



**The Intelligent Surveillance Solution**

**NuFace**  
**User Manual**

Ver. 1.0.0.151015.00

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# 1. Introduction:

NuFace is a windows-based application aiming to provide advance face recognition analysis service to users with simplicity configuration and accurate result.

This application should be compatible with NUUO all product line with TCP/IP metadata connection:

NUUO Mainconsole v6.1 and above

NUUO Crystal v3.1 and above

## 1-1 Function

Nuface is a portable application which shall provide below functions:

- Get video streaming from WebCam or IPcam.
- Register faces as profile for recognition
- Face recognition analysis for profiled face
- Send recognition results(metadata) to NUUO product (via TCP/IP client)

# 2. Requirement:

## 2-1 Minimum Hardware Requirement

|              |   |
|--------------|---|
| CPU          | (CPU) Intel® Core™ i3 2.4GHz and above  |
| OS           | Windows XP, Windows 7, Windows Embedded |
| RAM          | 2GB                                     |
| Storage size | 20 GB                                   |

※ Turn off UAC is required when installing/executing application

※ Administrator privilege is required

## 2-2 Tested Capture Device:

### Web Cam

|                  |  |
|------------------|--|
| Model            | Logitech HD Webcam C910 and C920, Logitech Quickcam Pro 9000, Microsoft LifeCam Series |
| Environment      | Indoor with bright light   |
| Distance of Face | 7 meters in 640x480 resolution   |

### IP Cam

|                  |                                |
|------------------|--------------------------------|
| Brand            | Axis, Vivotech, D-link, Basler |
| Environment      | Indoor with bright light       |
| Distance of Face | 7 meters in 800x600 resolution |

## 2-3 OS Requirement:

Windows 7:

Microsoft.NET Framework 4.0 or above

Microsoft Visual C++ 2010 (x86)

Windows XP:

Microsoft.NET Framework 3.5 and 4.0

Microsoft Visual C++ 2010 (x86)

## 2-4 Application Spec

| Features   |  |
|--|--|
| <ul style="list-style-type: none"> <li>➤ Face recognition</li> <li>➤ Black list</li> <li>➤ Distance detection</li> </ul> | <ul style="list-style-type: none"> <li>➤ Gender detection</li> <li>➤ Age detection</li> <li>➤ Face Scramble</li> </ul> |
| Specification  |  |
| Supported Video Source   | Web Cam/USB Cam  |
|  | IP CAM (via CGI or RTSP)   |
| Recommended Codec for analysis   | MJPEG over HTTP<br>MJPEG over RTSP   |
| Max. analyzed channels per server  | 16 (depends on server and video quality)   |
| The maximum quantity of faces to be detected per video source  | 64   |
| The recommended quantity of faces to get recognition analyzed  | 8  |
| Recommended pixel of face for recognition  | 100x100  |
| Minimum pixel of face to be detected   | 20x20  |
| Recommended angle for recognition  | Within 15 degree   |
| Recommended pixel for recognition  | Minimum 100x100  |
| Maximum album of faces   | 6,000  |
| Maximum registered images in the profile   | 60,000   |
| Face enrollment methods  | Live capture   |
|  | History images   |

## 2-5 Other Requirement

- If project requires extreme accuracy; the recognition environment shall be setup. For example, object shall not wear glasses, hat or significant wearing; object shall stand in a predefined zone which the lighting and view angle is preset for recognition.

# 3. Interface and Operation:

## 3-1 Application UI

Function List

Red frame represents female; blue Frame represents male and white frame represents neutral gender

Same color means same object been detected (max 8 colors)

### Feature Definition

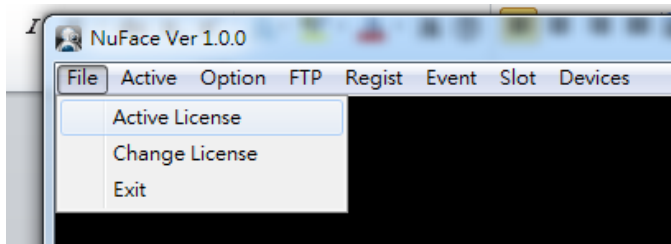
|                             |  |
|-----------------------------|--|
| Face detection and counting | Uses pattern detection to log and analyze the demographics of the people who see the visual messaging. |
| Age estimation              | Counts and reports the age and age ranges of detected persons.   |
| Gender estimation           | Counts and reports the gender of detected persons.   |
| Attention time              | Detects how long each detected viewer looks at a message.  |
| Viewer distance             | Detects and estimates the distance between each detected viewer and the camera. (cm)                   |

## 3-2 License Activation

NuFace is portable application.

How to activate license:

- a. Open License.ini
- b. Type in license serial number (42 digits) in License.ini
- c. Close license.ini
- d. Open NuFace.exe



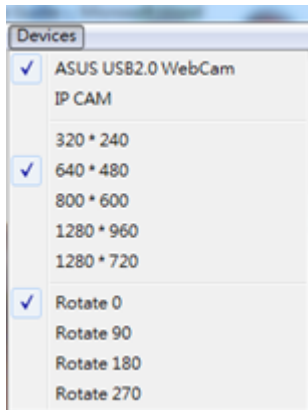
- e. File Tab – Click Activate License

### 3-2-1 Notes of License activation

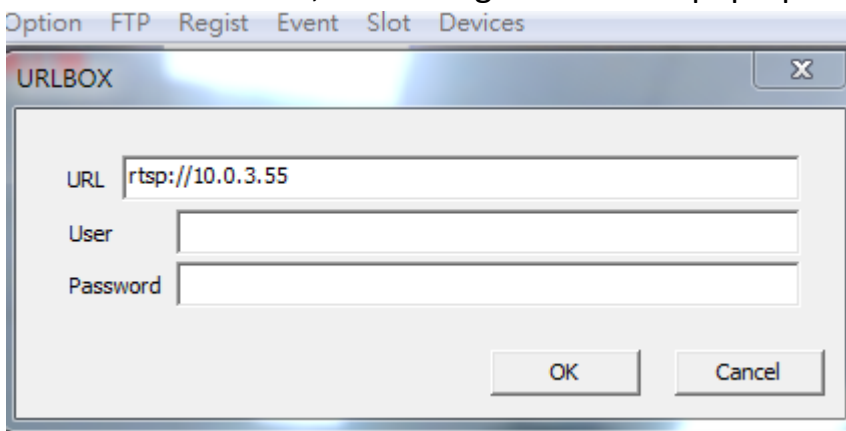
- First time Activate license or Change license requires WAN environment for license server.
- Only one license number is accepted in license.ini
- There is no transfer license feature in NuFace
- If server had 1ch license activated; and user want to use 4ch in this server. User has to put 4ch license serial number in license.ini and then click on Change license.
- The server time has to be accurate, if there is more than 15 mins difference between server time and standard time, the activation would fail.

## 3-3 Video Devices

Click Devices on the function list to select webcam or IP cam and choose the resolution.

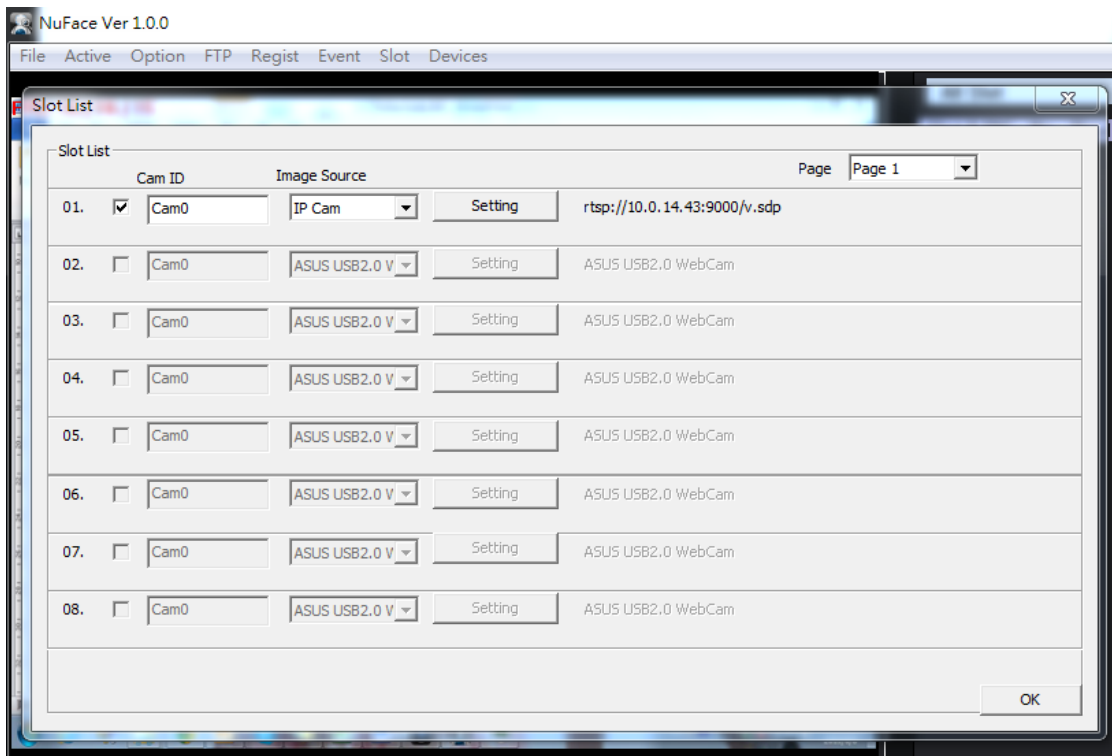


If IP CAM is selected, the setting window will pop-up.



