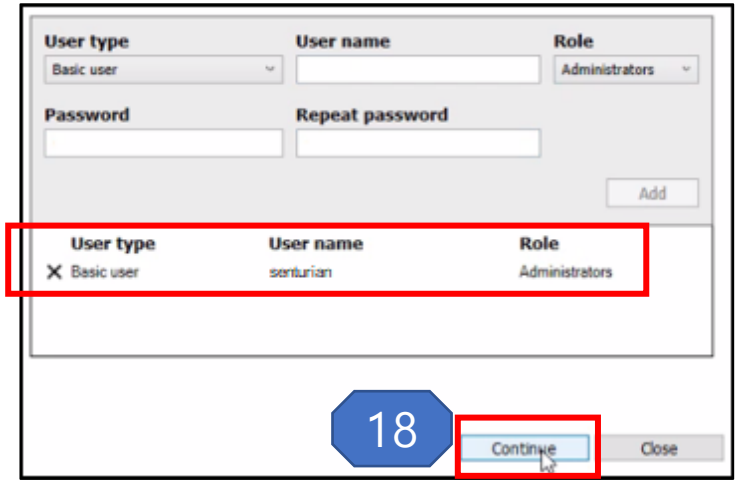




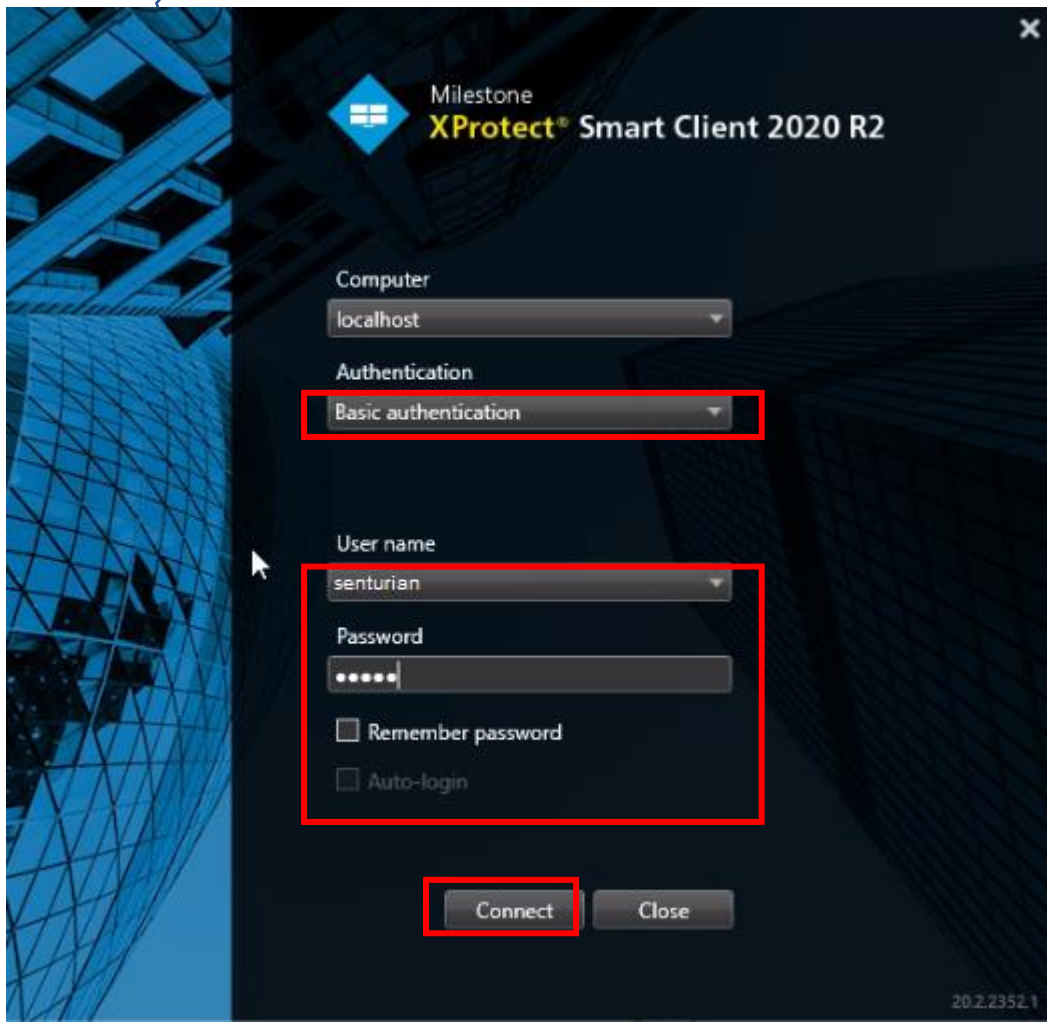




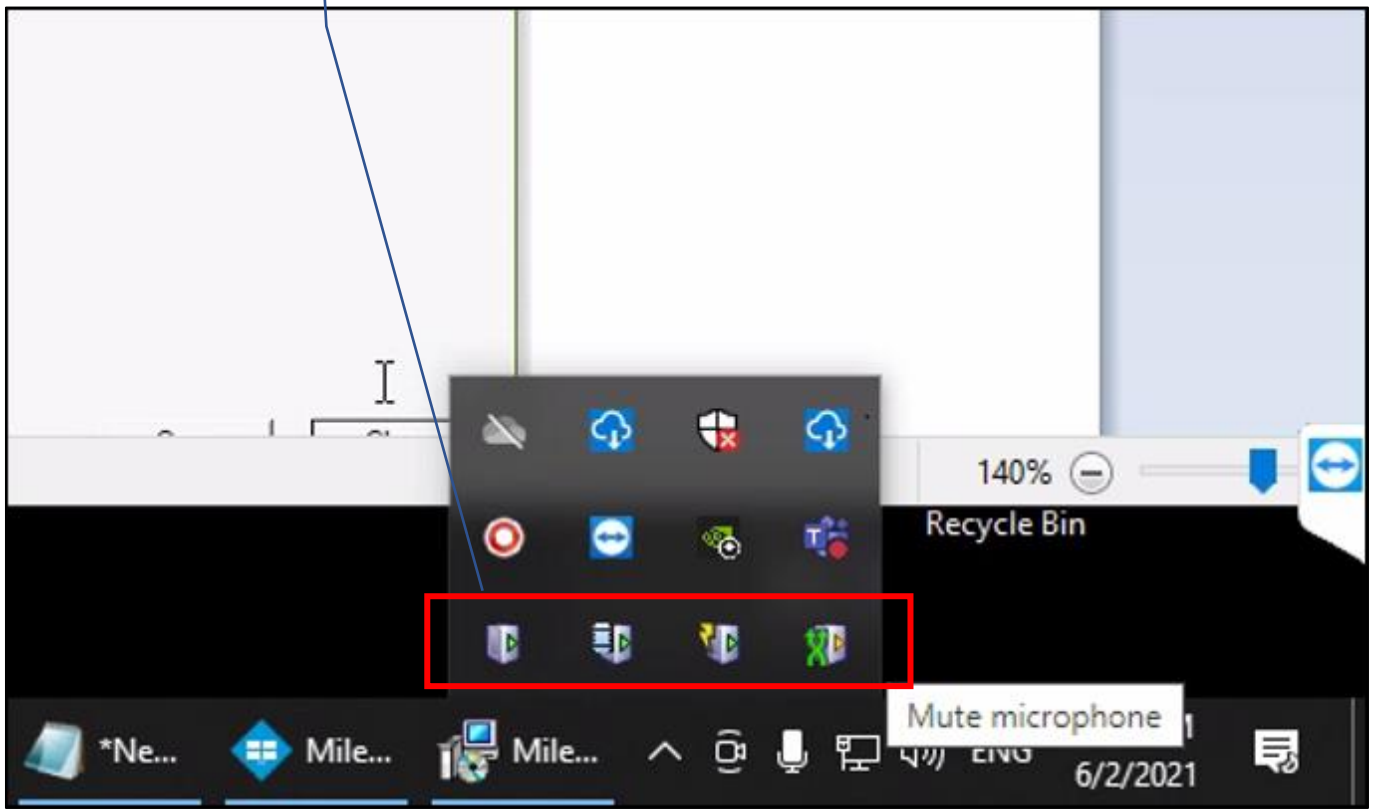


Step 1. Milestone-related Program Installation

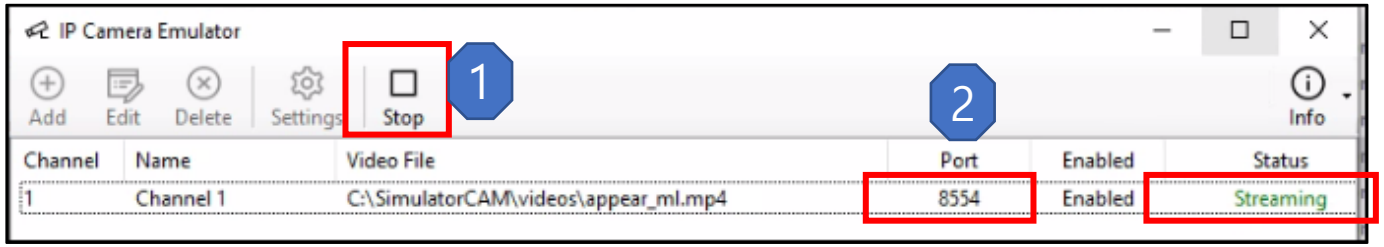
Run the "Smart client" & connect

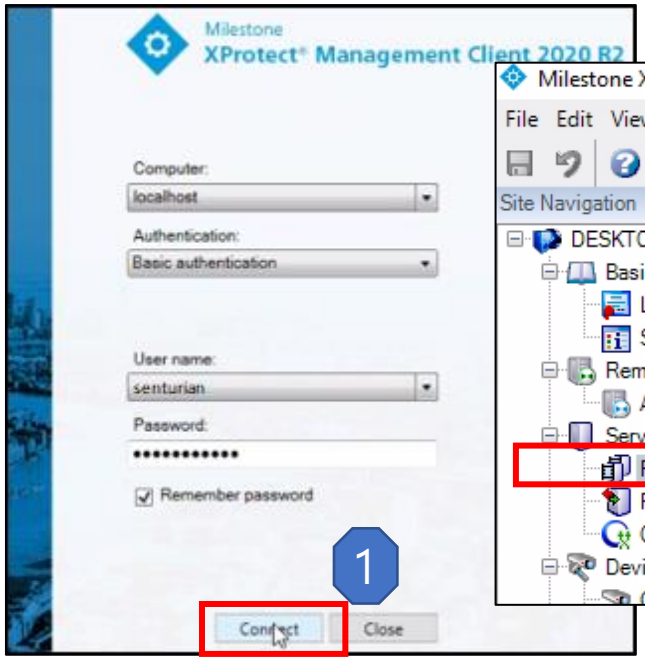


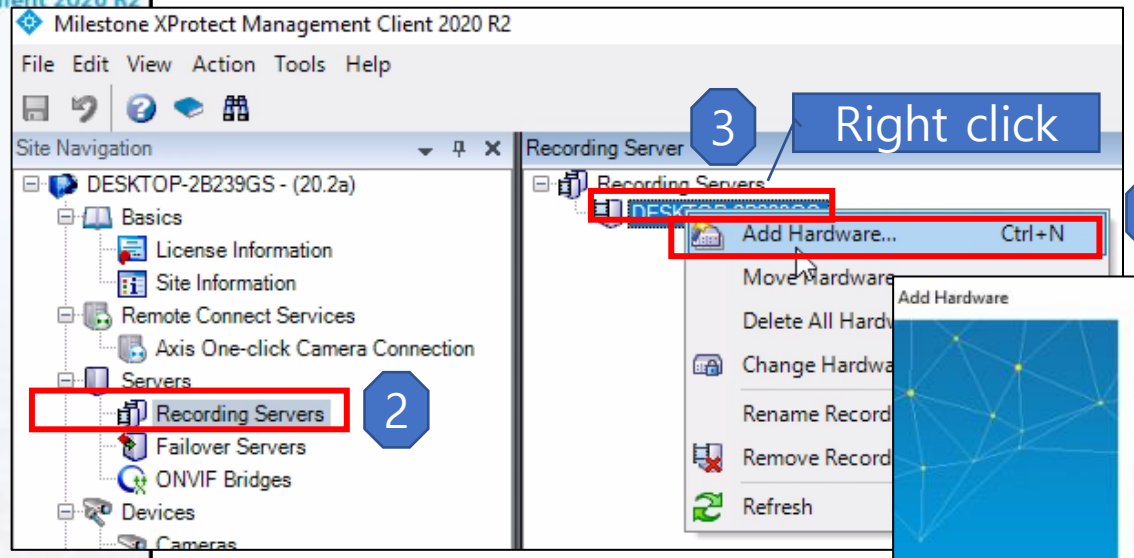
Make sure all the Milestone sever programs are running in the background.
- It can be verified by "desktop tray" icon as shown below.

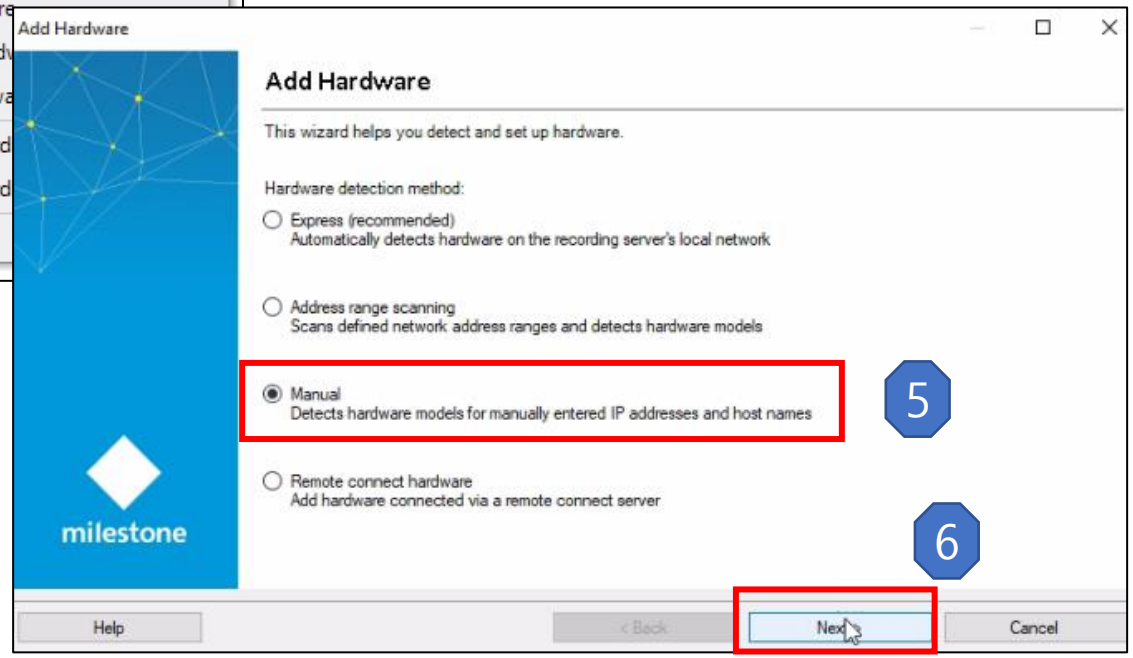


Step 2. Adding Camera to Milestone









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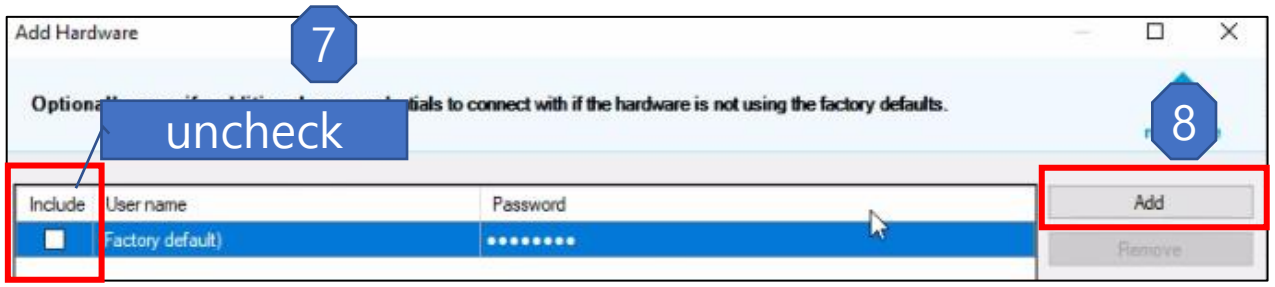

