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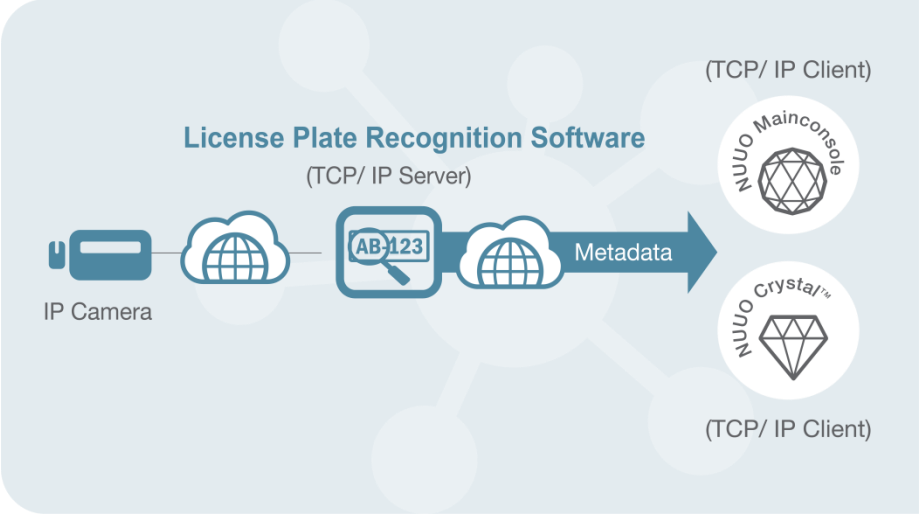
I. License Plate Recognition Solution

Furthering its dedication to be a top Video Surveillance solution provider, NUUO is pleased to announce its new strategic partnership with Neural Labs, a globally recognized ANPR software provider.

NUUO and Neural Labs are now working together to provide the most cutting edge ANPR solutions for under both NUUO Crystal™ and NUUO Mainconsole (NVR IP+, Hybrid NDVR, and DVR card) platforms. The suite ensures that our clients always have access to the most advanced LPR solution in the market.

A. System Architecture

Neural Labs VAPR server automatically captures the license plate in real time and sends the metadata to NUUO metadata server, with this information, the user can create a pre-defined Blacklists and Whitelists list and take appropriate actions such as opening a gate or generating an alert.



B. Compatible Versions

Neural Labs Version	Product	Server Version	Client Version	Plugin Version
VPAR Server v.2.9.8.2 with Engine v.7.5.1.0	Crystal™	v.3.8.0	v.3.8.0	v.2.3.0.0
	Mainconsole	All	All	v.2.3.0.0

II. Neural Labs VPAR Installation

A. Trial Version

For trial, please contact USA@NEURALLABS.NET for further technical support.

B. Neural Labs VPAR Server Set-up

Please refer to the page 15 of VPAR_SERVER_User_Manual_EN.pdf for details.

III. NUUO Server Configuration

A. Crystal™

a. To use this feature, please upgrade your Crytal™ Server to v.3.8.0. The plugin for Neural