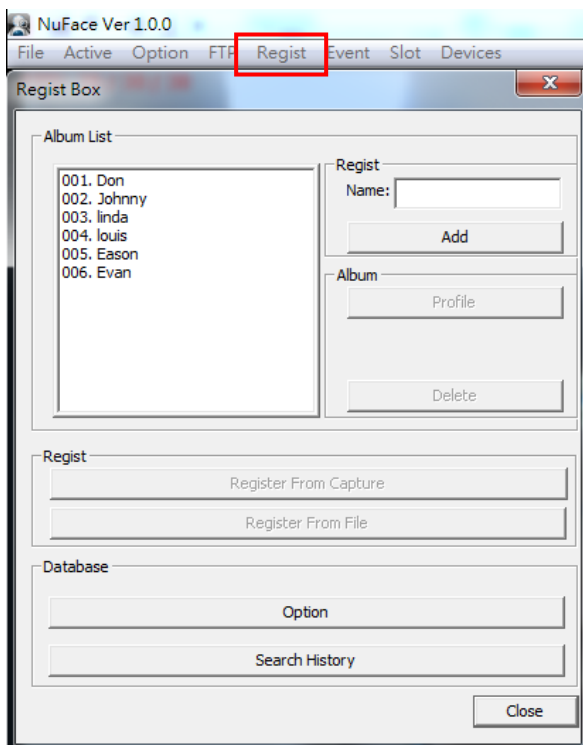
Go to Slot/Slot option  
Change Image source





### 3-4 Registering Faces

-Adding face profile – Regist

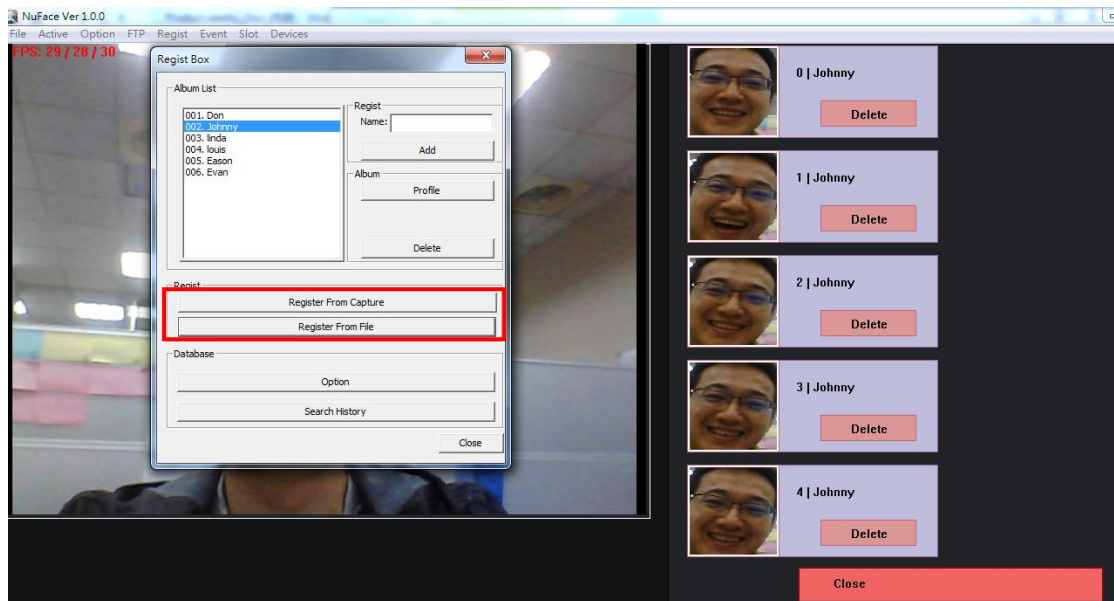


1. Click "Regist" on the menu bar -> The Regist Box pops up
2. Enter "Name" for the ID -> Click "Add"
3. ID should be added to the Album List

There are two ways to add album files

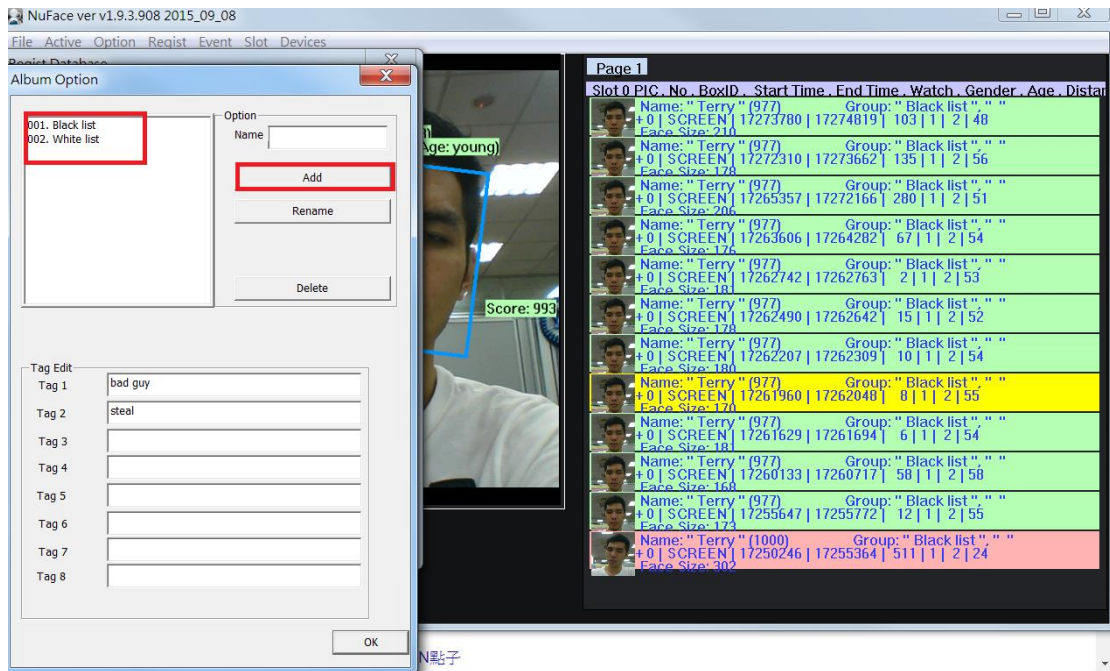
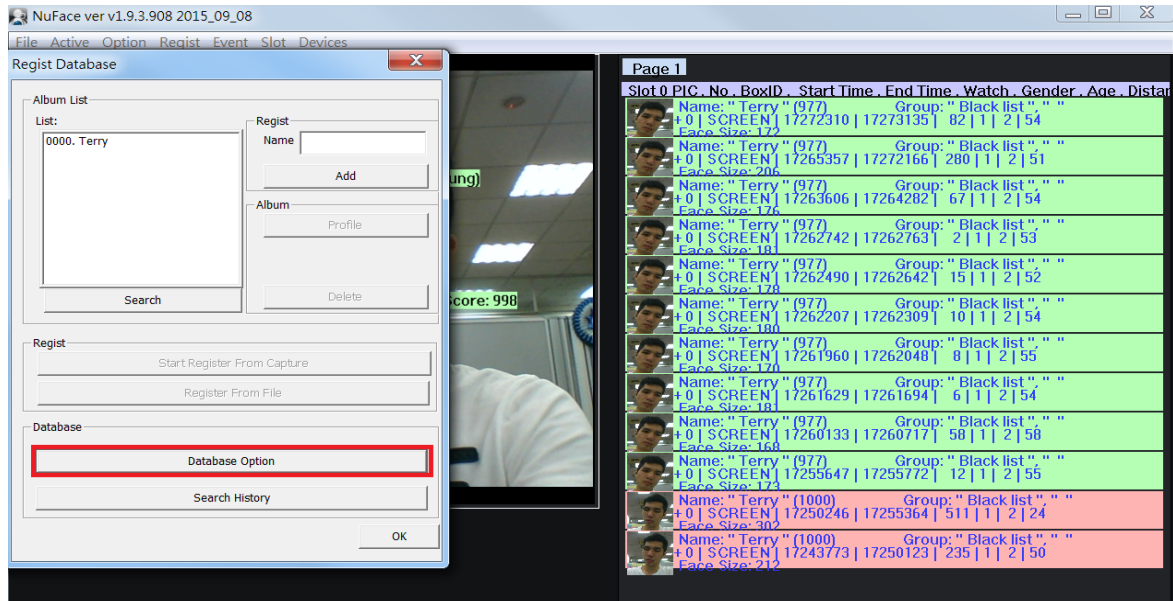
- 3-1 Register From Capture – directly capture face image from video device.
- 3-2 Register From File – add face image from existing picture.