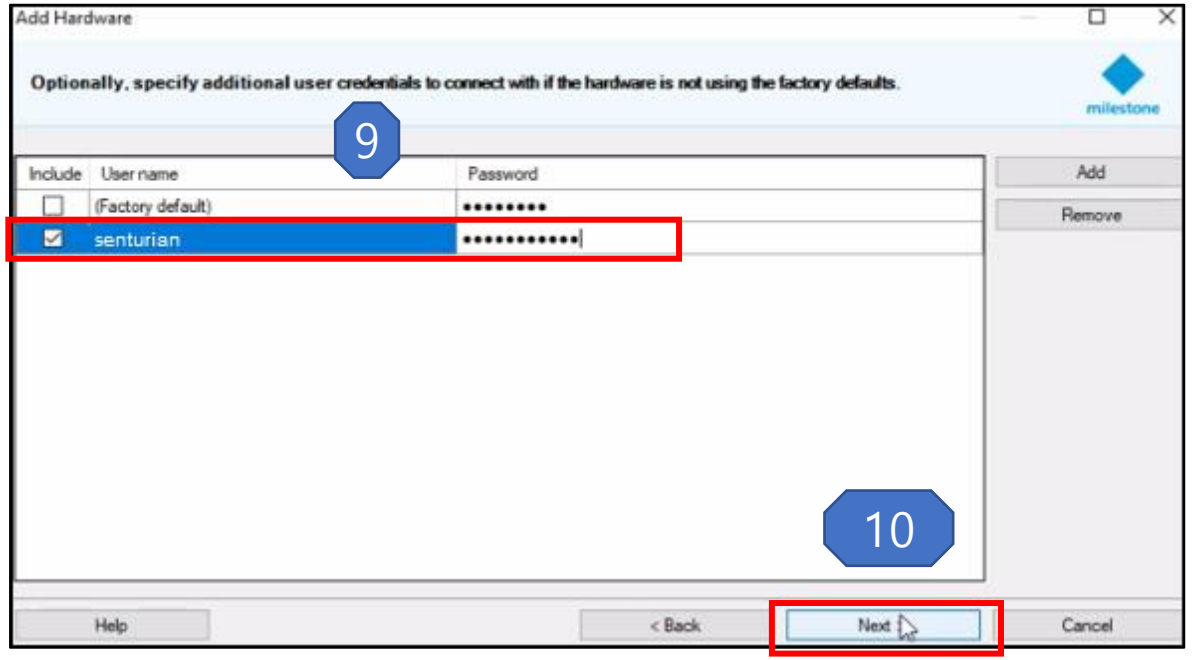

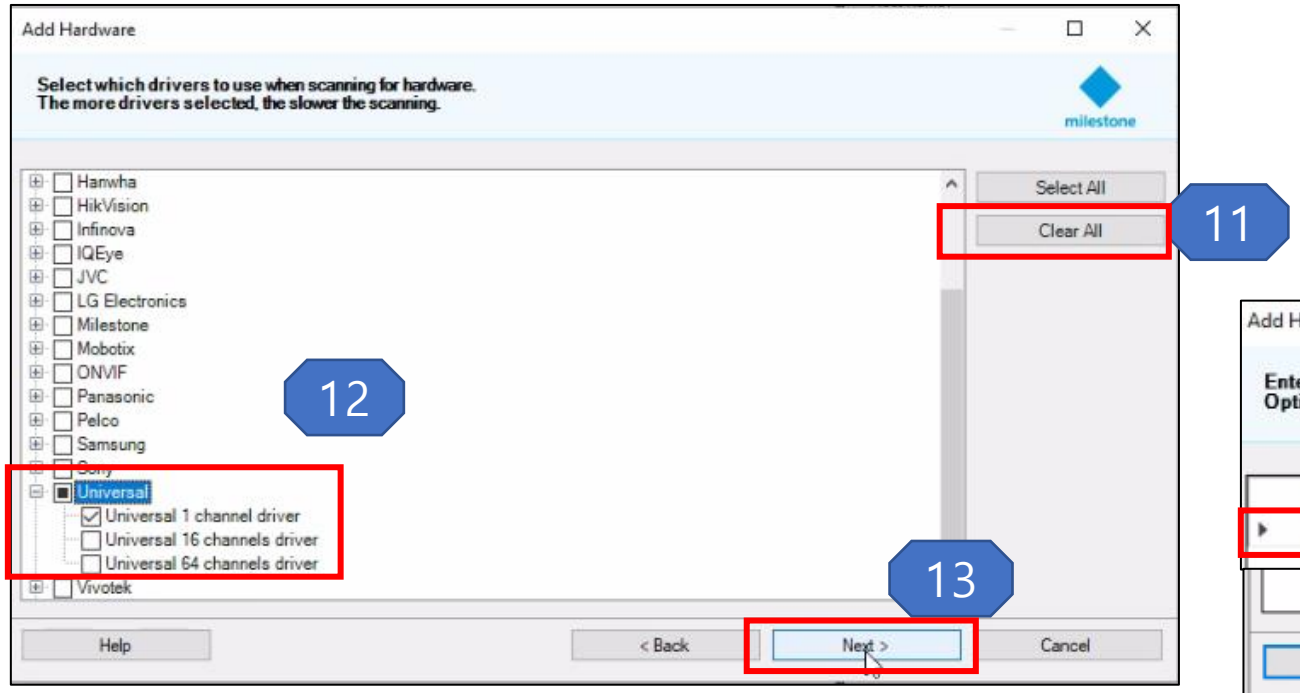

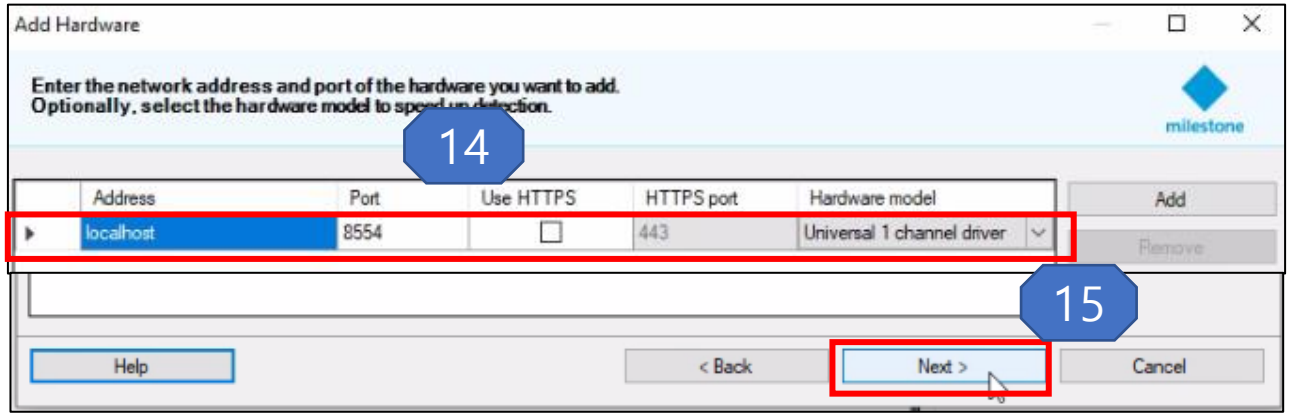

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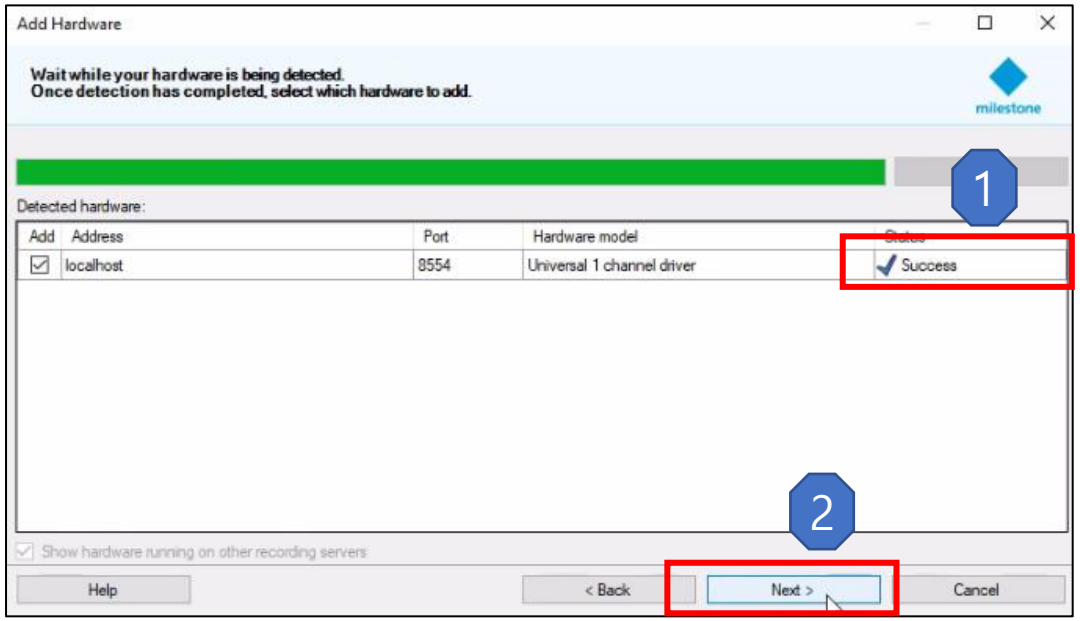
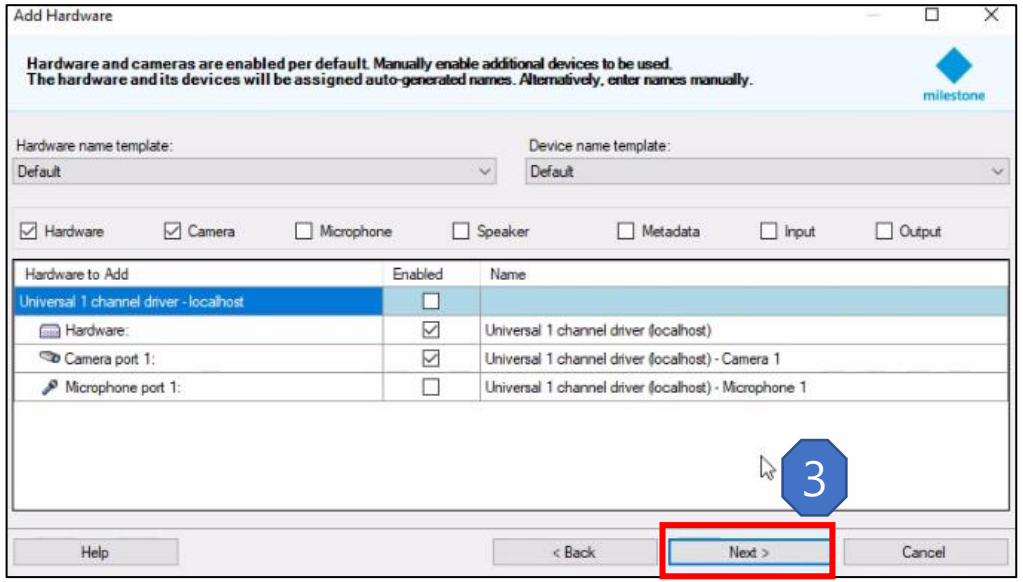
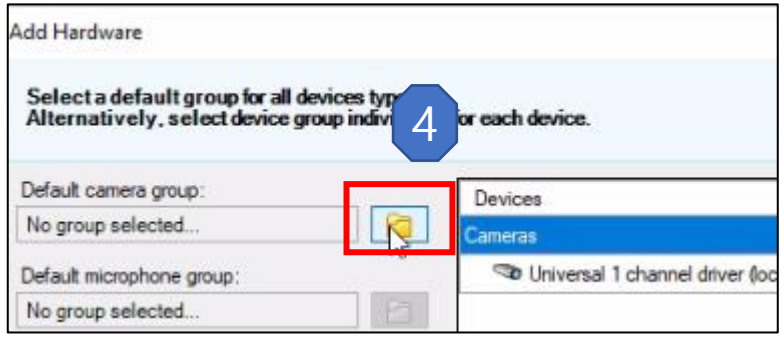
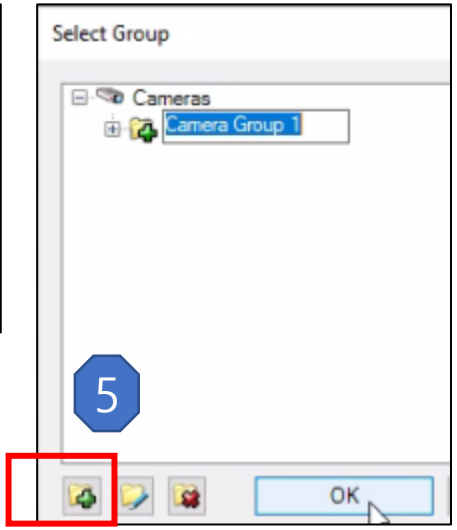
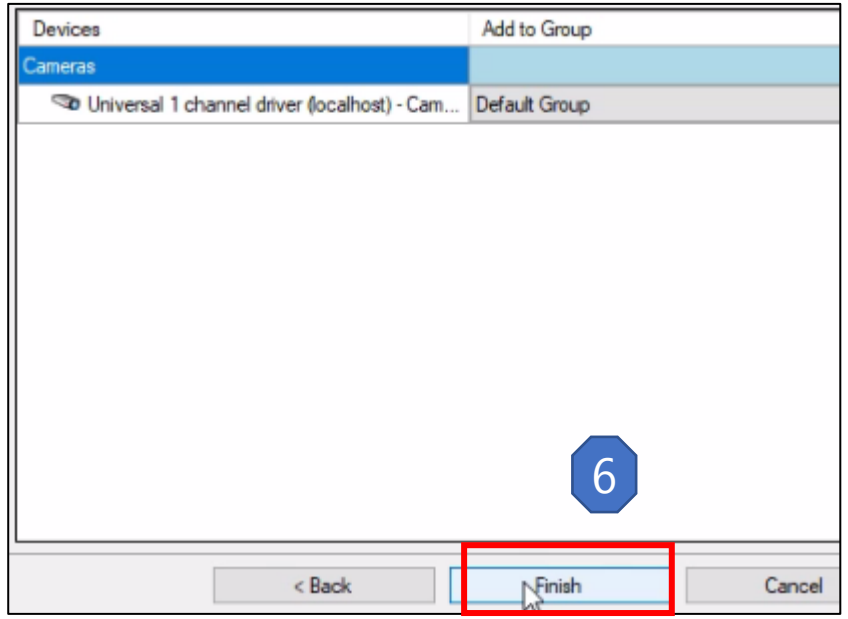