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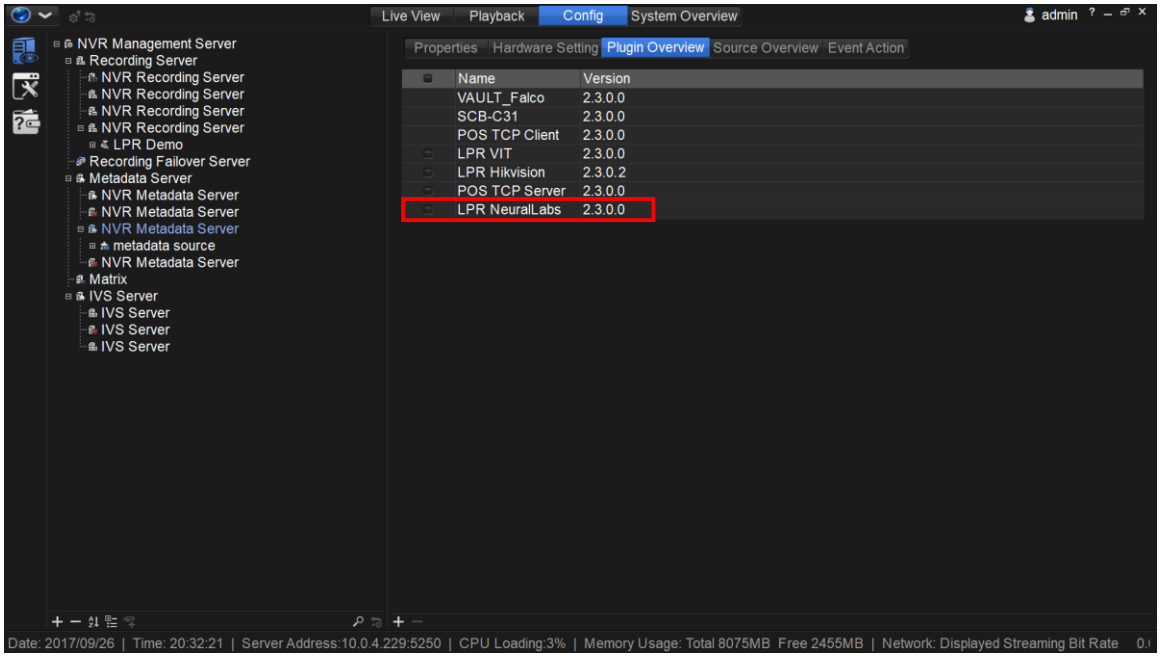
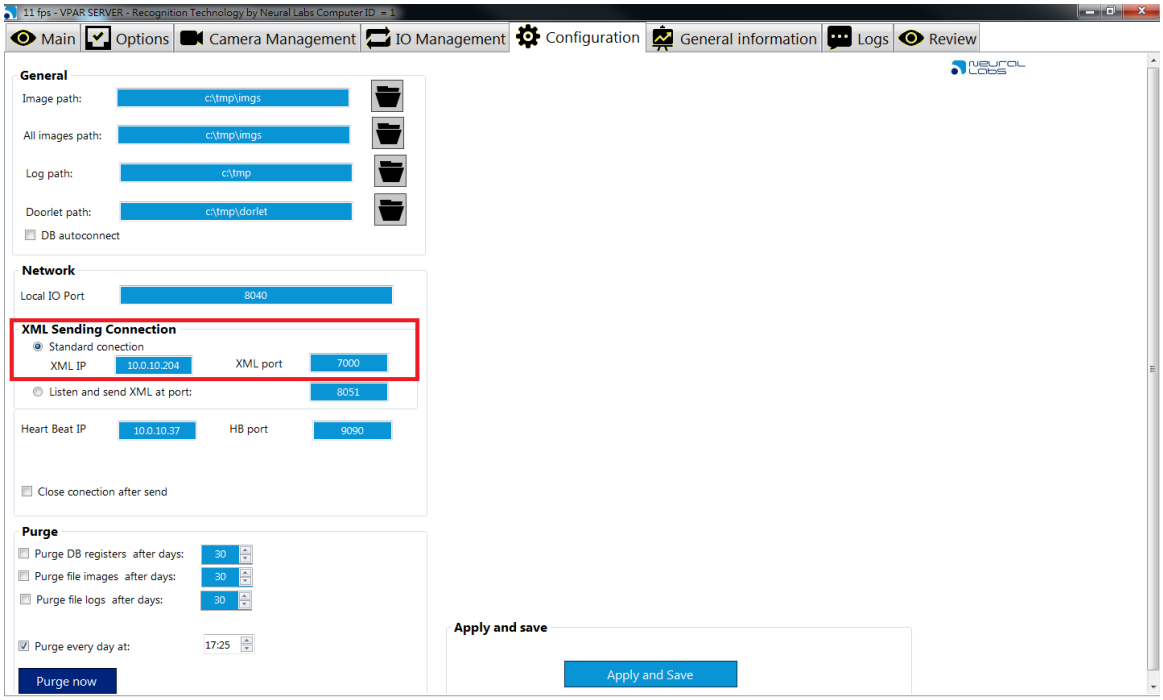
Labs LPR System has been included as default which can be found in the "Plugin Overview" tab.



b. Open the Neural Labs VPAR Server and input the IP address of Crystal™ server and assign an available port in Configuration > XML Sending Connection.



Notice:

- *Metadata Server Port: Please make sure you assign an available "Server Port" for receiving the metadata from Neural Labs LPR. Using occupied port may lead to receive unnecessary metadata from other metadata source.*