4. Adding faces with different angles for better performance
5. Click "close" when you finish the registration process

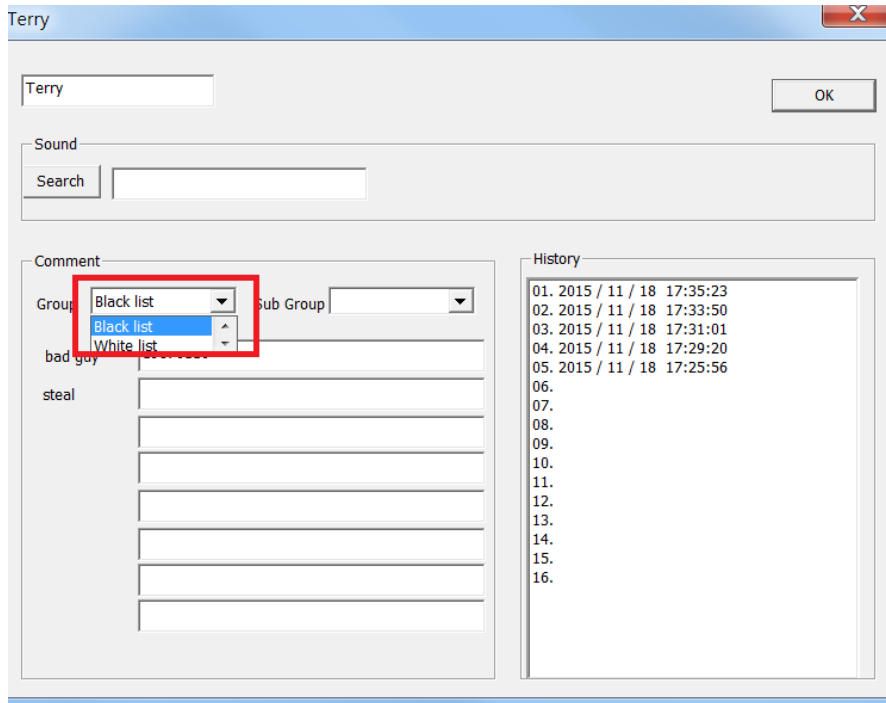
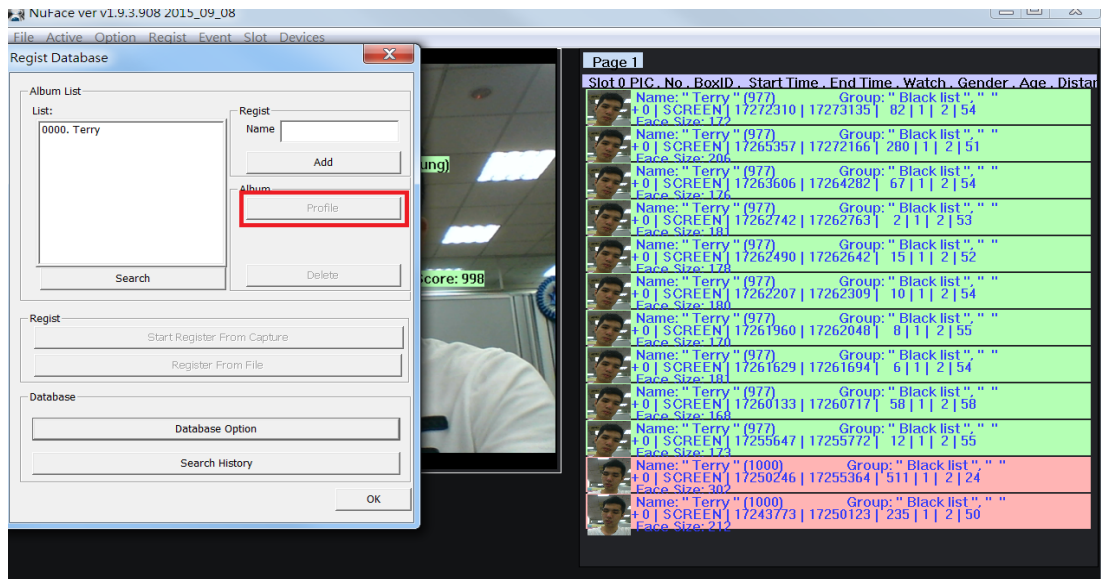


-Add group as Black and White list

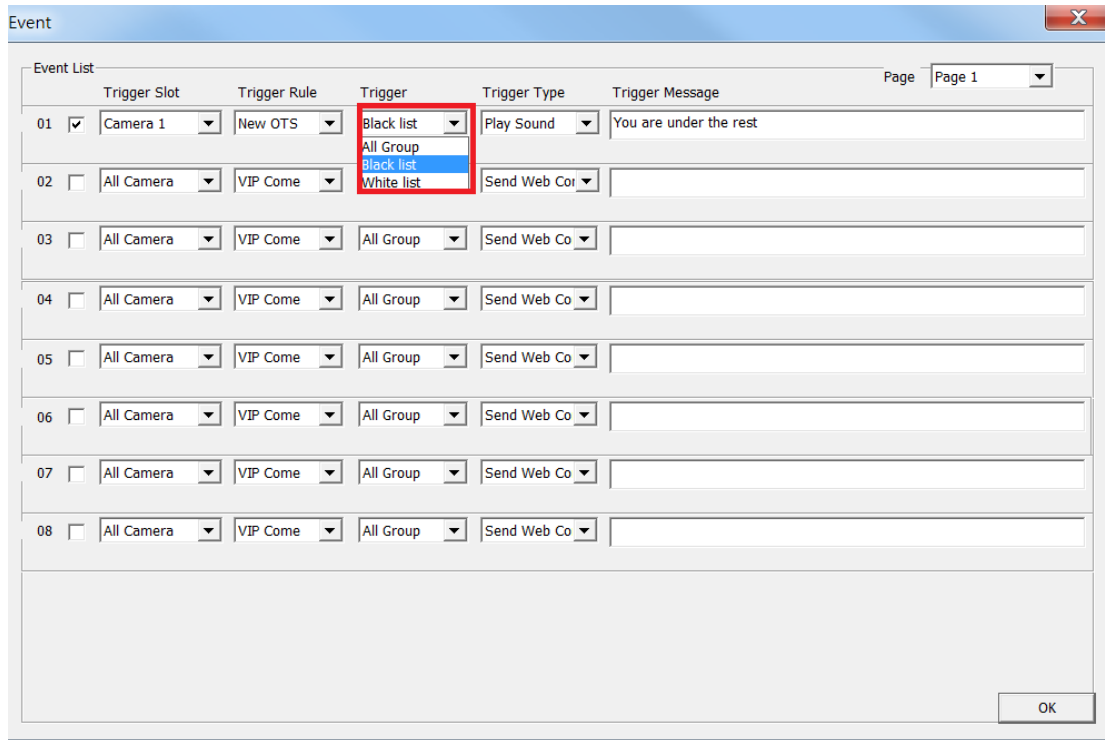
1. Regist a group from database option, you can make members in black group or white group .



2. You can press the Album and assign the person to the group of black or white list .



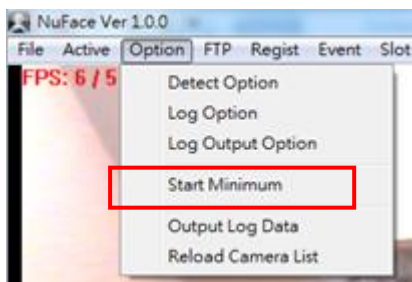
3. You can set up the event/action for the group which in the black list



## 3-5 Advance Setting

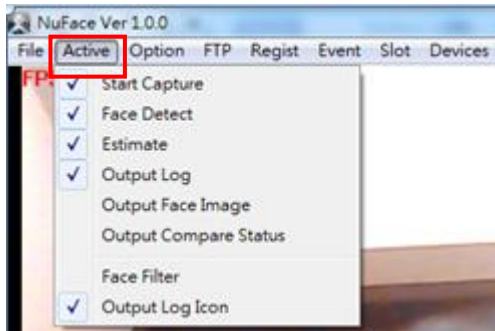
### 3-5-1 Mimimum Application

Click “Start Minimum” in the list of “Option” functions, NuFace will be minimized to the toolbar when running.