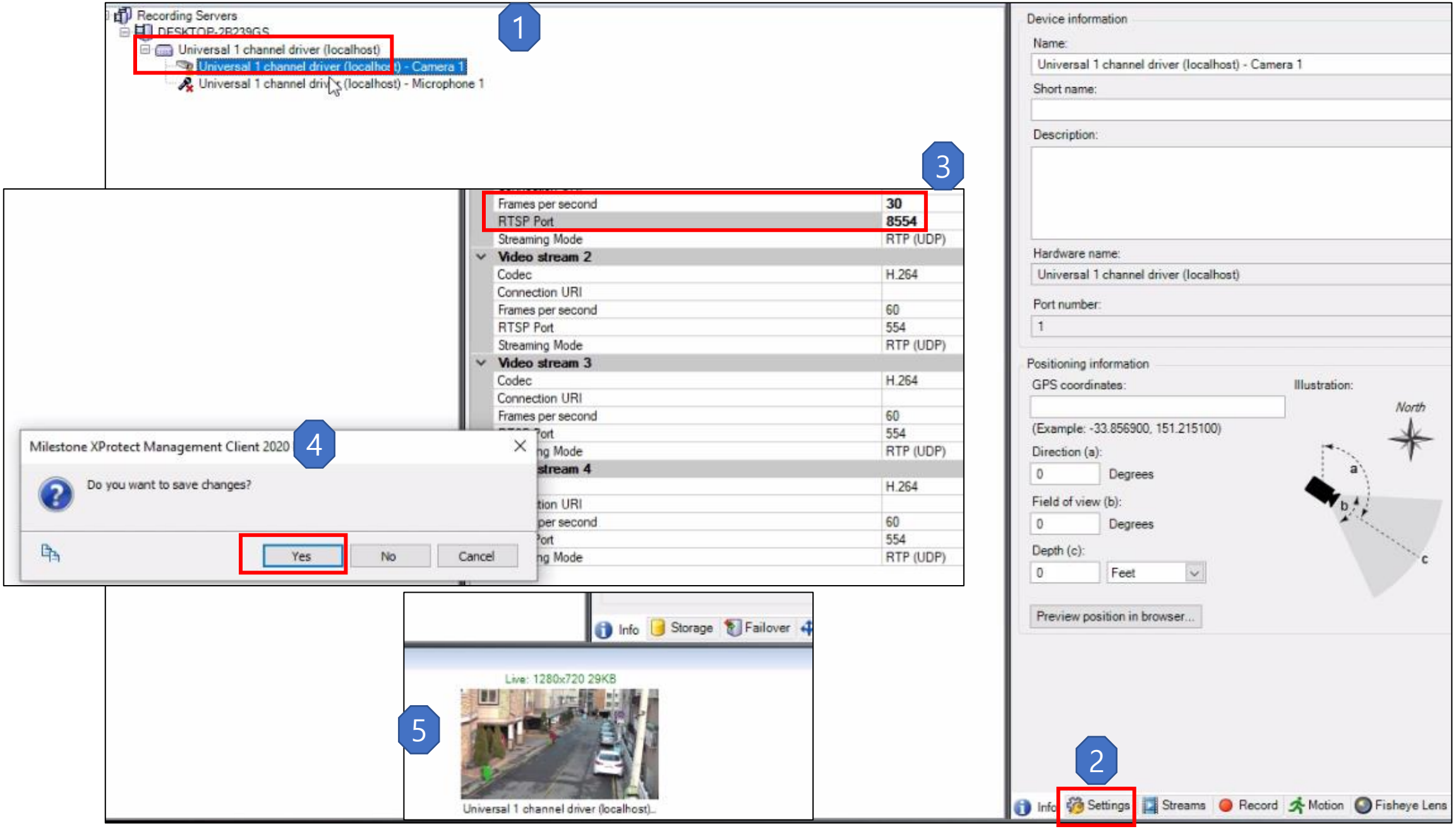




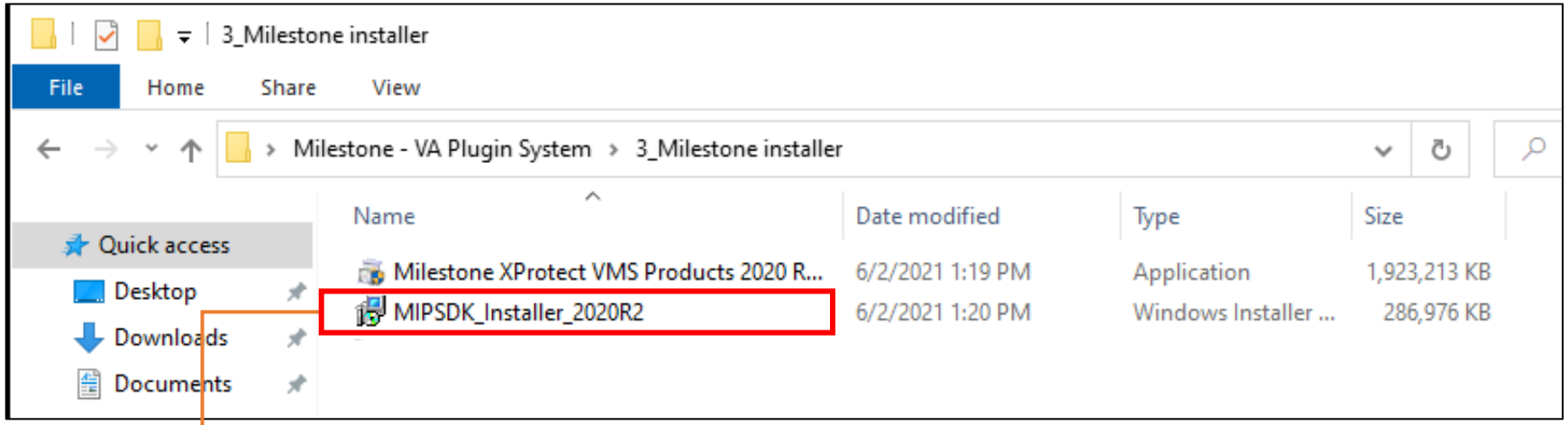


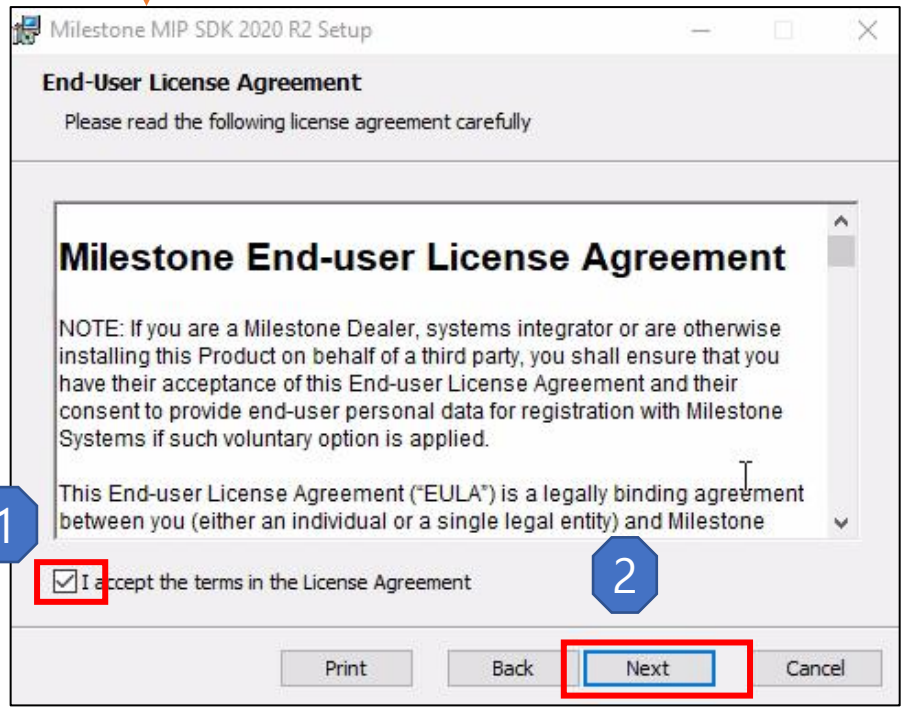


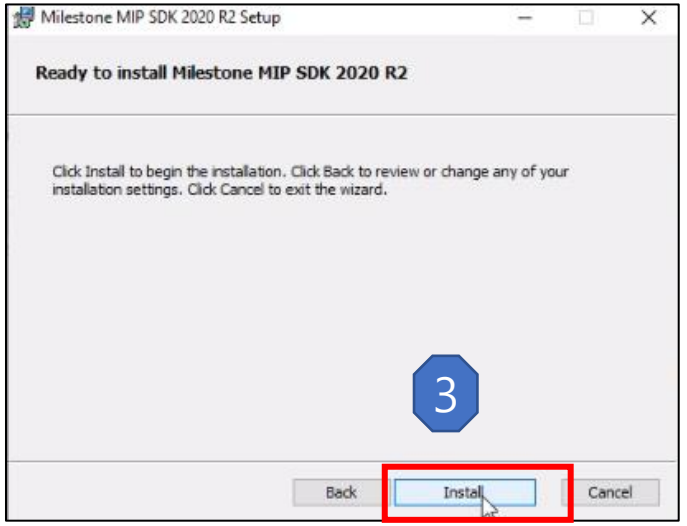
Step 2. Adding Camera to Milestone

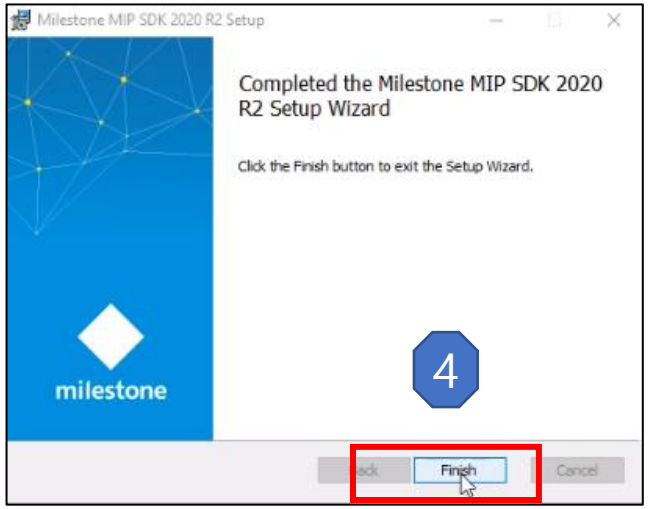


Step 3. Neurolytics plugin Settings in MIP



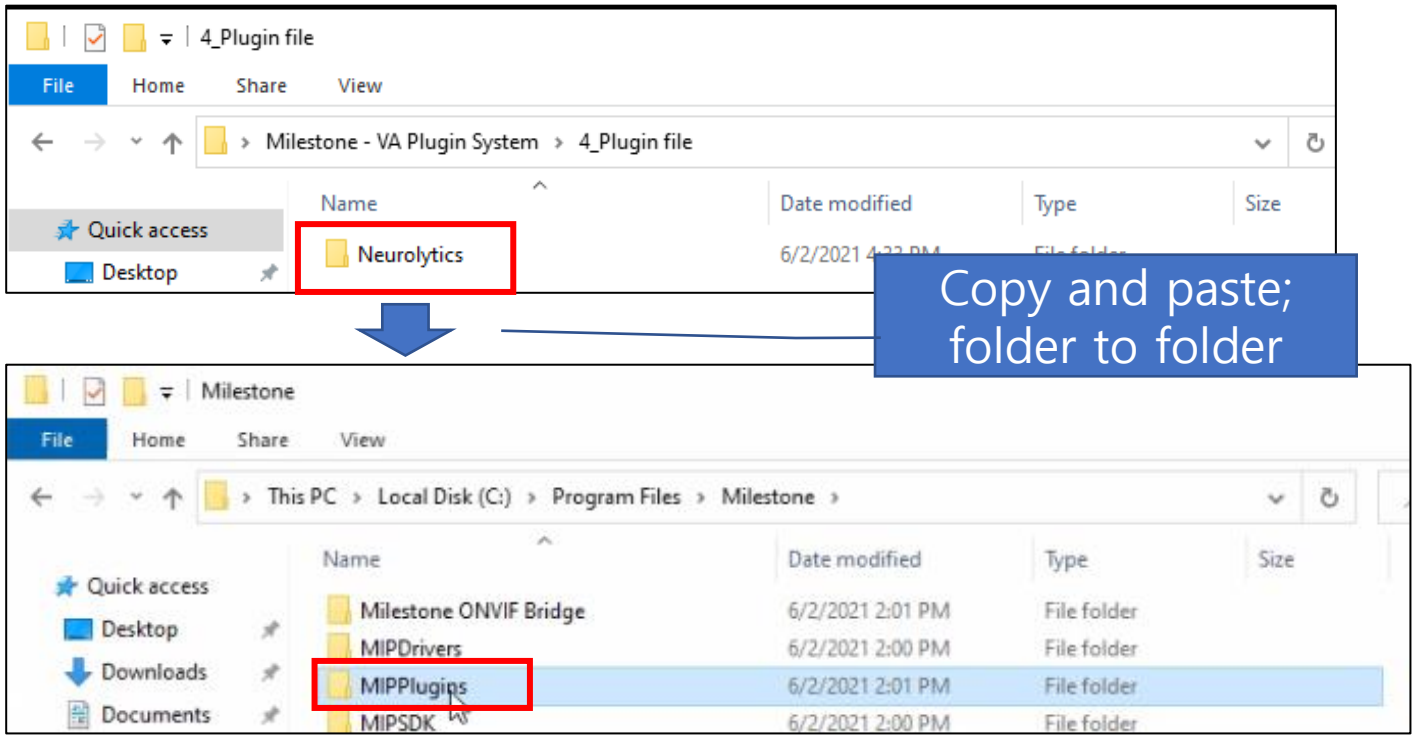




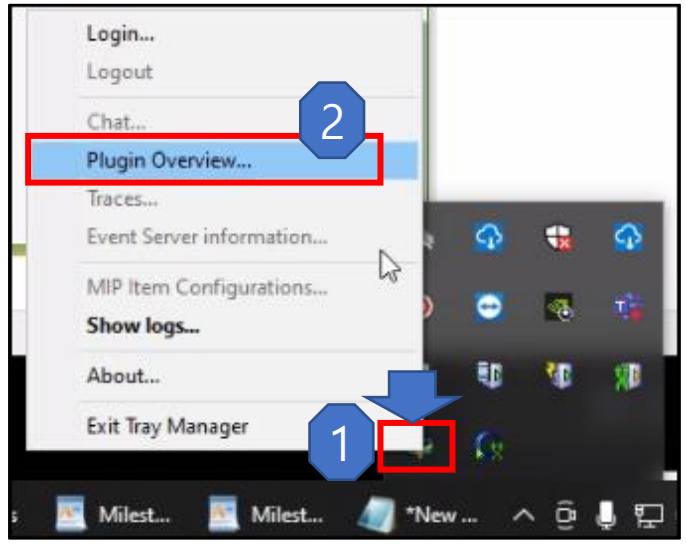


Step 3. Neurolytics plugin Settings in MIP

1. Run **MIPSDK_Installer** provided by Milestone.
2. Copy plugin folder named **“Neurolytics”** and paste the folder inside the path **C:\Program Files\Milestone\MIPPlugins**



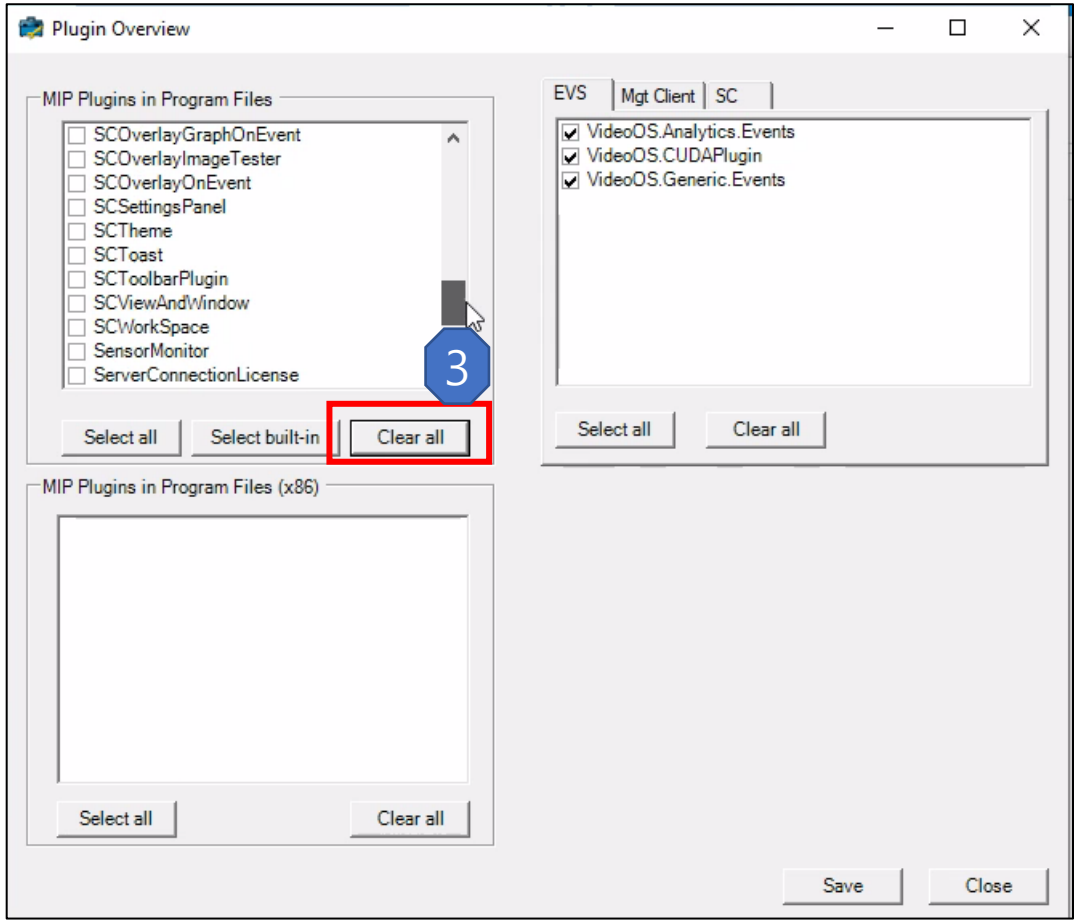
3. Enable **Neurolytics** plugin by opening **“Plugin Overview”** and choosing **Neurolytics option** in **“MIP SDK Tray Manager”** program as shown in the picture:

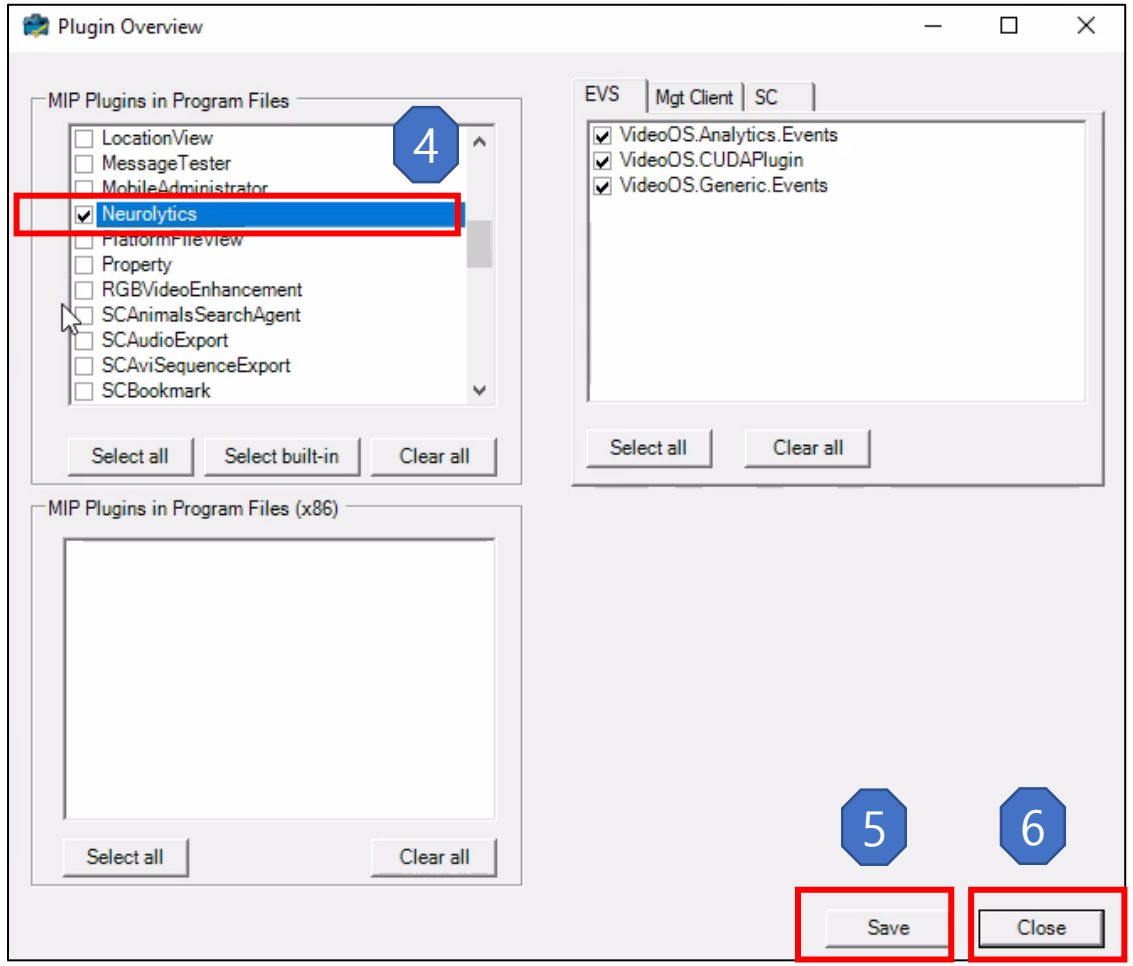


Step 3. Neurolytics plugin Settings in MIP

4. Unselect all plugin files by “**Clear all**”

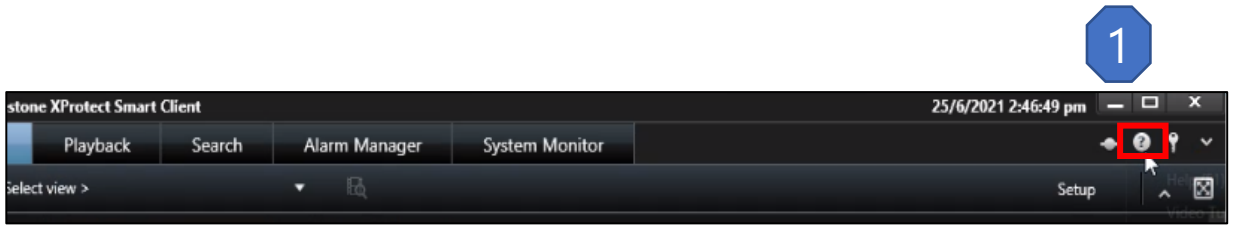
5. Enable “**Neurolytics”** plugins by opening **“Plugin Overview”** and select in **Plugin Overview Manager** as shown in the picture. Press “Save”.