### 3-5-2 Feature Enable/Disable

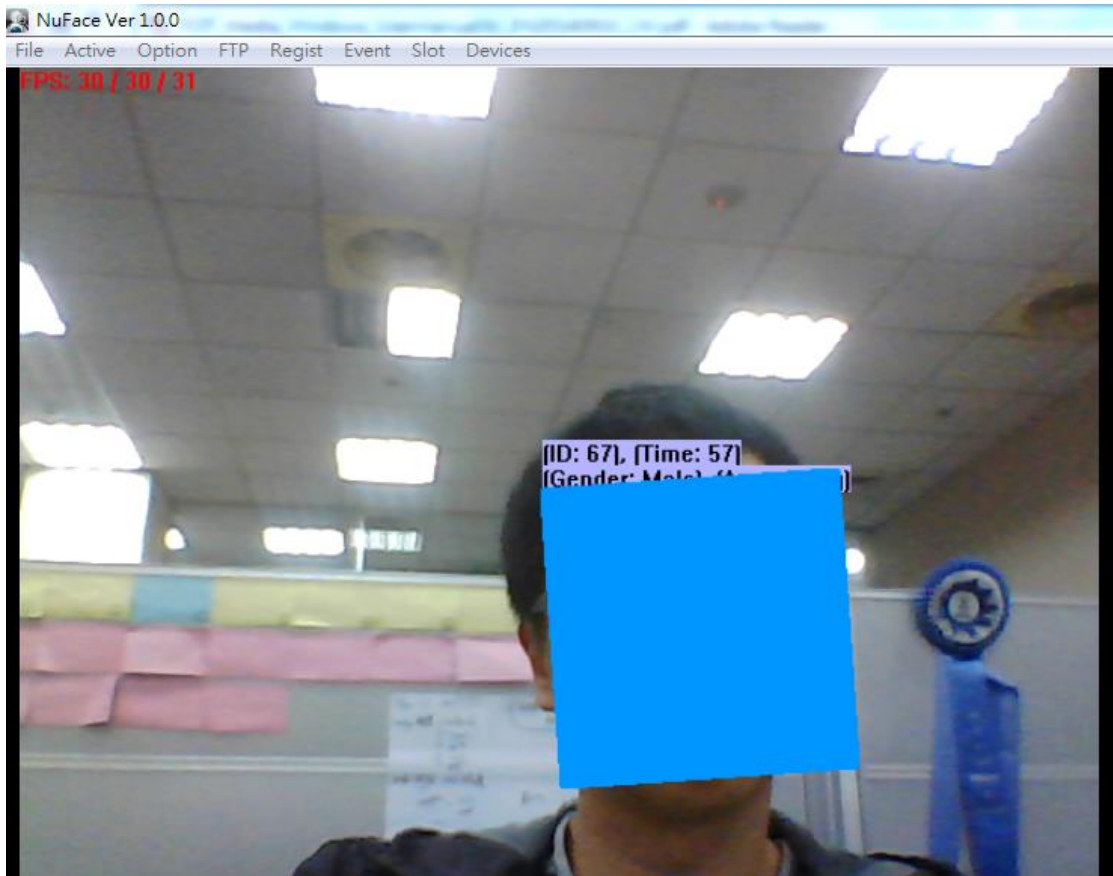
Click “Active” on the function list and enable/disable the feature.



| Feature   | Action                               |
|---|--------------------------------------|
| Start Capture   | Starts the camera capture            |
| Face Detect   | Detects faces shown on the screen    |
| Estimate  | Estimate age and gender              |
| Output log  | Export log file                      |
| Output Face Image   | Export face image                    |
| Face Filter   | Mosaic the faces shown on the screen |
| <b>Default setting: “Start Capture”, “Face Detect”, “Estimate”, “Output Log” are enabled.</b> |                                      |

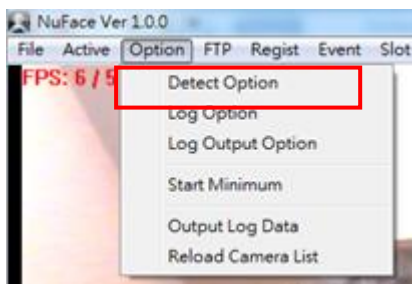
### 3-5-3 Face Filter

Click “Active” on the function list and enable “Face Filter”, the face will be scrambled.



### 3-5-4 Detection Setting

Click "Option" on the function list and select "Detect Option"



The parameter setting will be shown as below:

The screenshot shows a software configuration window titled "Option Box". It is divided into four main sections:

- Detect Setting:**
  - Face Size: 20 (Pixel, range 20 ~ 100)
  - Face Interval: 0 (range 0 ~ 2)
  - Frame Detect Interval: 5 (range 1 ~ 10)
- Timer Setting:**
  - OTS Count: 50 (range 1/100 sec)
  - Viewer Count: 5 (range 1/10 sec)
  - Attention Discard: 5 (range 1/10 sec)
- Record:**
  - ReVisit Time: 600 (range 1/10 sec)
- Loading:**
  - FPS Limit: 30 (range FPS)

At the bottom right, there are "OK" and "Cancel" buttons.

| Parameter                        | Definition and Description  | Scale  | Default |
|----------------------------------|---|--------|---------|
| Face Size                        | The minimum face resolution to be detected.   | 20-100 | 20      |
| Face Interval                    | The allowed tolerance of distance between viewers. The smaller the value, the closer the distance between two faces that can be detected and vice versa.  | 0-2    | 0       |
| Frame Detect Interval            | The parameter is to set the number of frames between each identification. The default setting of "5" means 5 frames between each identification. The larger the value, the lower the loading time, but with a slower refresh on screen. | 1-10   | 5       |
| OTS Count (1/10 seconds)         | Determines the opportunity-to-see by setting up a minimum viewing time  | 0-999  | 5       |
| Viewer Count (1/10seconds)       | Determines a qualified viewer by setting up a minimum viewing time.   | 0-999  | 5       |
| Attention Discard (1/10 seconds) | The allowable time determining a non-view   | 0-999  | 5       |

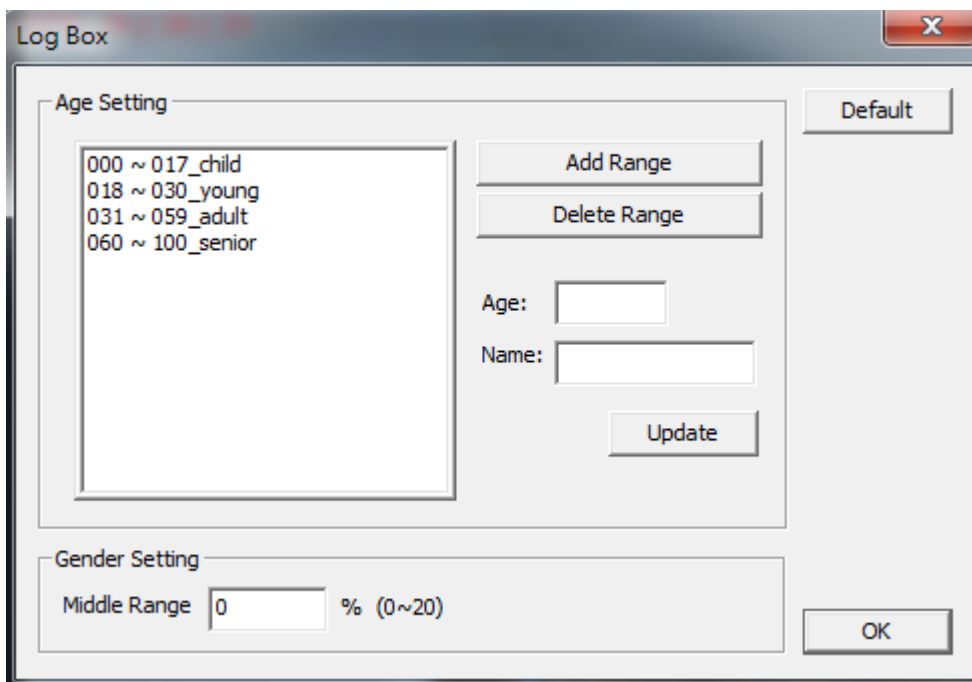
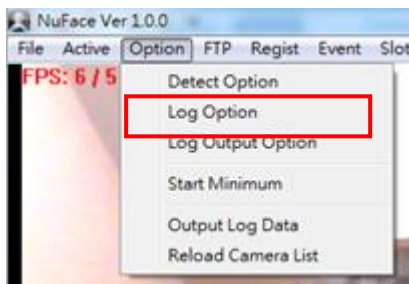


1 OTS stands for opportunity-to-see. OTS is used for defining the audience that has been detected with/without age/gender estimation.

2 Viewer is used for defining the audience whose age/gender has been estimated and viewing time is sufficient.

### 3-5-5 Age Range Setting

Click “Option” on the function list and select “Log Option” to set the range of age.



Click Default to restore te default system settings.

Default Age Setting

| Age   | Bracket Name |
|-------|--------------|
| 0-17  | Child        |
| 18-30 | Young        |

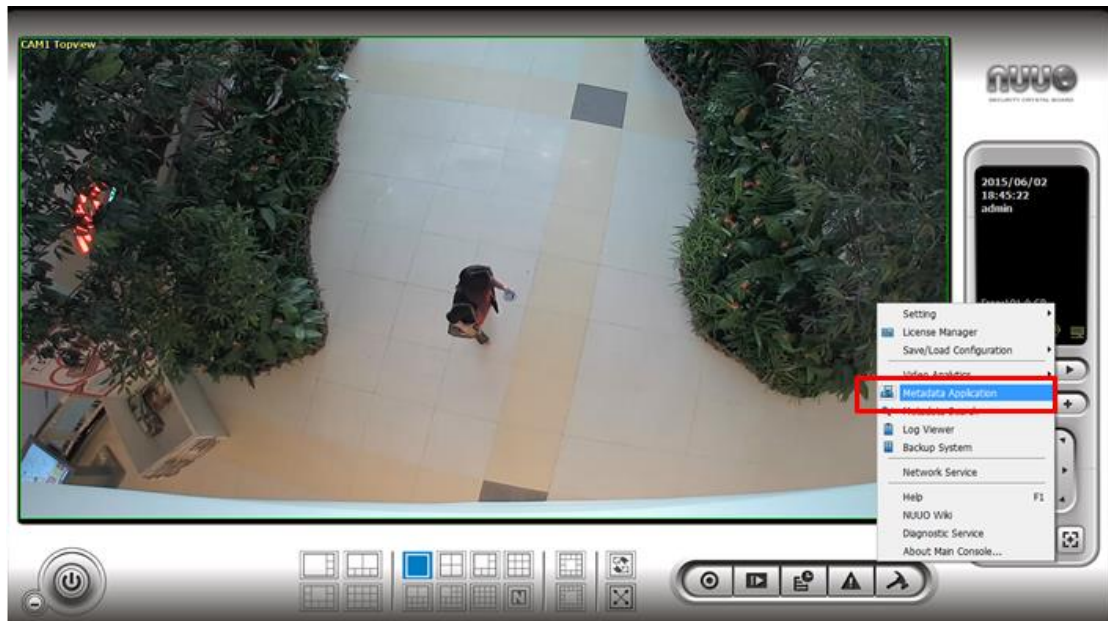
|        |        |
|--------|--------|
| 31-59  | Adult  |
| 60-100 | Senior |

Parameter

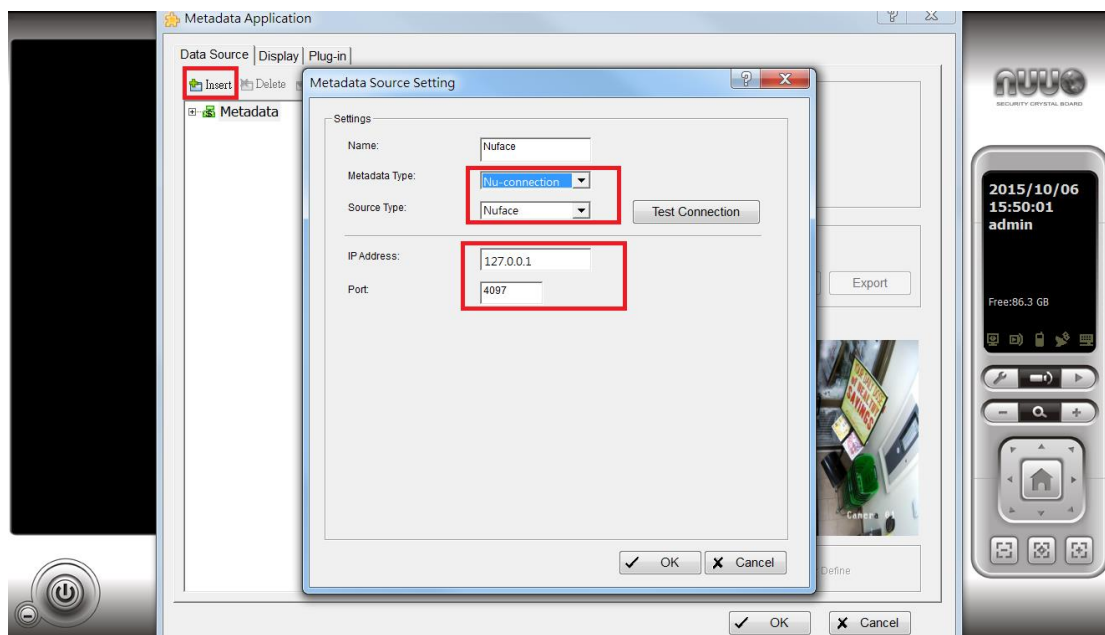
| Parameter    | Definition and Description  | Scale | Default |
|--------------|---|-------|---------|
| Middle Range | Neutral gender range: the higher the scale, the greater the range for neutral gender allowance. | 0-20  | 0       |

## 4. Metadata connection guide (Mainconsole)

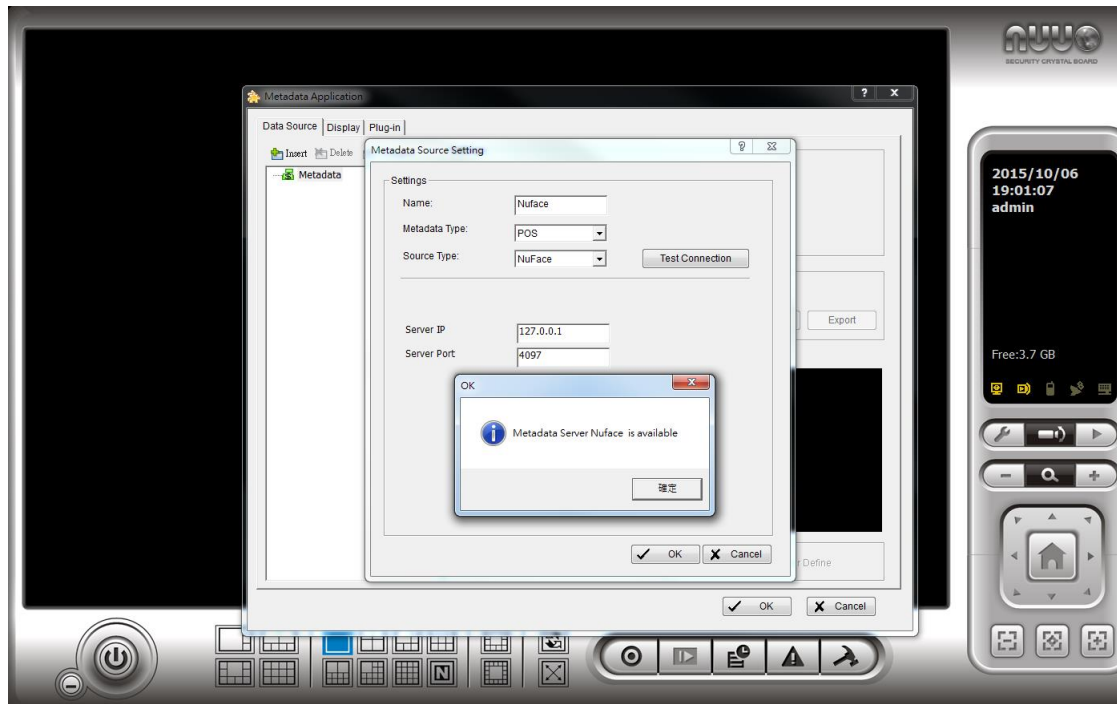
1. Open NUUO Main Console, go to General Setting> Metadata Application



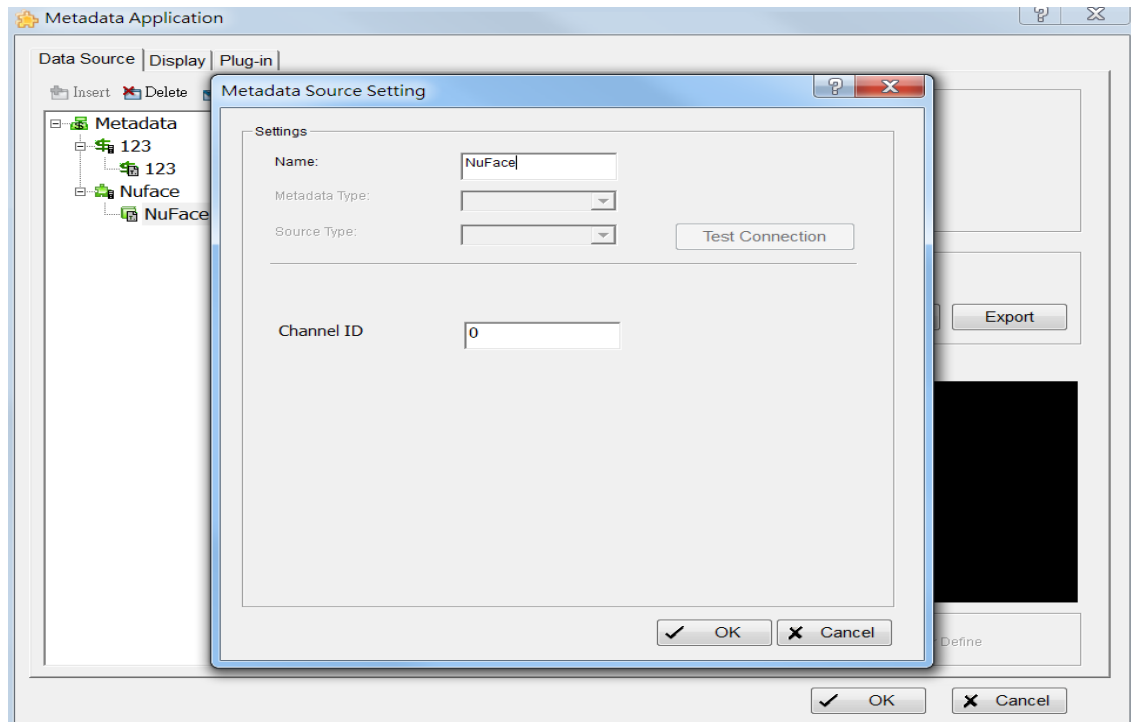
2. Click on “Insert” to add new source; the Metadata type is Nu-connection, the source type should be Nuface, the port for NuFace is “4097”.