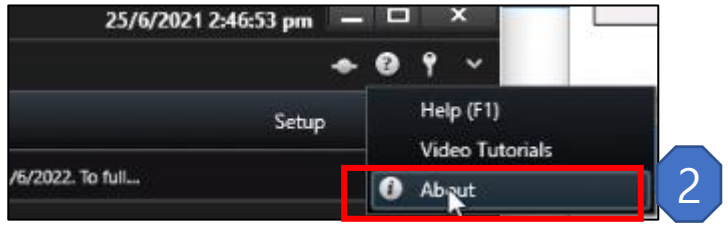


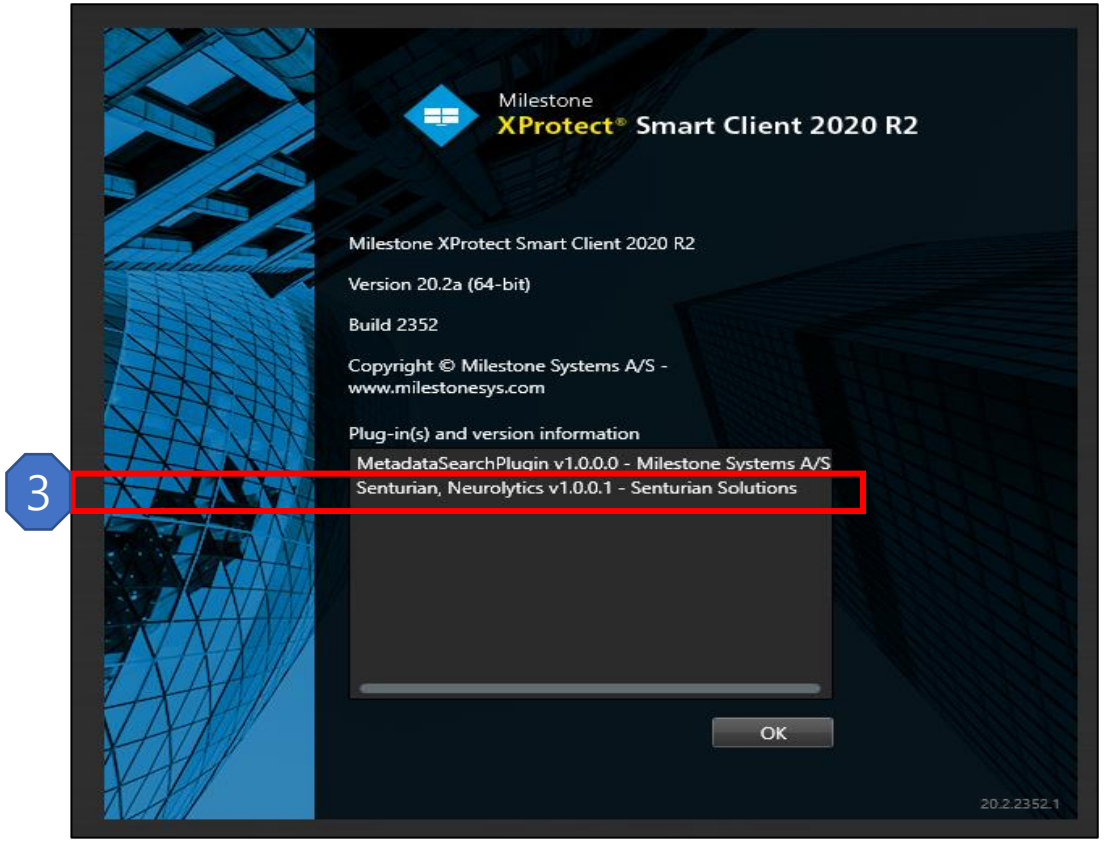


Step 3. Neurolytics plugin Settings in MIP

- To verify the **Neurolytics** plugin that installed was successful or not, open XProtect Smart Client program, and go to "**About**" option and click on.
- It was successful if a pop-up window show as below.







Step 4. ISD Server Settings

◆ **ISDserver is an interworking program that transmits events to Milestone VMS.**

Program image

A. ISDserver.exe Connection

1) Execute ISDserver.exe in the ISD folder.

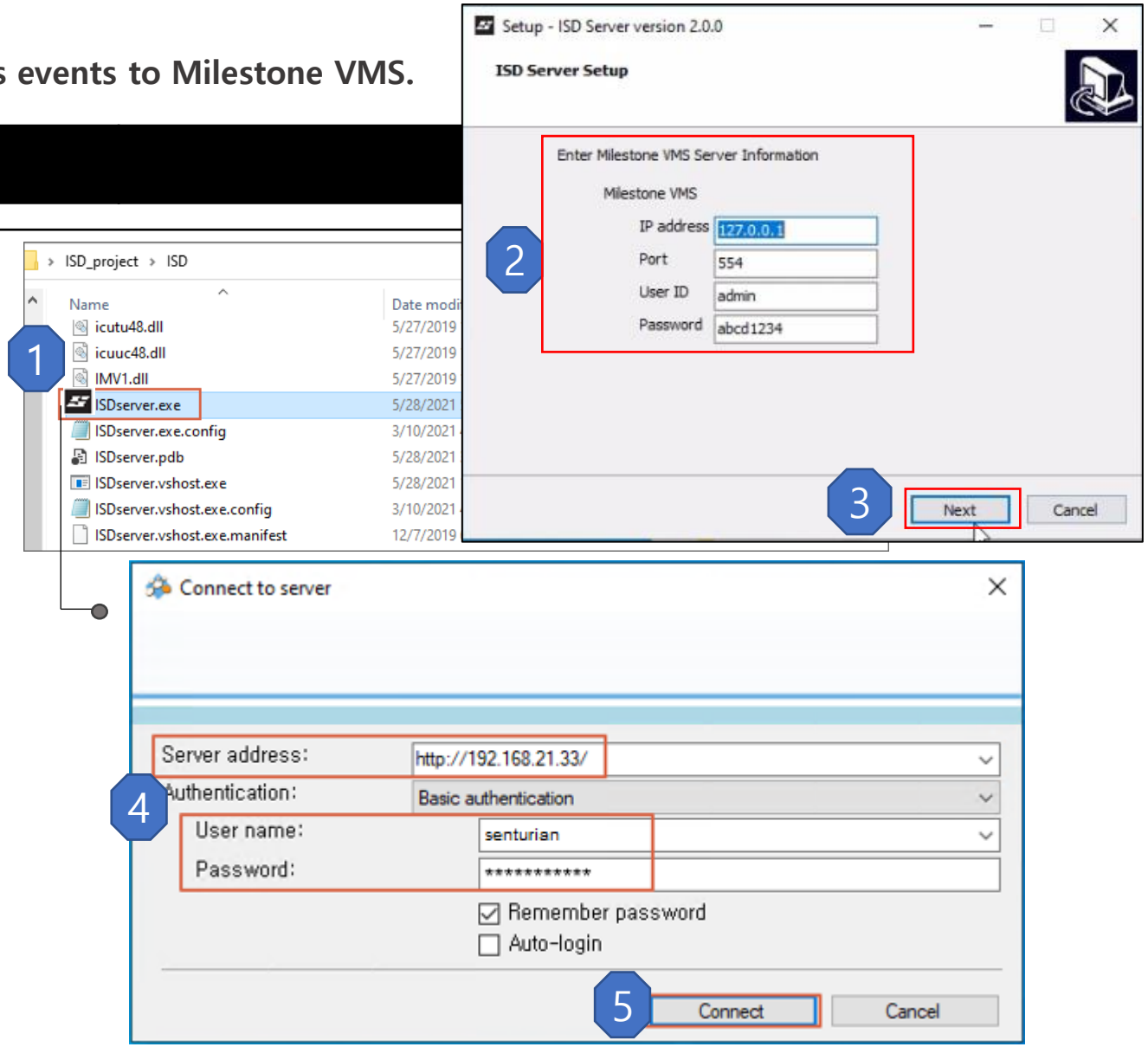
2) Milestone VMS is installed in the Server address of the "Connect to server" screen. Enter the IP address of the server.

※ When using Milestone and ISD together on a local server, Enter http://localhost/

4) Enter your Milestone account information in User Name and Password.

※ Milestone related information is changed according to the setting value when installing Milestone.

5) Click "Connect" button to connect to ISDserver.



Step 4. ISD Server Settings

◆ **ISDserver is an interworking program that transmits events to Milestone VMS.**

Program image	Explanation

B. ISDserver.exe settings

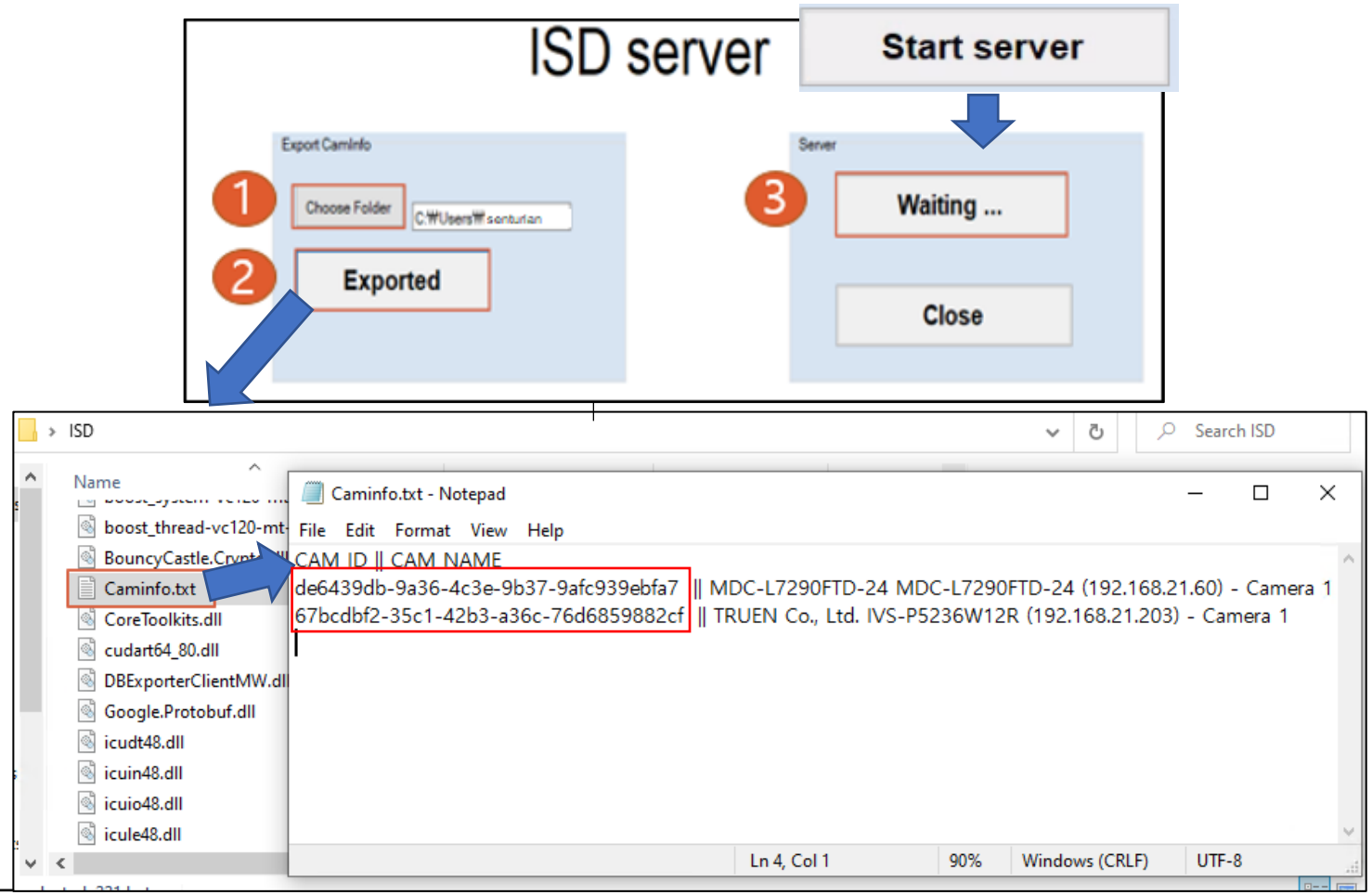
1) Click "Choose Folder" to select a folder to extract camera information from.

2) Click "Export" button to extract information of all cameras connected to Milestone VMS.

※ After executing the ISDserver program, "Caminfo.txt" file is created in the selected folder. Information of all cameras connected to Milestone VMS is entered in the file.

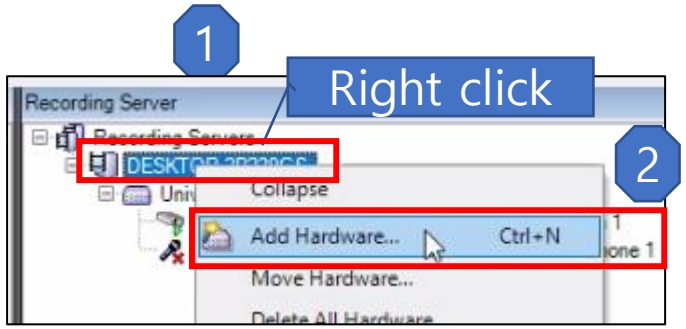
3) Click the "Start server" button to connect to the server.

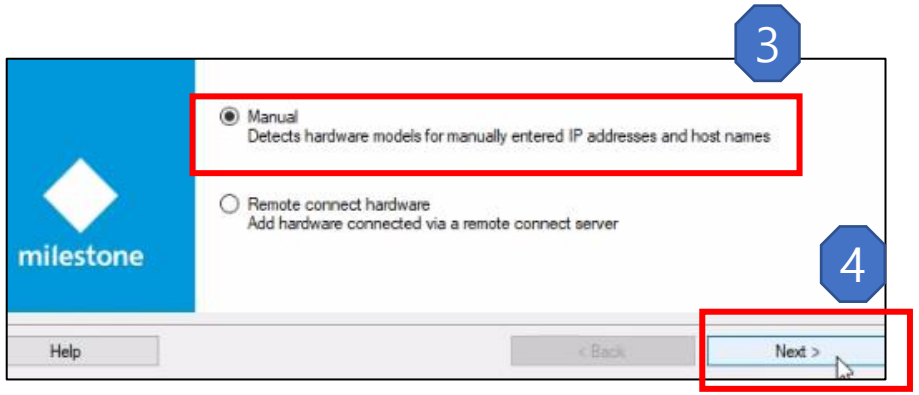
※ After clicking the button, "Waiting... " status and ready to link.)