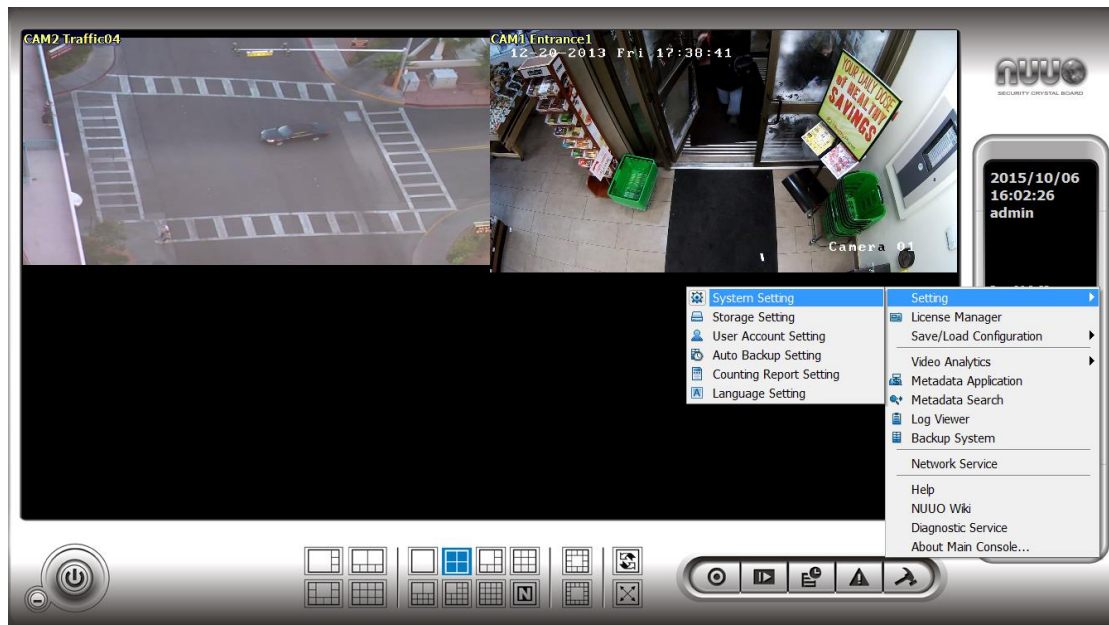
### 3. Test connection



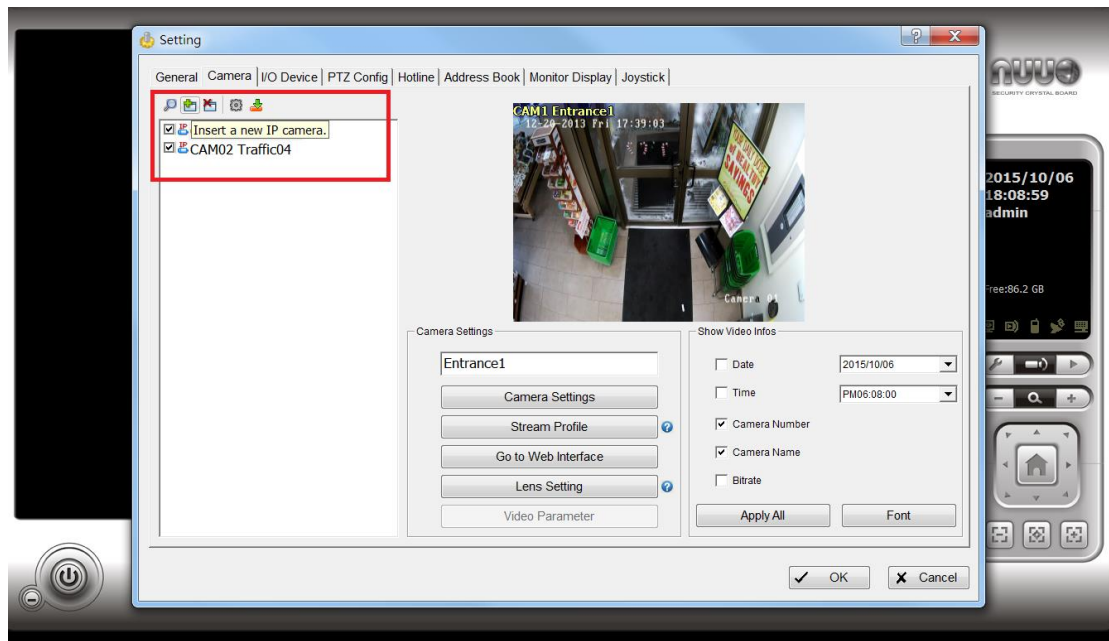
### 4. Go to Metadata Source Setting page and enter the Channel ID correspond to the related Camera



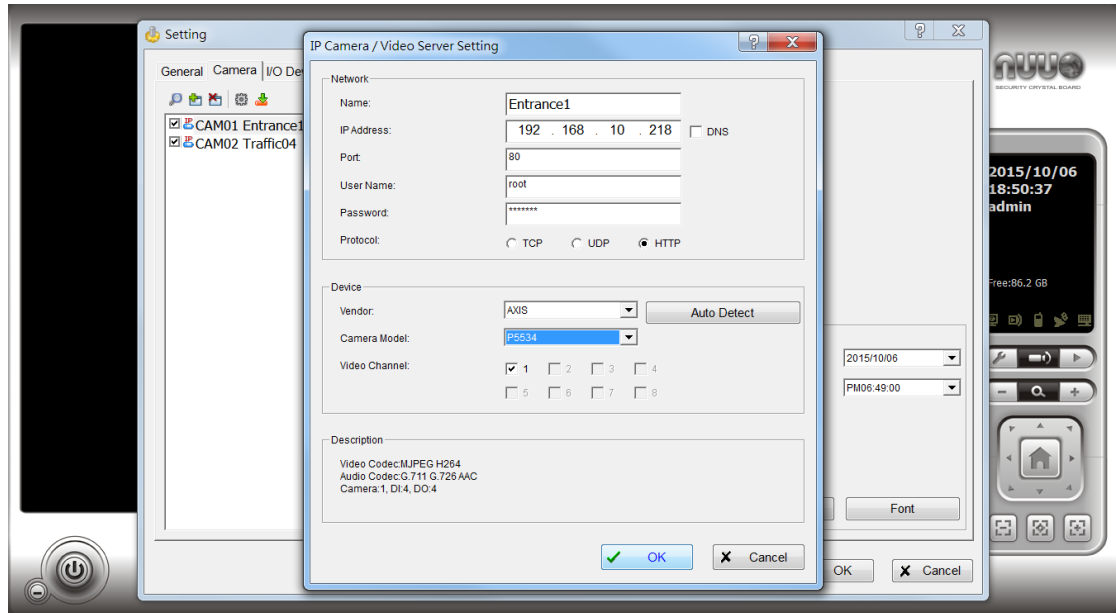
5. Back to Main page › Go to General Setting > Setting > System Setting



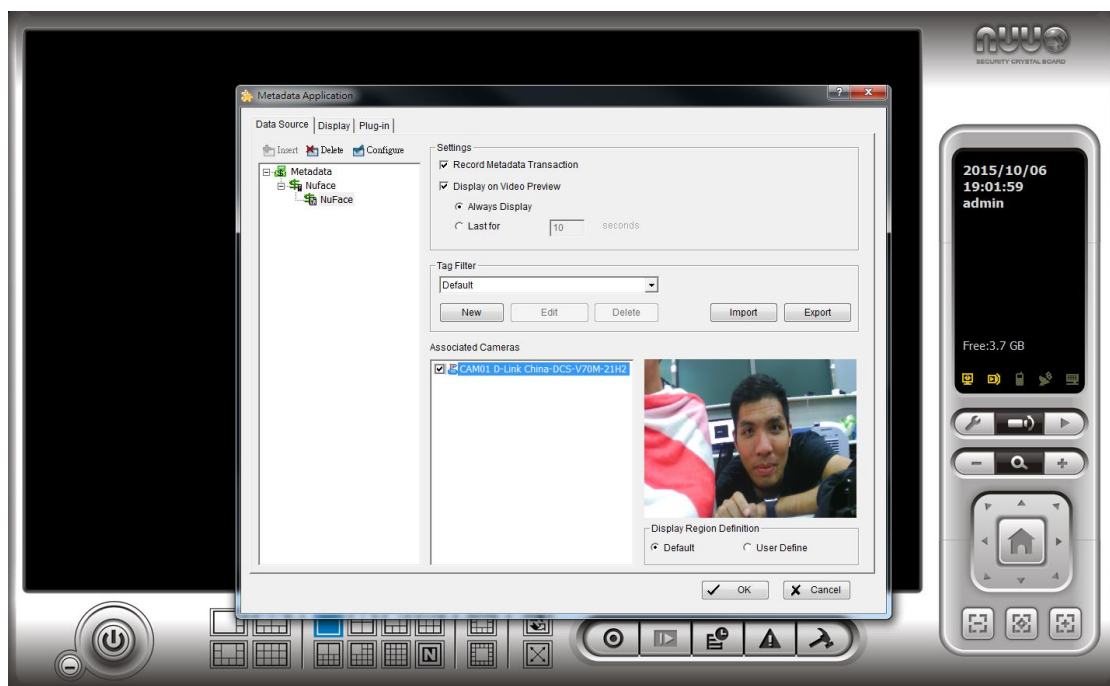
6. Select Camera > Insert a new IP camera



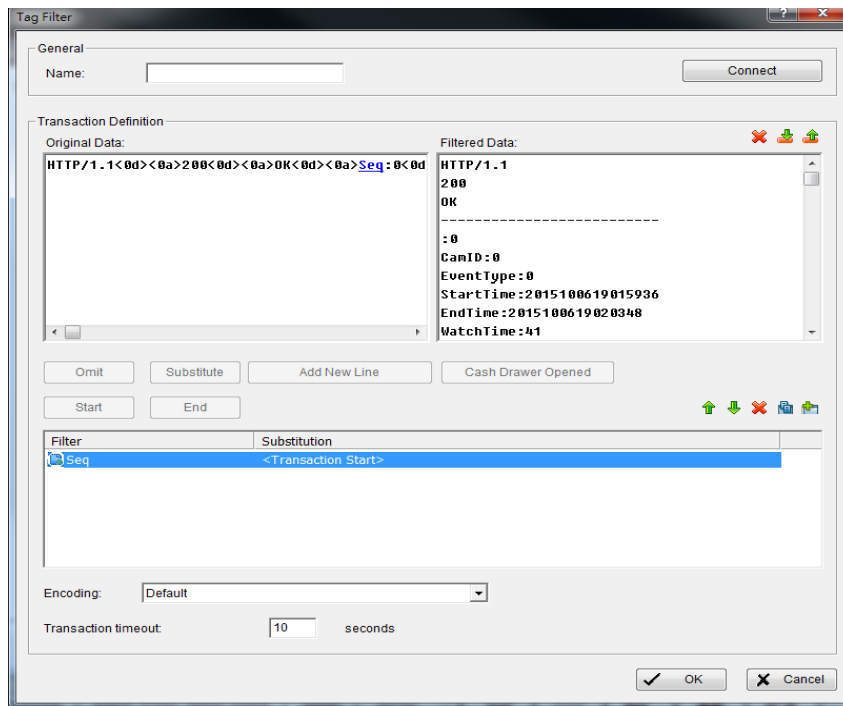
7. Enter IP Cam's IP address 、 port 、 user account 、 password 、 customize name, please also select the IP CAM's manufacturer and model name .



8. Go back to Metadata application page , select the IP camera you just added and choose the Nuface Filter accordingly .



9. Enter a customize name for Nuface , press “ OK” and choose the new build data filter in the metadata filter list .

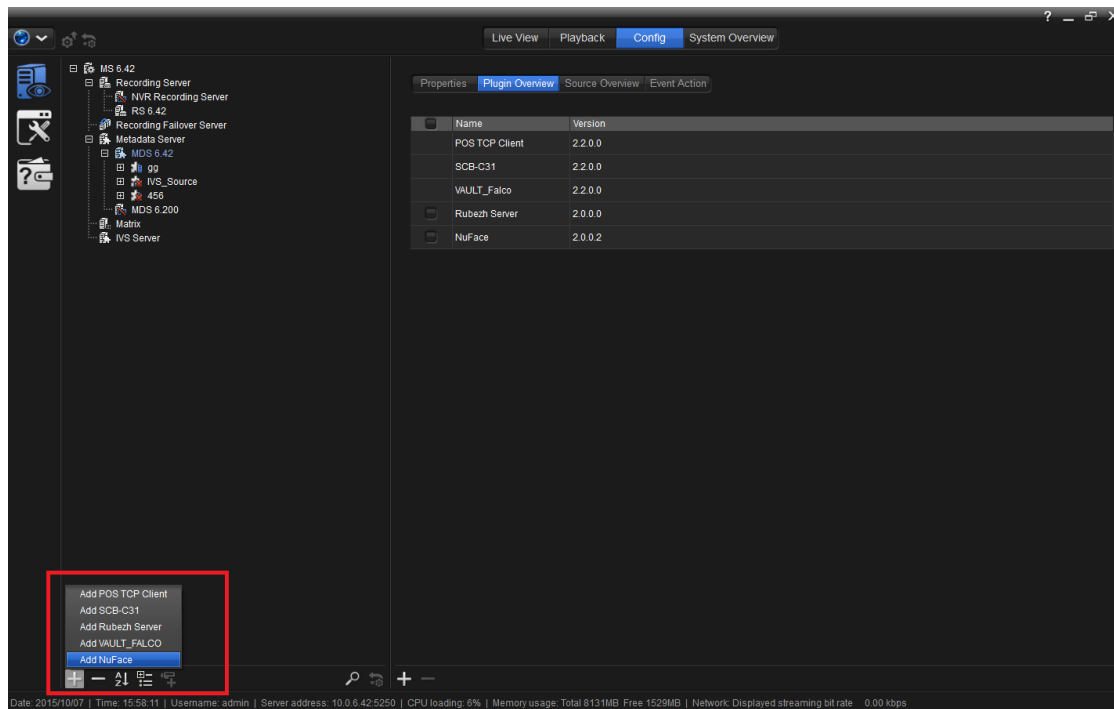


10. Go back to Main Page, the Nuface Metadata will show up in the screen if the link is successful.



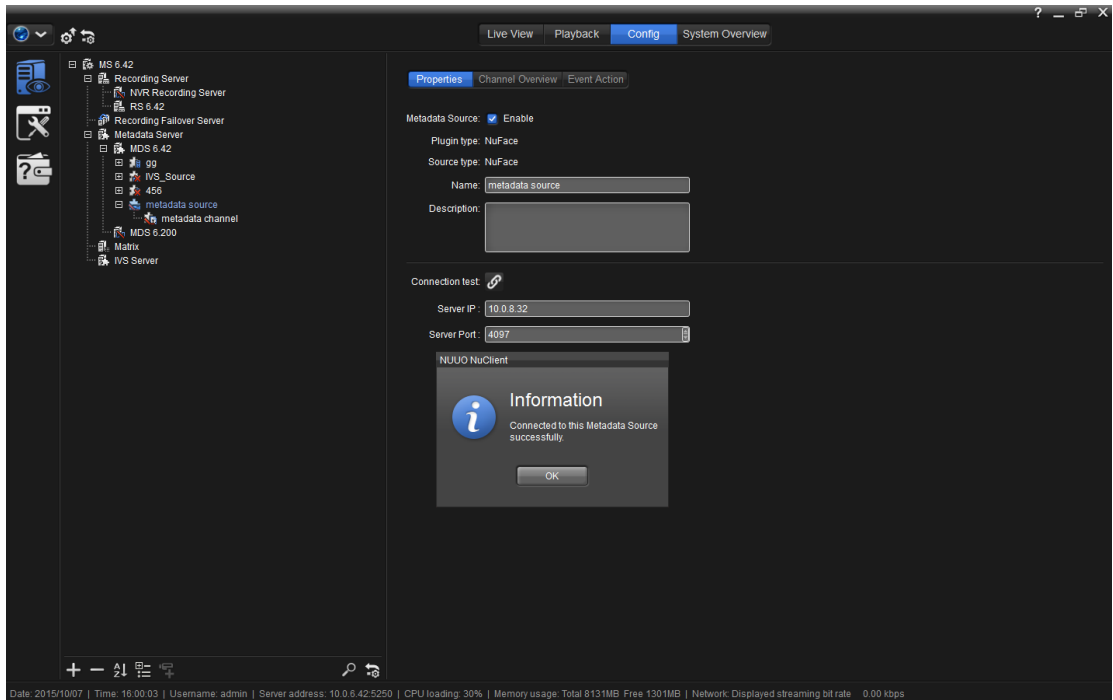
## 5. Metadata Connecting Guide (Crystal )

1. Download “NUUO\_Nuface\_Plugin.zip” from NUUO Website.
2. Upload “NUUO\_Nuface\_Plugin.zip” to Metadata Server.
3. Click on “Add NuFace” to add new source