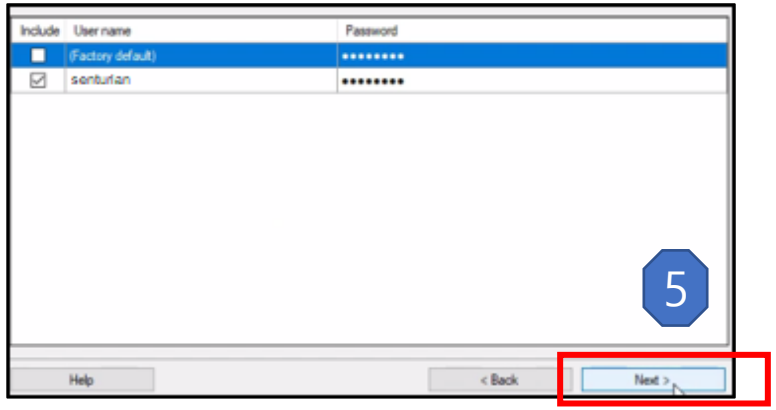


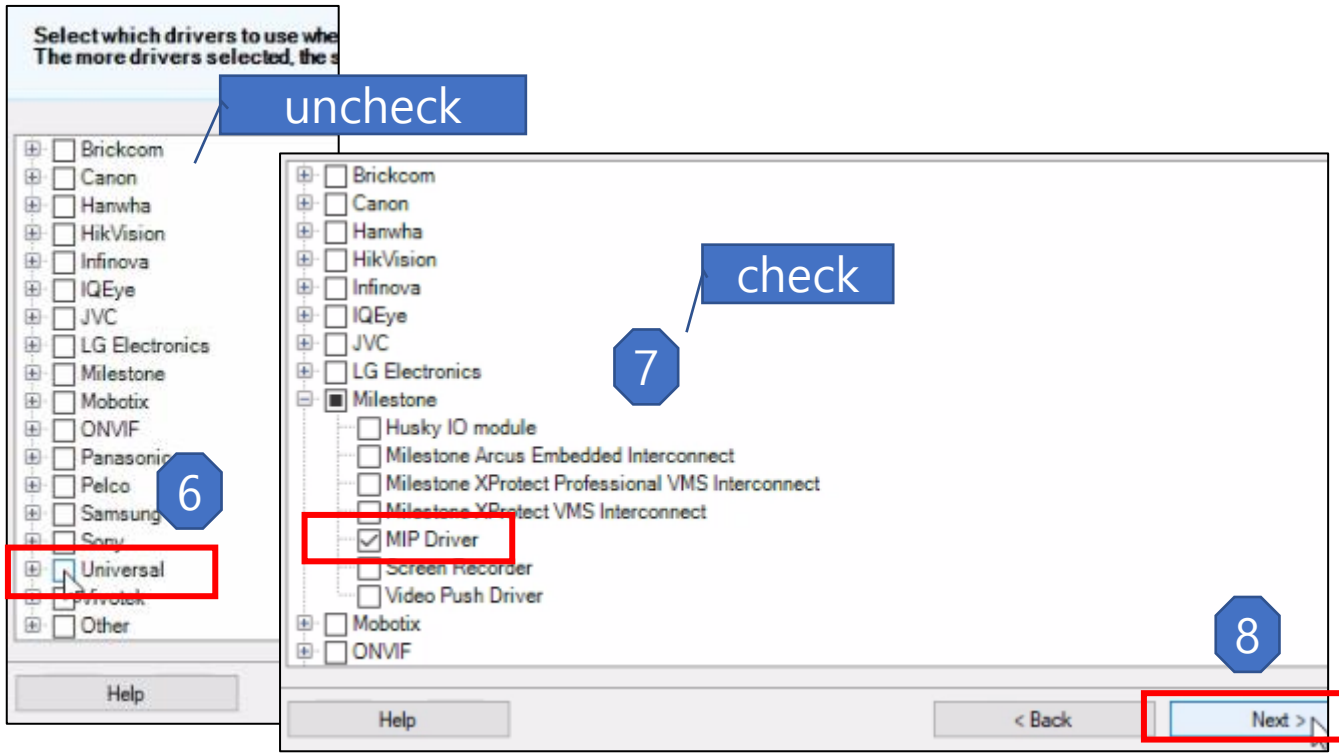
Step 5. Adding MIP driver to Milestone

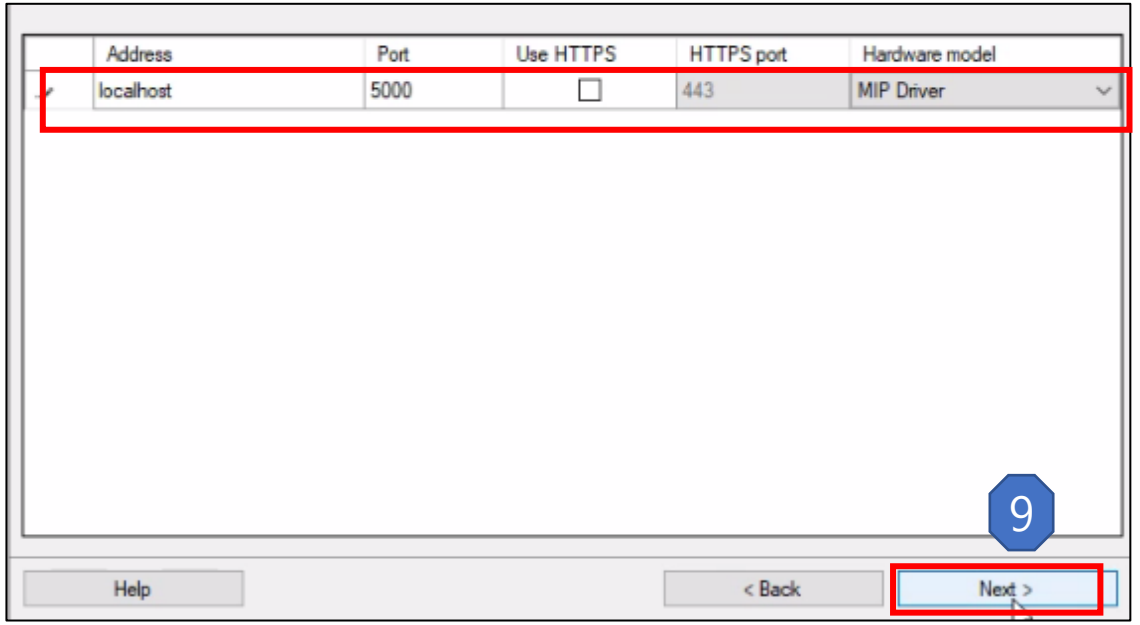
Notes: MIP driver can only be added when the ISD server is running



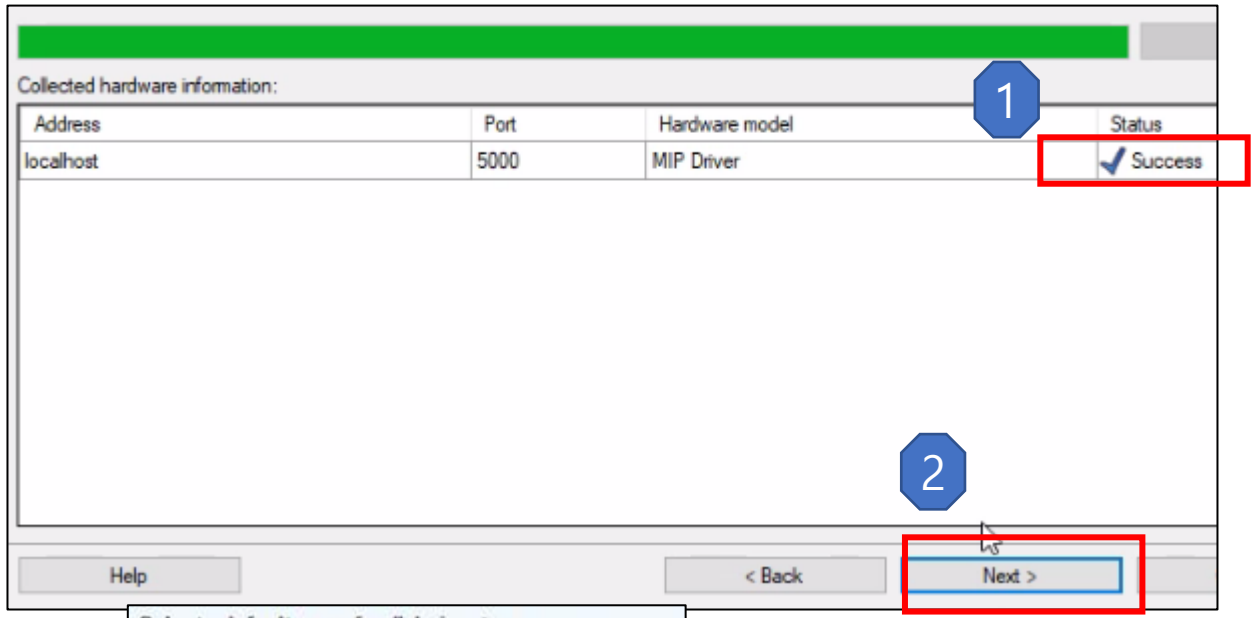


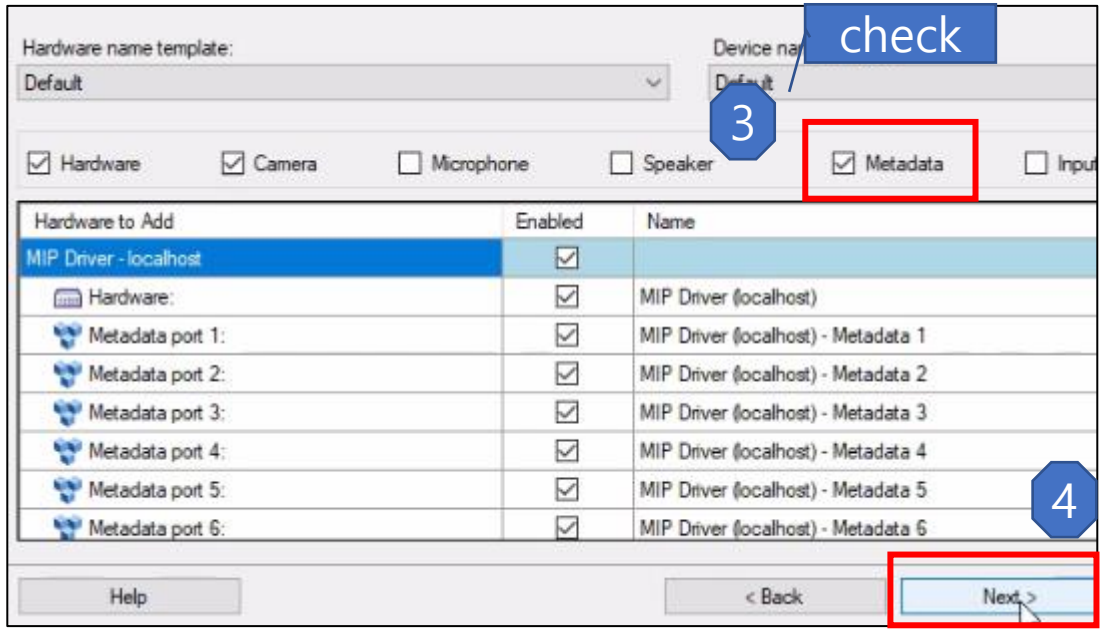


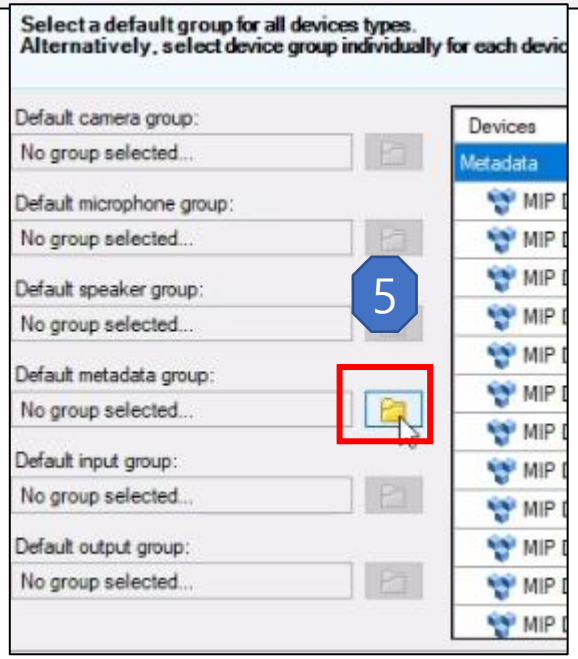


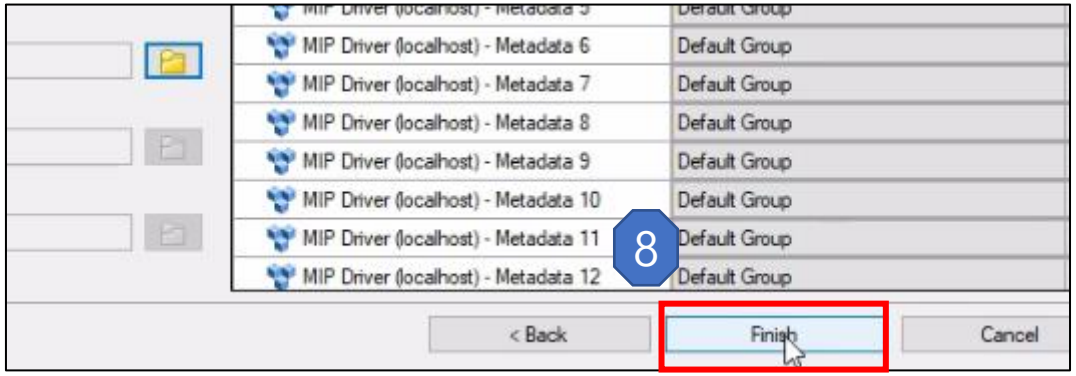


Step 5. Adding MIP driver to Milestone

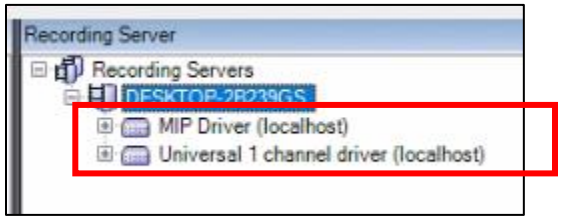




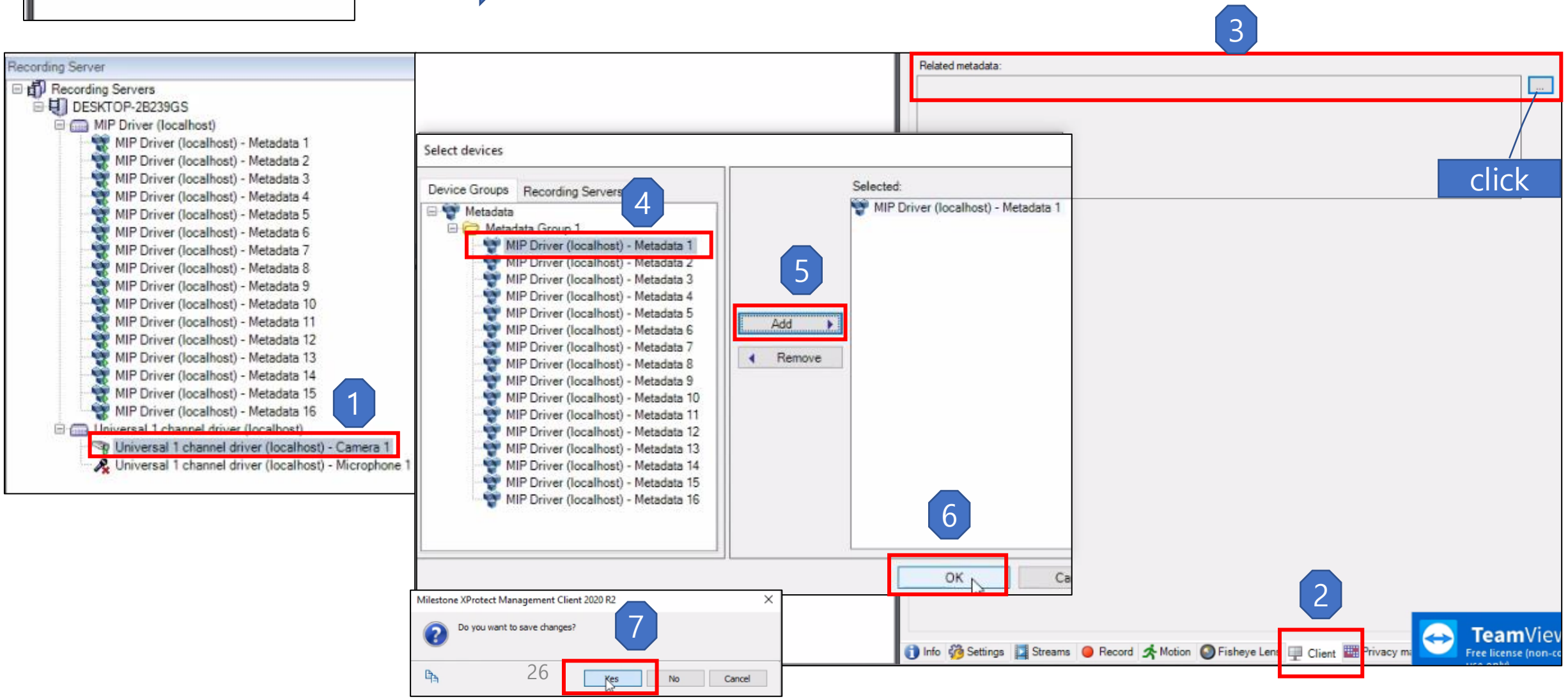




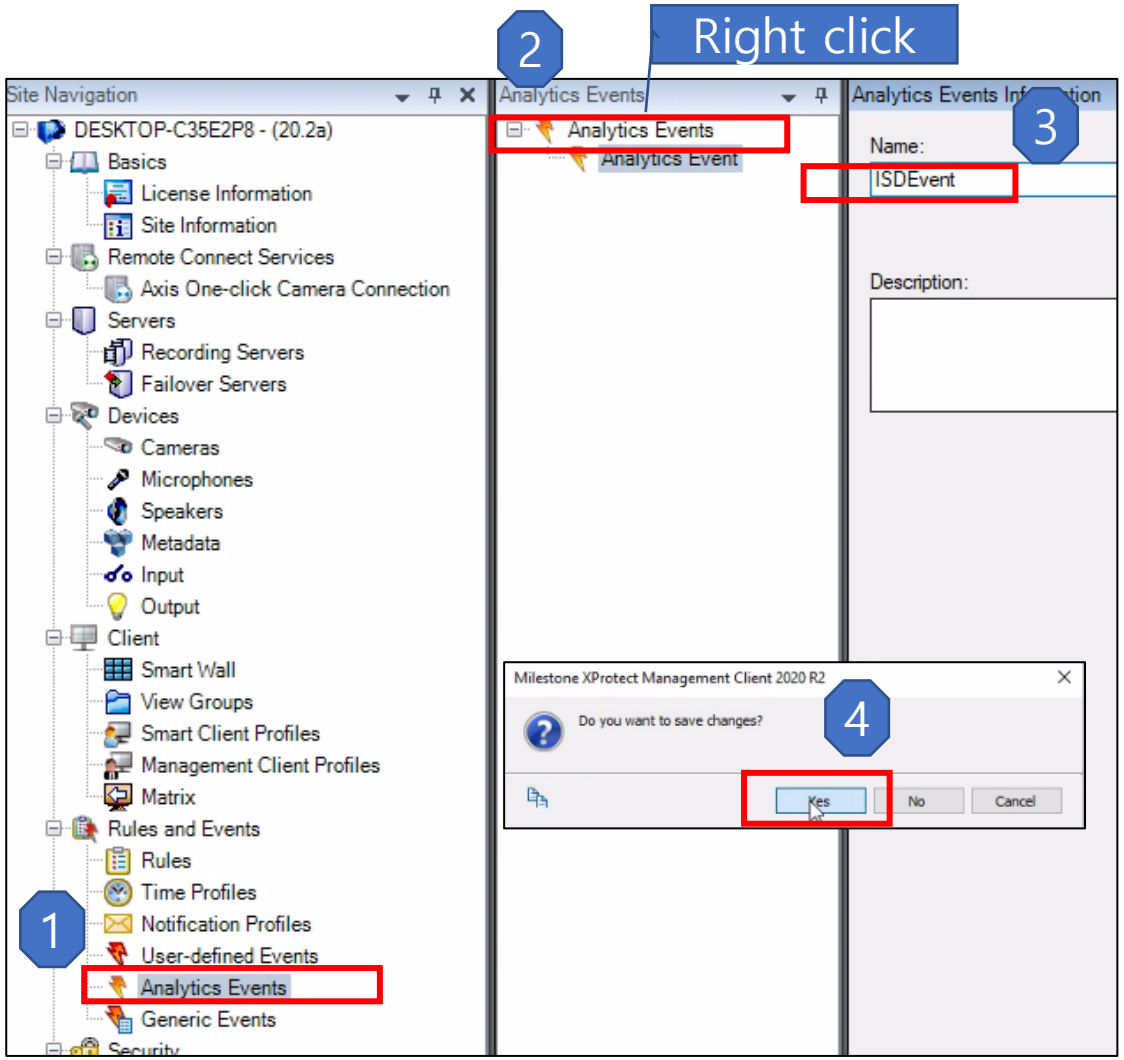
Step 6. Adding Metadata (Camera to MIP driver)