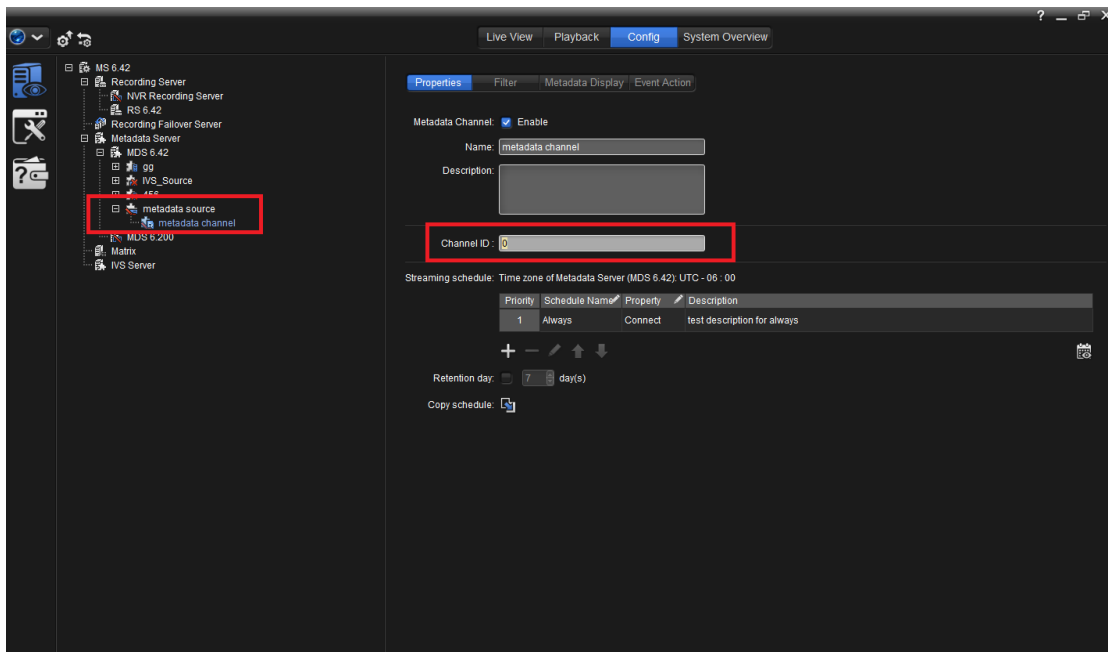


4. Go to metadata source > Properties, enter Server IP ( Nuface software’s IP address ) , the port for NuFace is “4097”, then press “Connection test” to make sure the connection is alive.



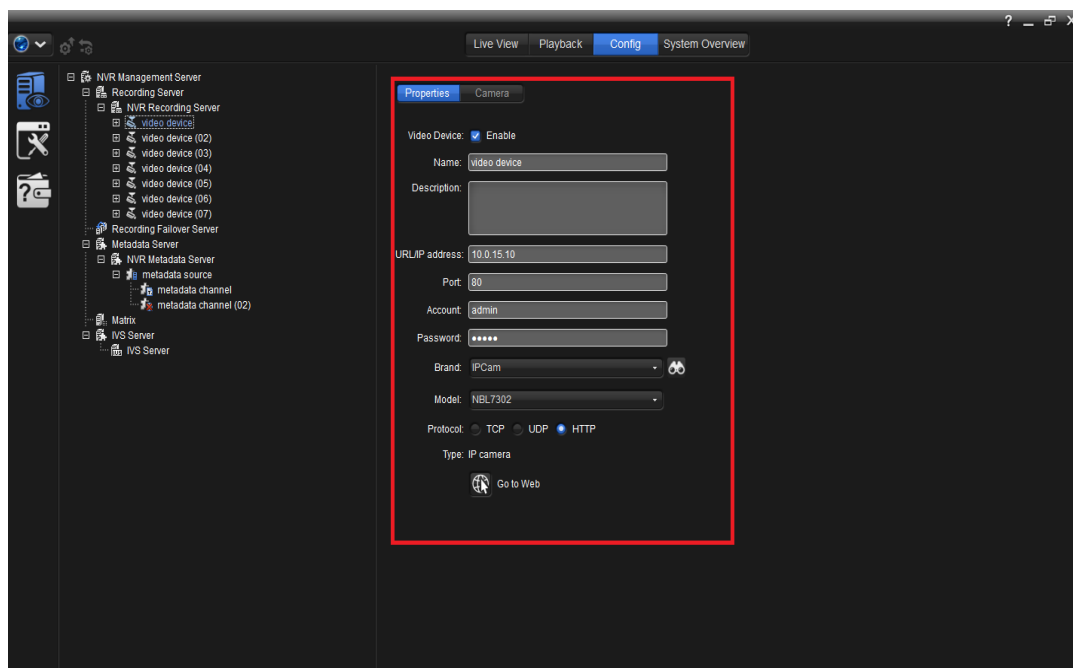


5. Add metadata channel, go to properties and enter Channel ID accordingly. (Ex : First will be 0 , second will be 1, etc ... )

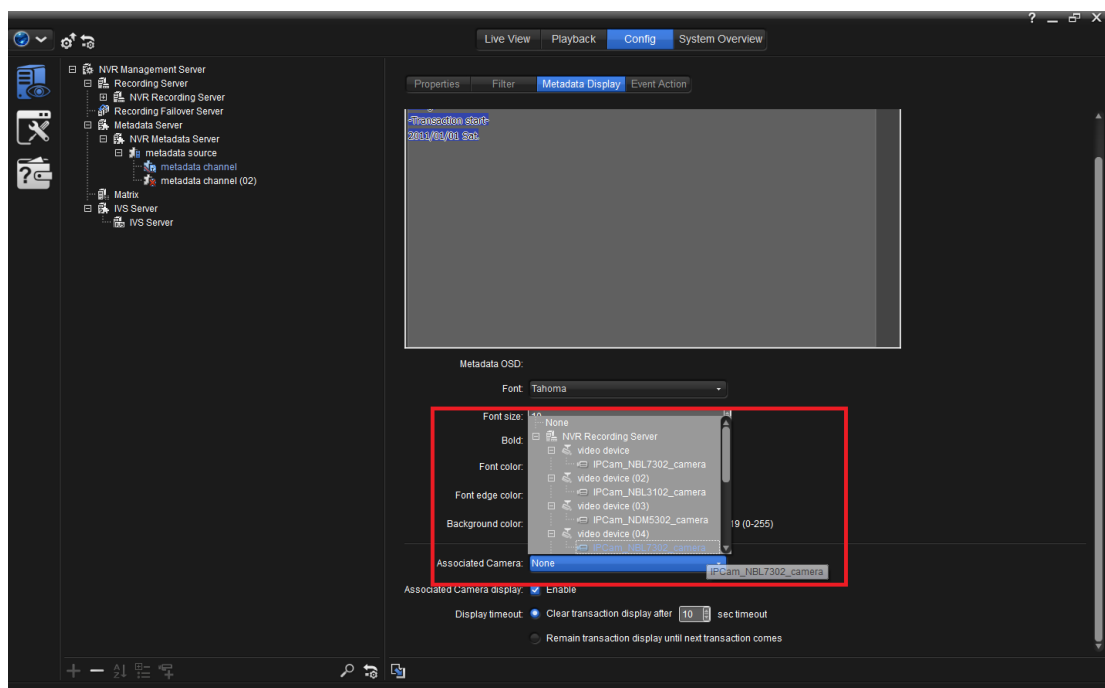


6. Select Camera > Enter IP Cam's IP address 、 port 、 user account 、

password , customize name, please also select the IP CAM's manufacturer and model name .

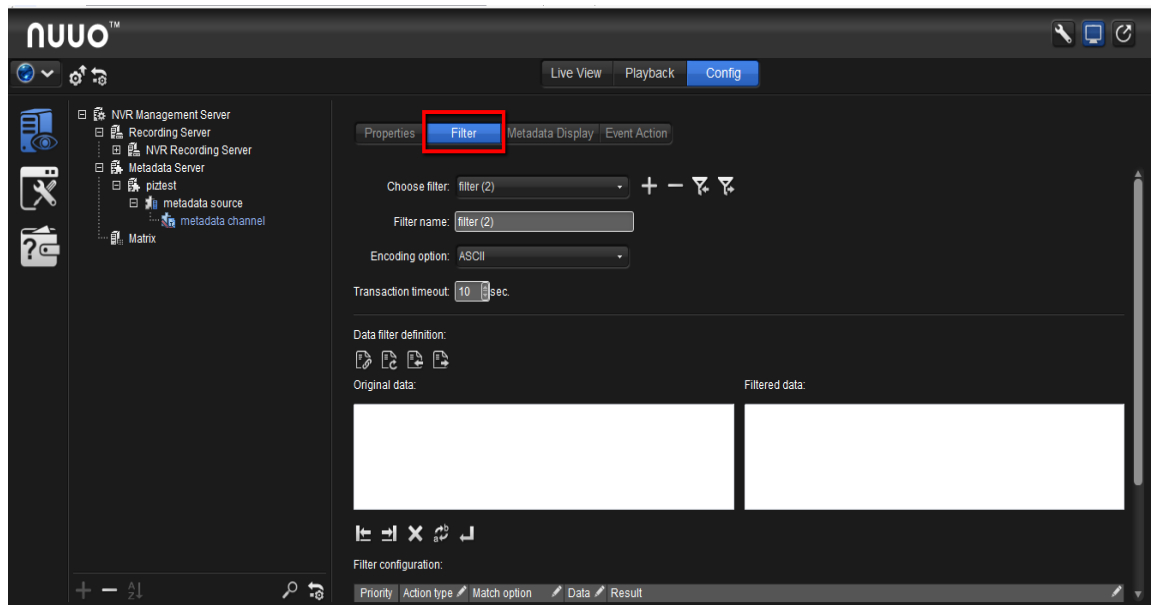


7. Go back to Metadata application page > Metadata Display , select the IP camera you just added related to the metadata .



8. Enter a customize name for Nuface , press " OK" and choose the new

build data filter in the metadata filter list .



9. Go back to Main Page, the Nuface Metadata will show up in the screen if the link is successful.