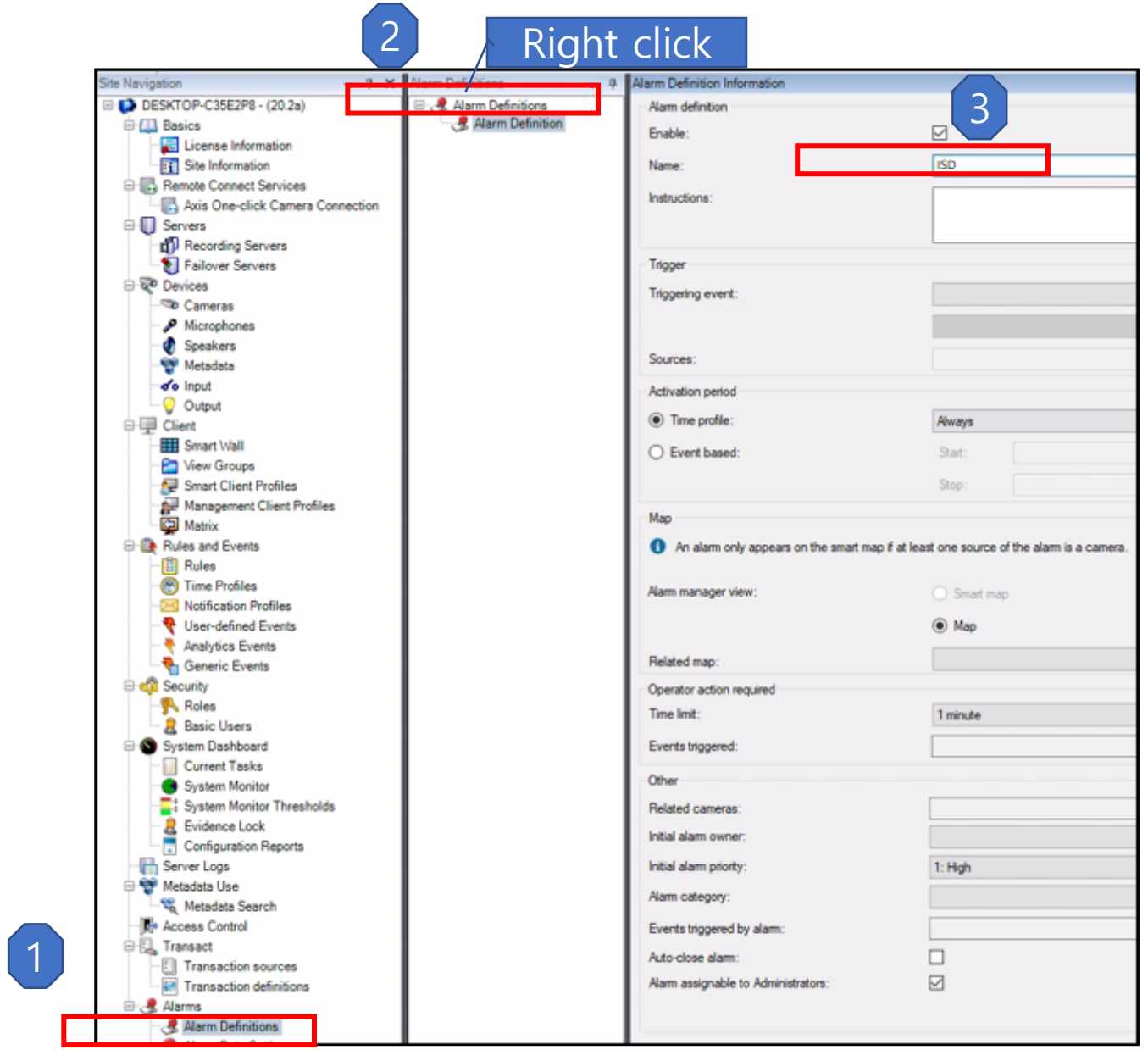


- Note that you have to associate metadata channels with cameras and MIP in a one-to-one mapping manner.

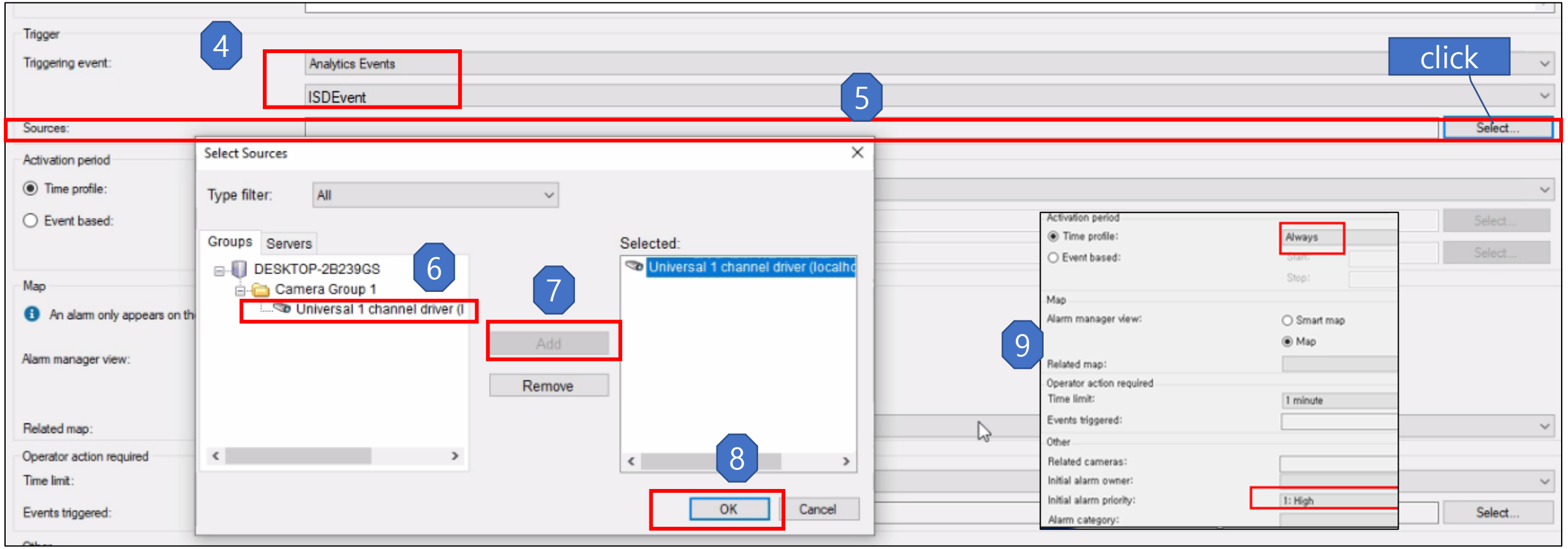


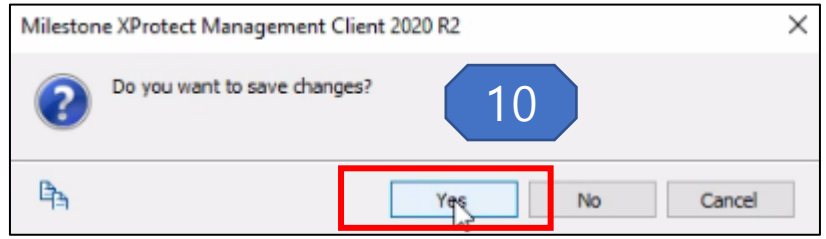
Step 7. SA Event and Alarm Settings



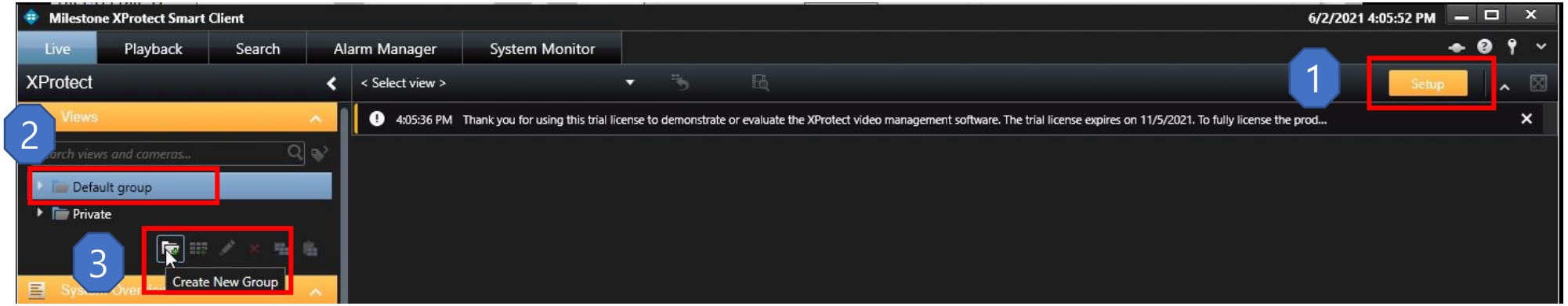


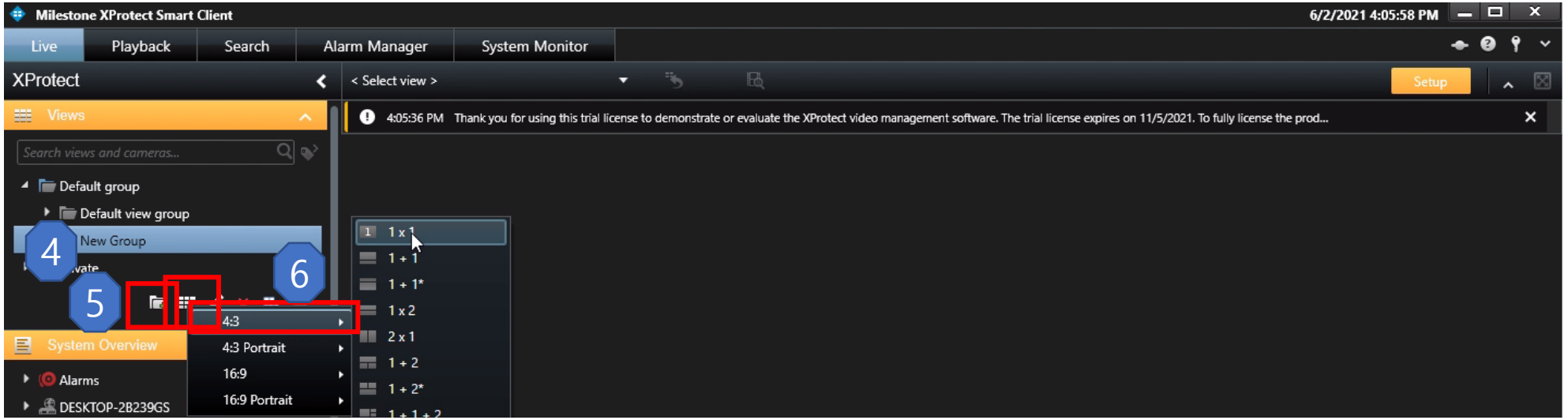
Step 7. SA Event and Alarm Settings



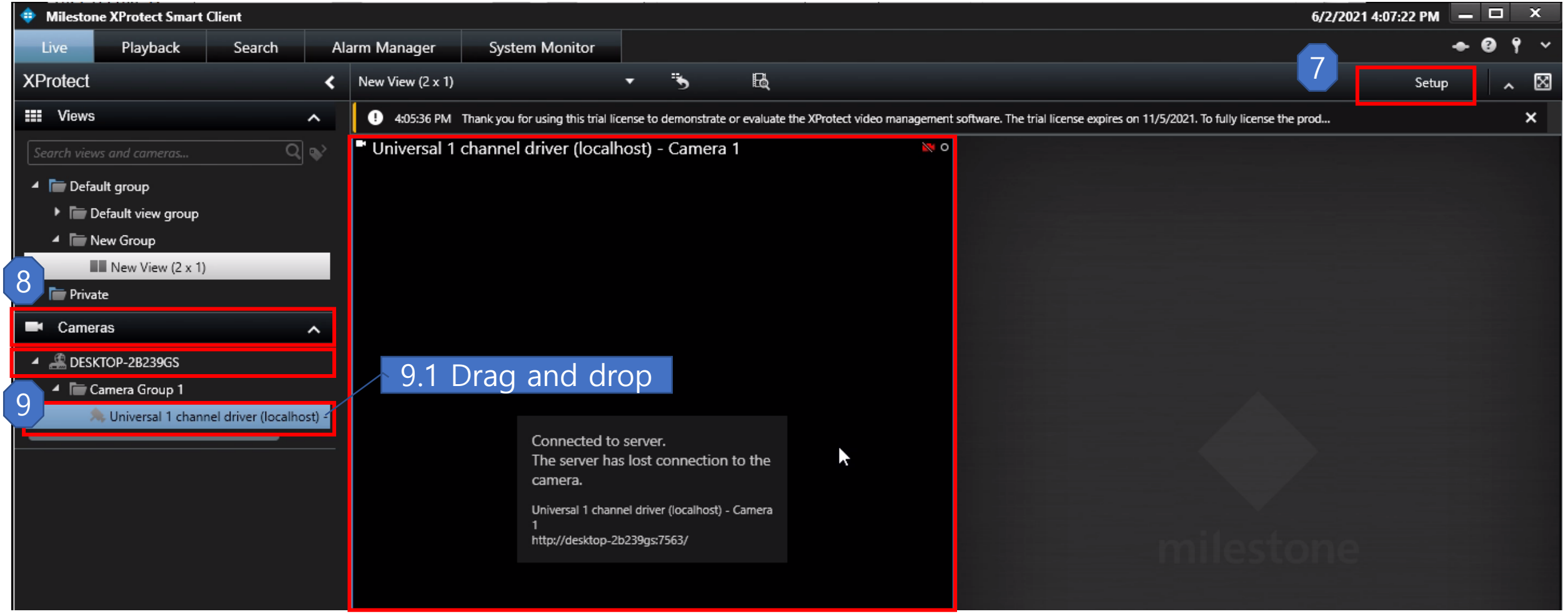


Step 8. CCTV Footage View grid Settings





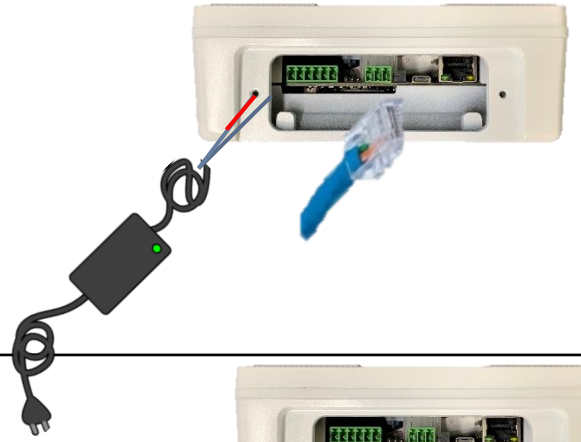
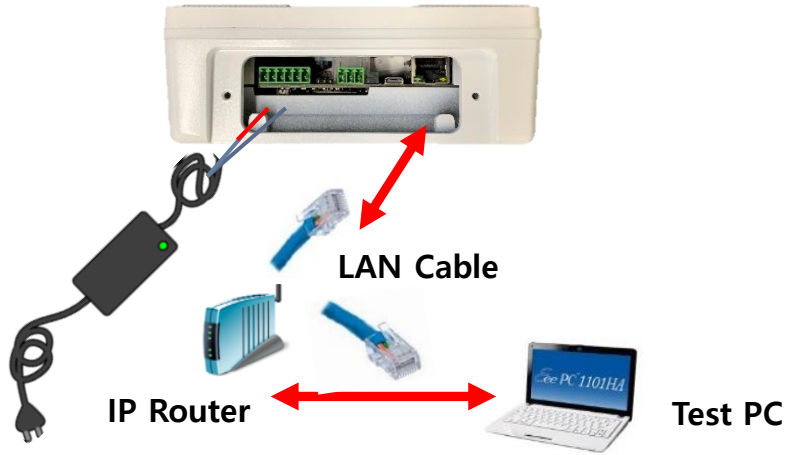
Step 8. CCTV Footage View grid Settings



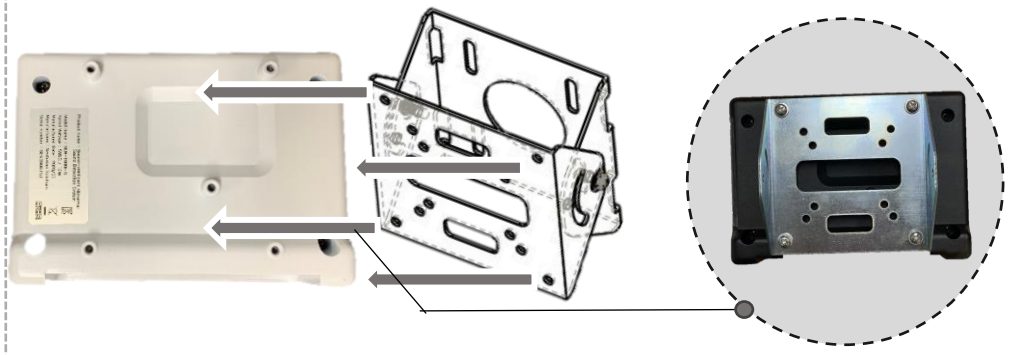
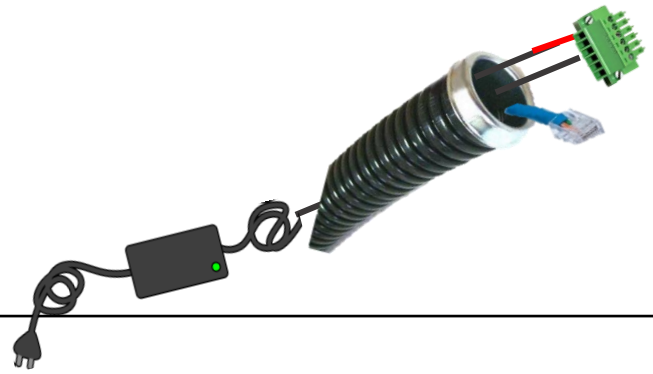
2

Device Hardware Installation

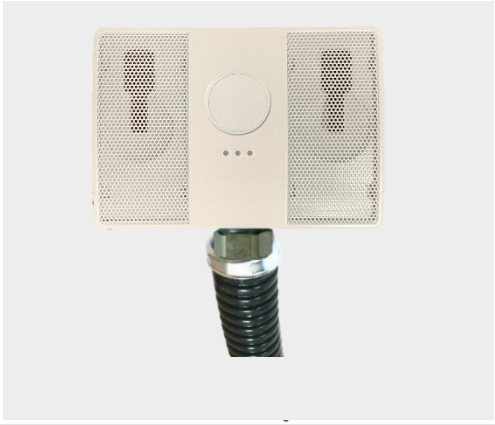
2 Device HW Installation -1

Explanation	Detailed image
1. Power Supply This unit uses a 5V DC power adapter or For POE equipment, supply power through POE.	
2. Equipment connection After powering on, connect the device to the router. Run the supplied **SEN2000-ETHERNET**.exe. **SEN2000-ETHERNET**: Tool to set network related setting, interworking information and threshold (volume bar) (See back page)	

2 Device HW Installation -2

Explanation	Detailed image
① **Connect the angle source equipment and angle bracket.** * Screws required for bracket mounting are included.	 **After fastening the bracket**
② **Connecting blocks and RJ45 when installing** **waterproof flexible. pass all DC and UTP lines first.**	

2 Device HW Installation -3

Explanation	Detailed image
③ Waterproof flexible after connecting DC power and RJ45 (UTP cable) Replace the bottom cover with the connector attached. ④ Attach abnormal sound equipment to the wall.	 Field installation example) 

※ Notes on Installation

- ✓ **There should be no obstacles near the equipment for smooth sound source detection.**
- ✓ **It is recommended to avoid installation where frequent noises occur.**
- ✓ **It is recommended to install at least at the height of 2M because there is a risk of damage.**

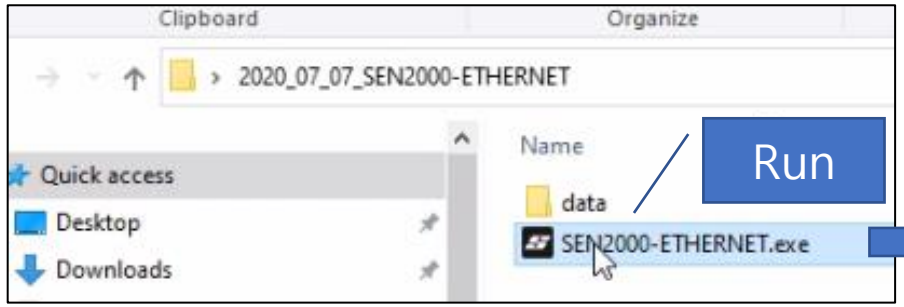
3

Device Hardware (HW) Settings

3 Device HW settings

◆ **ISD Ethernet is a tool program used to set up the equipment IP address.**

Explanation	Detailed image



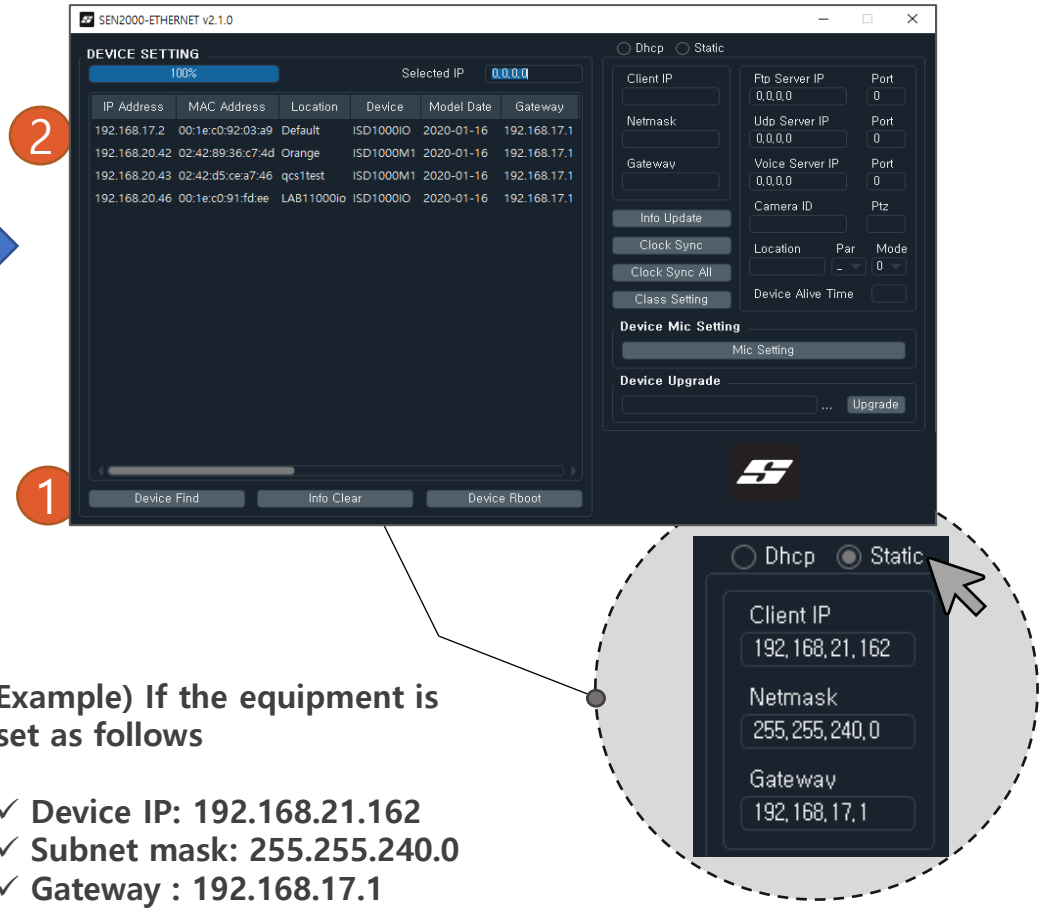
1. Equipment IP Settings

1) Click the 'Device Find' button to search for the connected device.

2) Find the IP of the device you want to set in the device list and **double click** it.

3) After checking 'Static' item, input the IP and network setting value of the device to be set in Client IP, Subnet mask, Gateway.

(You must check the Static radio button to activate each equipment.)



Example) If the equipment is set as follows

- ✓ **Device IP: 192.168.21.162**
- ✓ **Subnet mask: 255.255.240.0**
- ✓ **Gateway : 192.168.17.1**

3 Device HW settings

◆ **Ethernet tool**

Explanation	Detailed image

2. FTP Server setting

Enter FTP Server IP and PORT where detected sound will be uploaded. (By default, PORT uses **24**.)

※ The detected event source is uploaded to the FTP server.

3. UDP Server Setting

Enter the Server IP and Port to receive UDP messages.
(In case of linking with Milestone, PORT is **1308** and Serverip is the server IP where "ISD server" program is installed.)

※ When interlocking with VMS, etc., interlock with UDP packet.

4. VOICE Server setting

Enter the Server IP and PORT where KServer (voice recognition server) will be installed.
(Default port is **5050** and if changed, KSERVER program also You need to change the setting.)

※ It analyzes / extracts the words included in the sound source stream input through the device.

Server PC IP

Camera ID that exported from ISDserver.
- Refer page 23

Example:

CAM ID || CAM NAME
35fce504-e15c-47ec-9c60-2721db9ef331

- ✓ **FTP Server PORT: 24**
- ✓ **Udp Server PORT: 1308**
- ✓ **Voice server PORT : 5050**

3 Device HW settings

◆ **Ethernet tool**

Explanation	Detailed image

5. Camera ID

Enter the camera information to be linked. **Refer to Slide #23**

(You can check the camera information in "Caminfo.txt" that "Exported" from ISDServer.exe.)

6. PTZ Initial number setting

PTZ Set the initial number.

7. Location setting

Specify the equipment installation location.

8. Par

interlocking-formatted Separator Set (default: _)

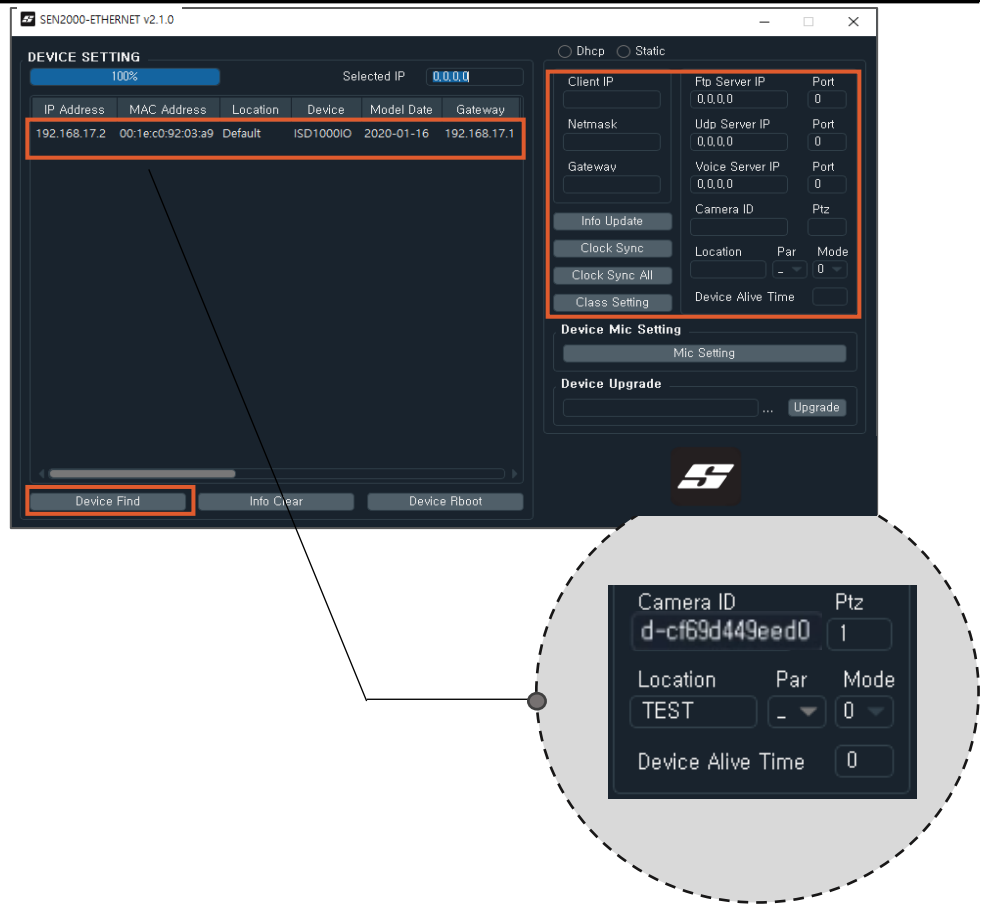
9. Mode

Sets UDP packet interlocking format (default: 0)

10. Device Alive Time

Keep alive Set the interval for sending messages.

(When it is set as 0, it is not transmitted. When it is linked with Milestone, it is set as 0.)



3 Device HW settings

◆ **Ethernet Tool**

Explanation	Detailed image

11. Threshold Setting

Click “Device and Mic Settings” and “Connect” menu.

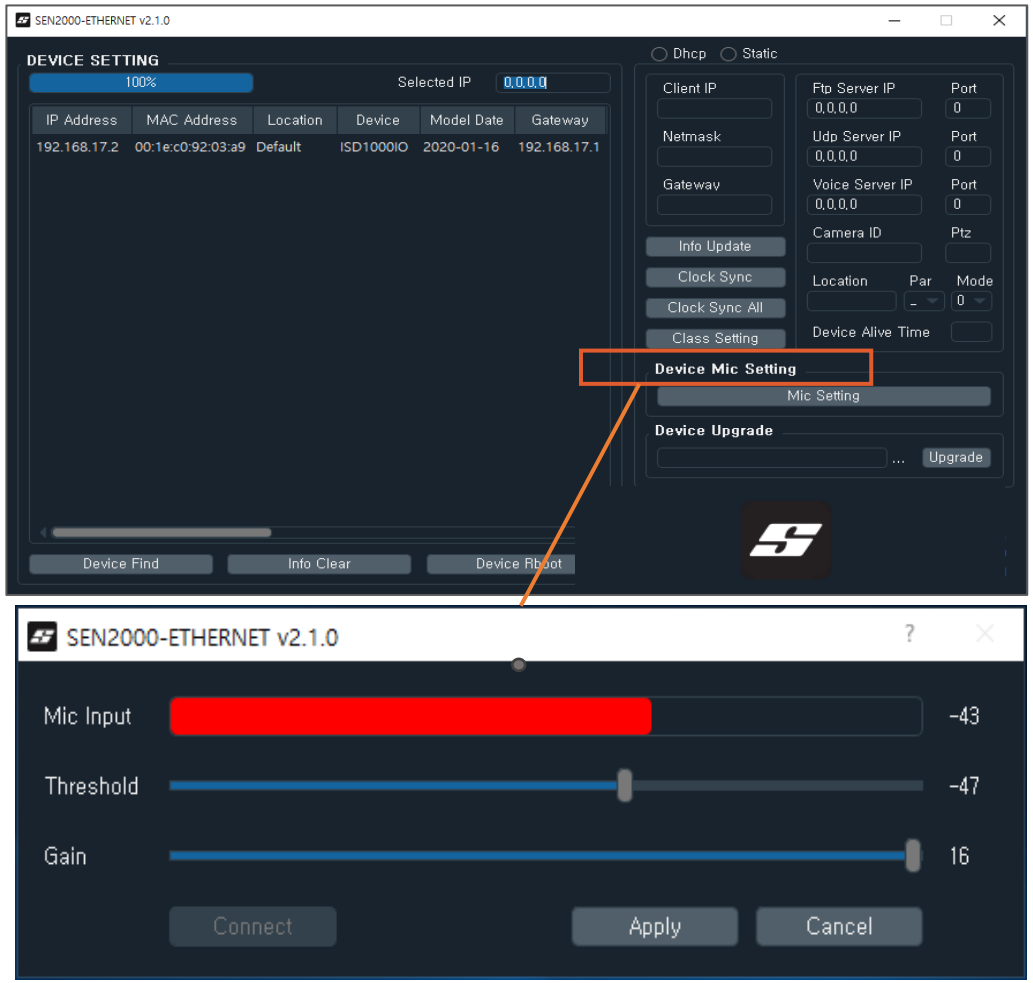
- Mic input: current environmental noise dB
- Threshold: set value, should be higher than Mic Input
- Gain: Microphone Gain Value

This function sets the dB value for detecting sound sources.

The more you set it to the right, the higher the volume of the sound source you want to detect.

Click the 'Info Update' button to apply the changes before setting the threshold.

At this time, the device will reboot once.



3 Device HW settings

◆ **Ethernet tool**

Explanation	Detailed image

12. class setting

① Class Mode

- Lite : SEN1000i-S Ver

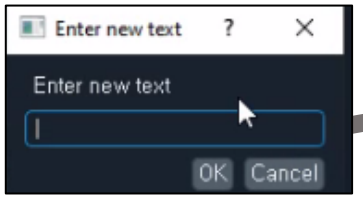
② Target list

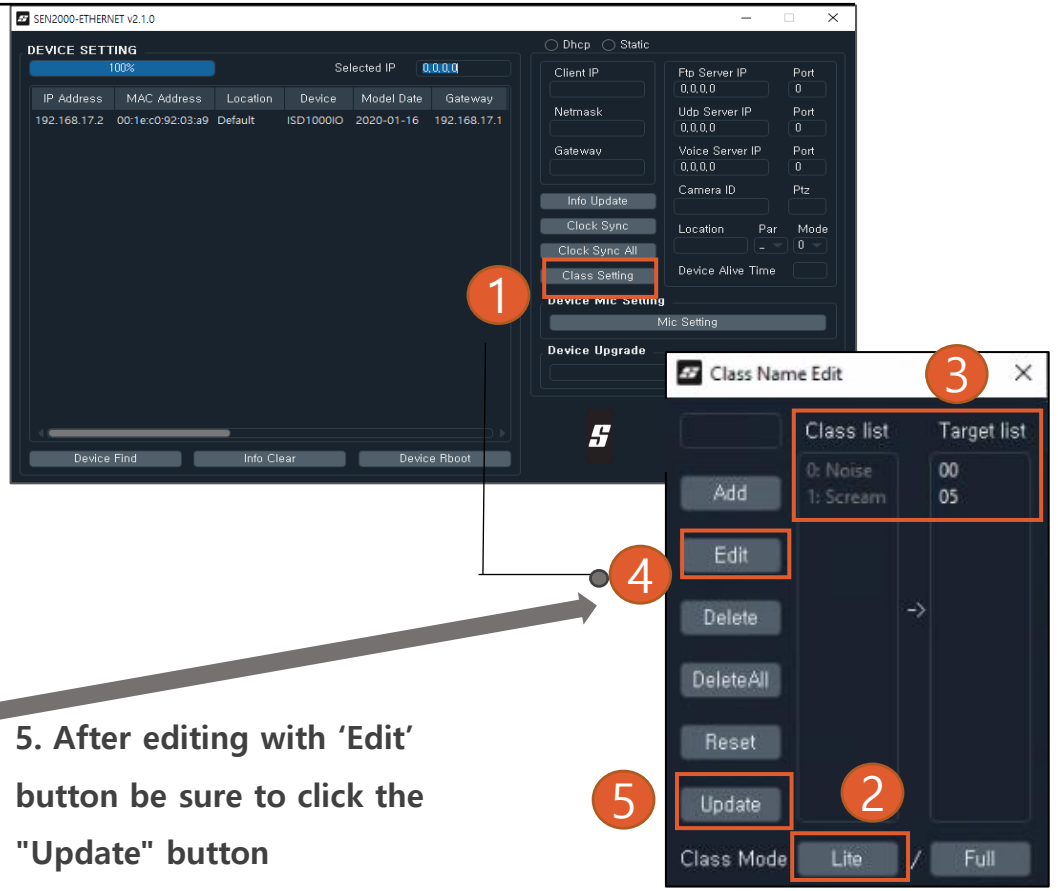
Specify which event number to send the result to the VMS when classified as a class.
(No event sent when set to 00)

4. After clicking the 'Light' button, change the "Target List" as follows using "**Edit**" menu"

0: Noise → 00
1: Scream → 05

Remove other events or numbers by "Delete" menu

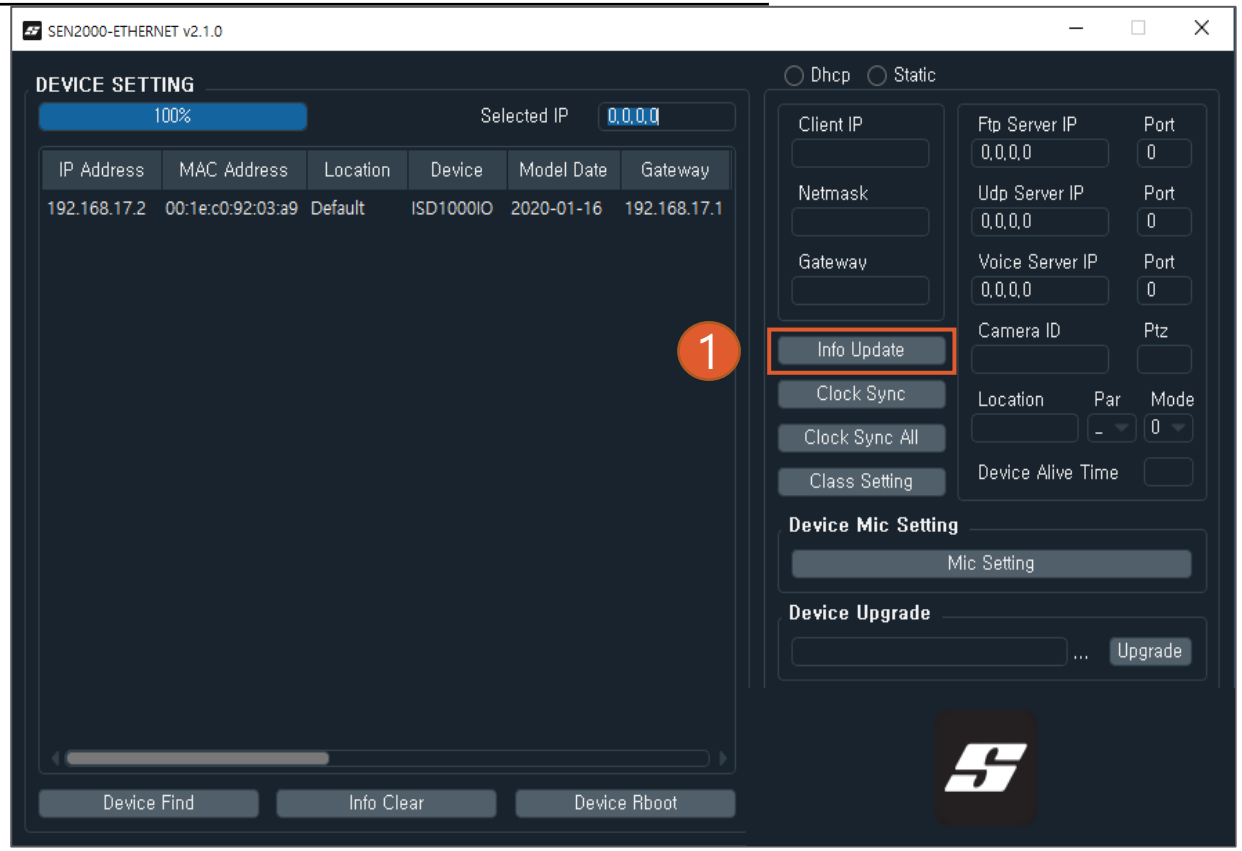




5. After editing with 'Edit' button be sure to click the "Update" button

3 Device HW settings

◆ **Ethernet tool**

Explanation	Detailed image
13. Info Update After class set, press "**Info Update**" ⇒ The device start reboot ⇒ Reboot takes roughly **5min**	

4

Sound & Voice Analytics Server Program Setting

1 KSERVER Settings

4 KSERVER Settings-1

◆ **KSERVER is a voice recognition server program that has the function of extracting the words contained in the sound source received through the SEN1000I-s voice recognition equipment.**

Explanation	Program image

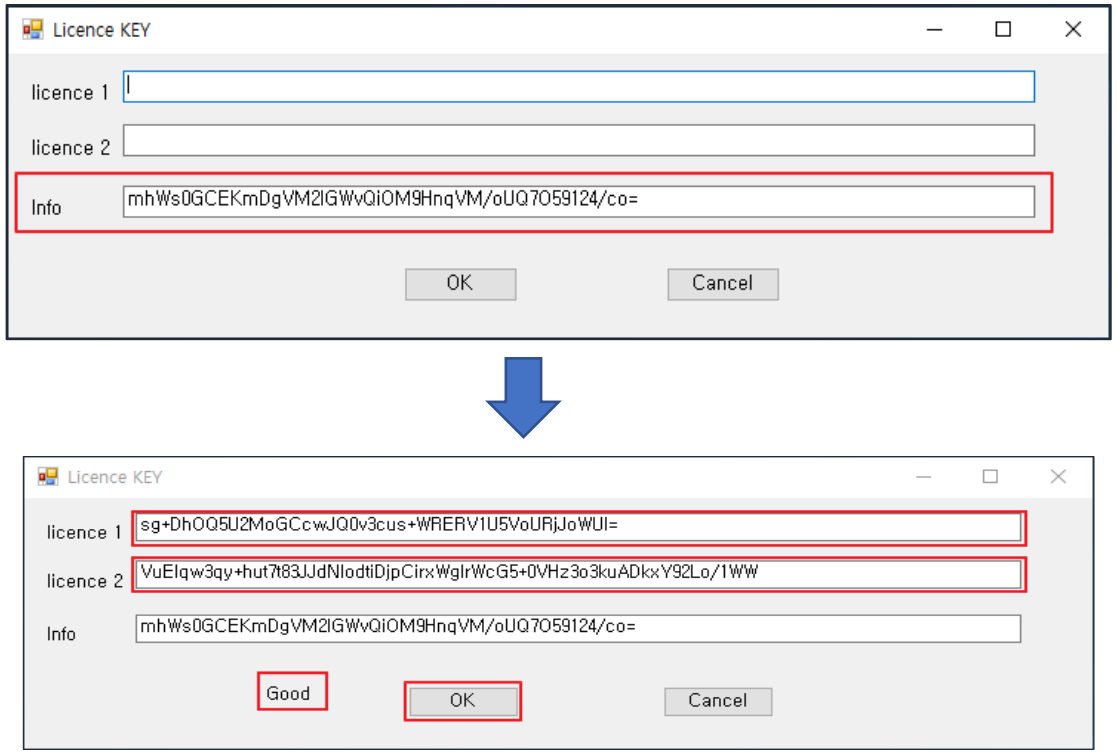
A. KSERVER License

1) When run "K server program", it will ask license

2) Please send the "info" to Senturian to deliver the license 1, 2,

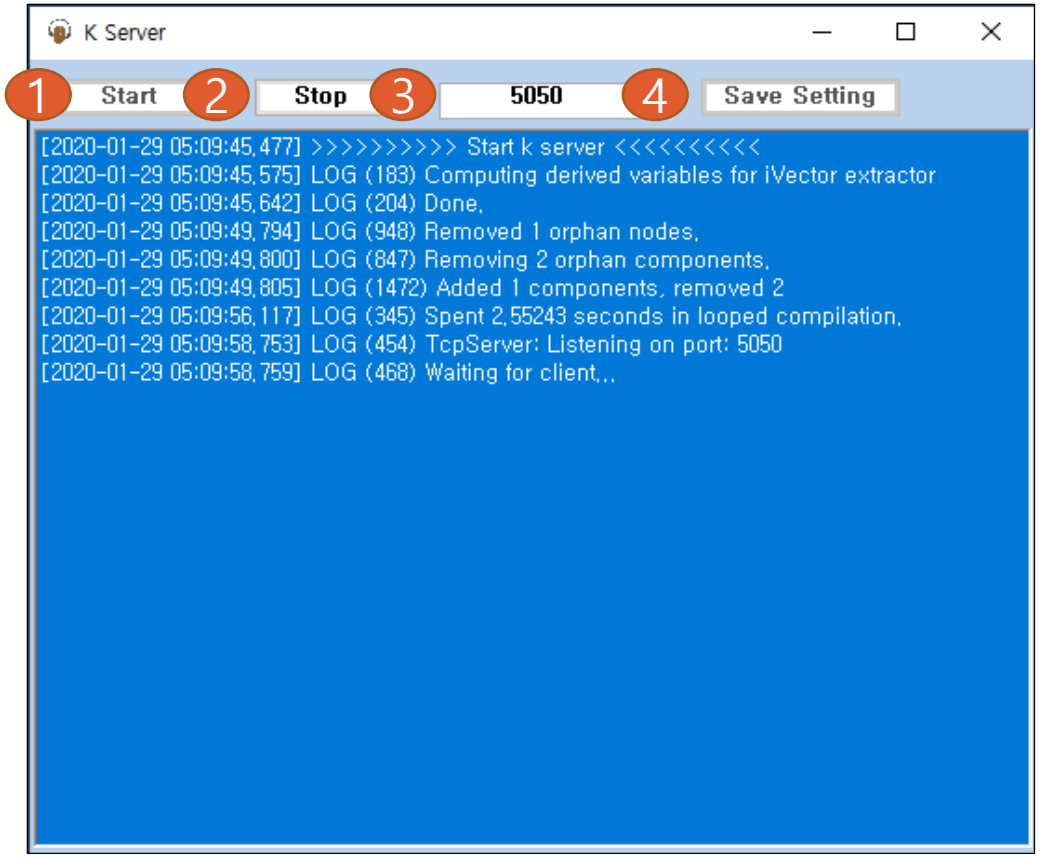
3) After plugin license it will show "Good" and click "ok"

※ This license part, generate different "info" whenever you turn on. To keep in same, it is recommended to disable all Ethernet connections except just 1, in "device manager" menu.



4 KSERVER Settings-2

◆ **KSERVER is a voice recognition server program that has the function of extracting the words contained in the sound source received through the SEN1000i-s voice recognition equipment.**

Explanation	Program image
B. KSERVER setting 1) ③ Specify the port to receive the sound stream from the item.. (When changing from **5050** set as the default port, click Save Setting to apply.) 2) Start button (item 1): Receives sound stream from abnormal sound source equipment and starts word extraction. 3) Stop button (item 2): Receives sound stream from abnormal sound source equipment and stops word extraction. **※ By default, it automatically start the program without clicking the Start button and receives a sound streams from the device.**	

5

Abnormal Sound Event & Event Log Testing in Milestone

5 Checking the “Event” in Milestone

Program image	
Event confirmation When an event (“Help” or “Help me” or “Scream” is normally received, an event popup is displayed along with the event type as shown in the picture	 

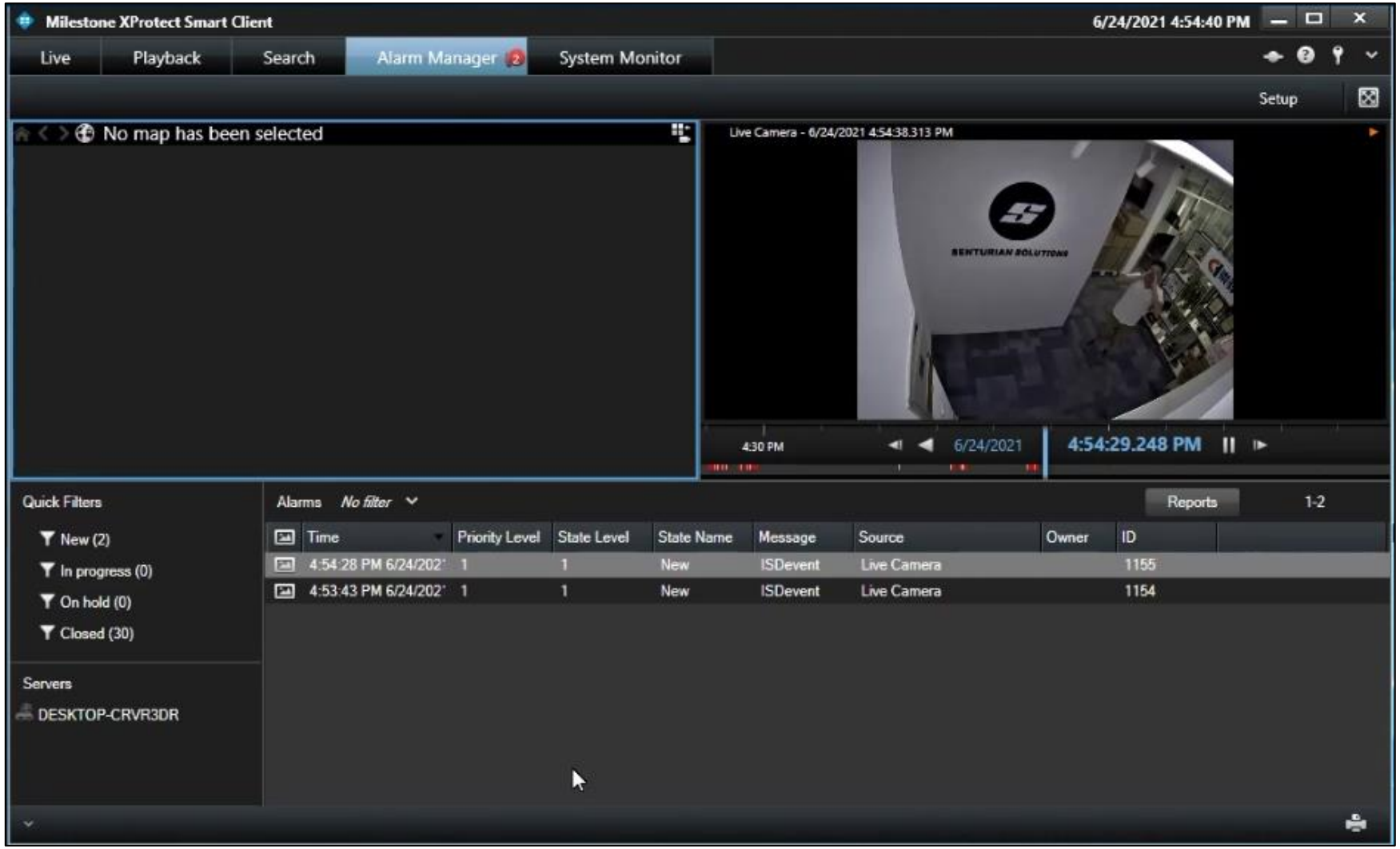
5 Checking the “Event Log” in Milestone

Program image

The event log can be checked in the “Alarm Manager” tab as shown in the picture.

VAEvent = Video analytics Event

ISDEvent = Intelligent Sound Detector Event



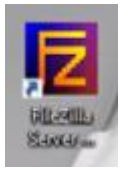
Summary

6 Summary

Run all the program after closing all the program. All program should not be closed but can be minimized.

Program image	

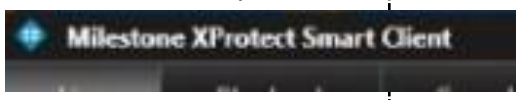
1. Run FileZilla program
- Login if need



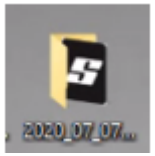
2. Run ISD program
- Login server
- Press "**Start server**" status should be "**Waiting**"

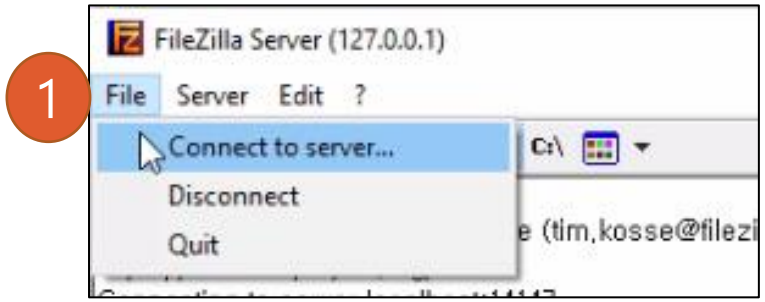
3. Run Kserver program

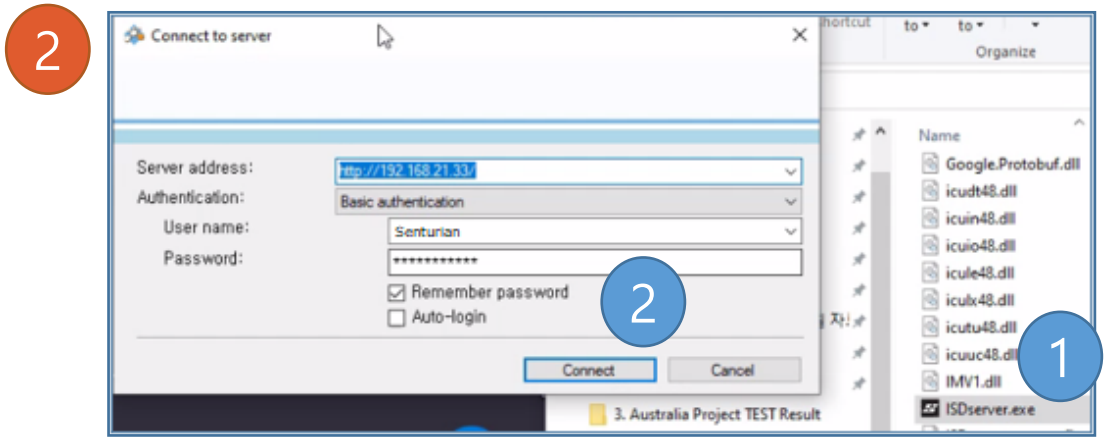
4. Run Milestone Client (No need to open Management server)

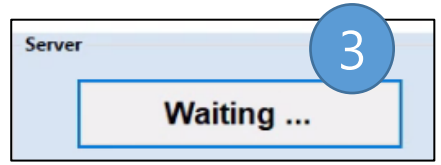


5. No need to run Ethernet program because HW reset is done by 1 time.
Run Ethernet when need to change HW settings such as IP address, etc.










Thank you