c. *Add a metadata source of Neural Labs LPR and input the assigned port.*

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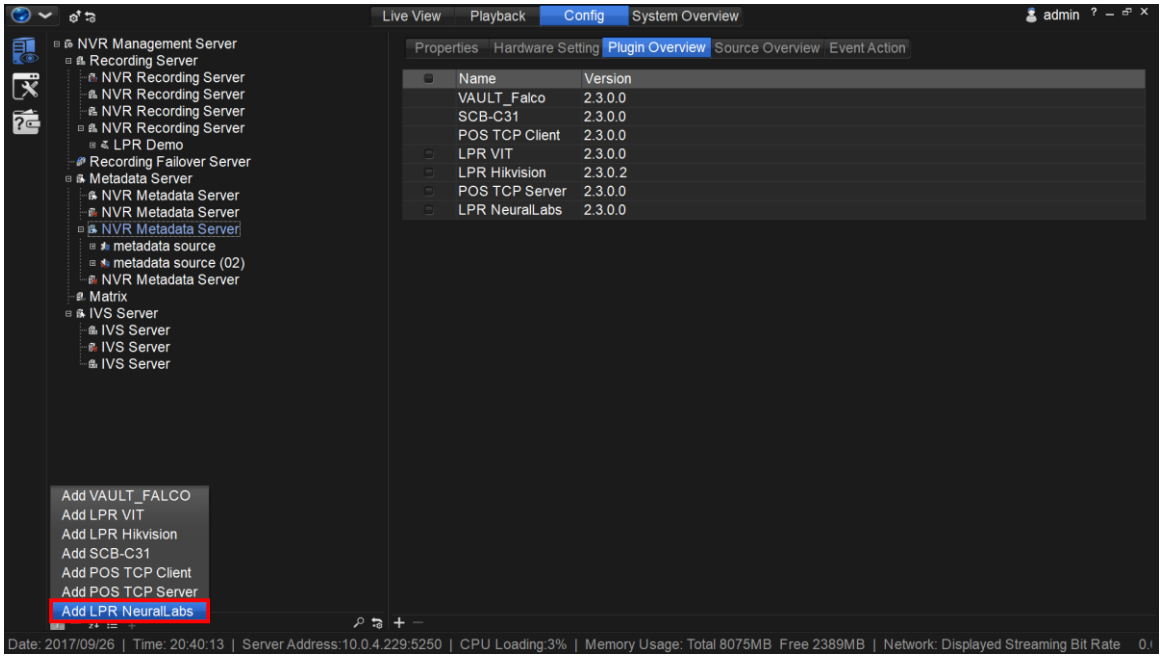

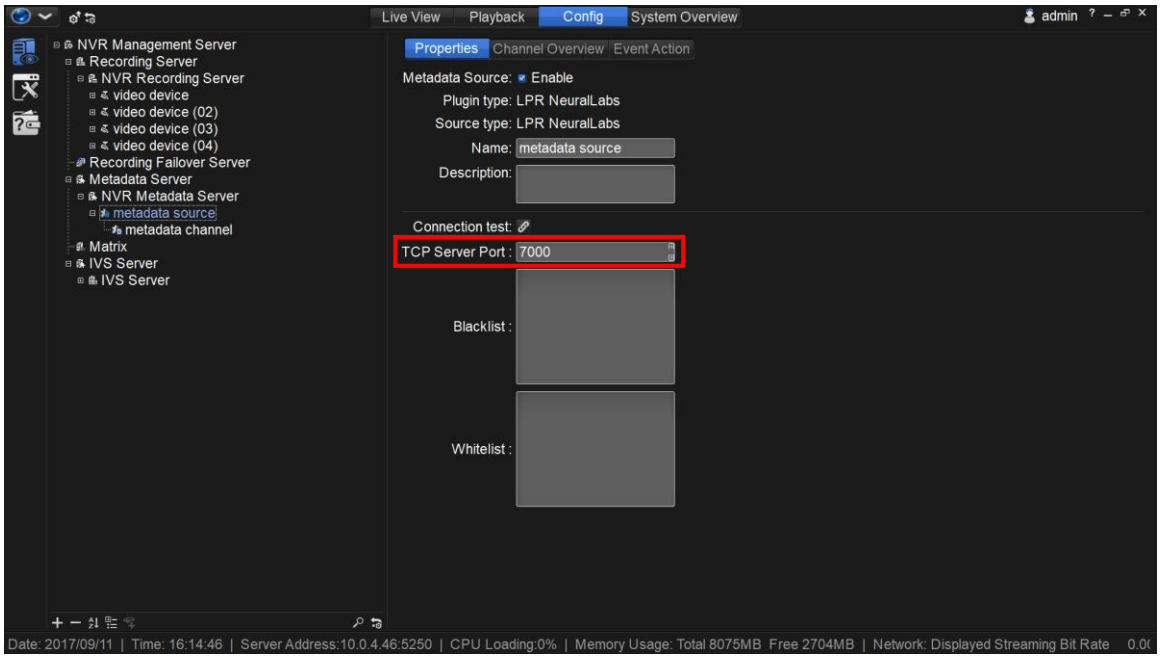

d. Users can add corresponding metadata channels and define “Camera ID” for receiving the detection results from multiple channels. (The ID of a camera is defined by Neural Labs VPAR system and can be found in Camera Management > Select Camera > ID)

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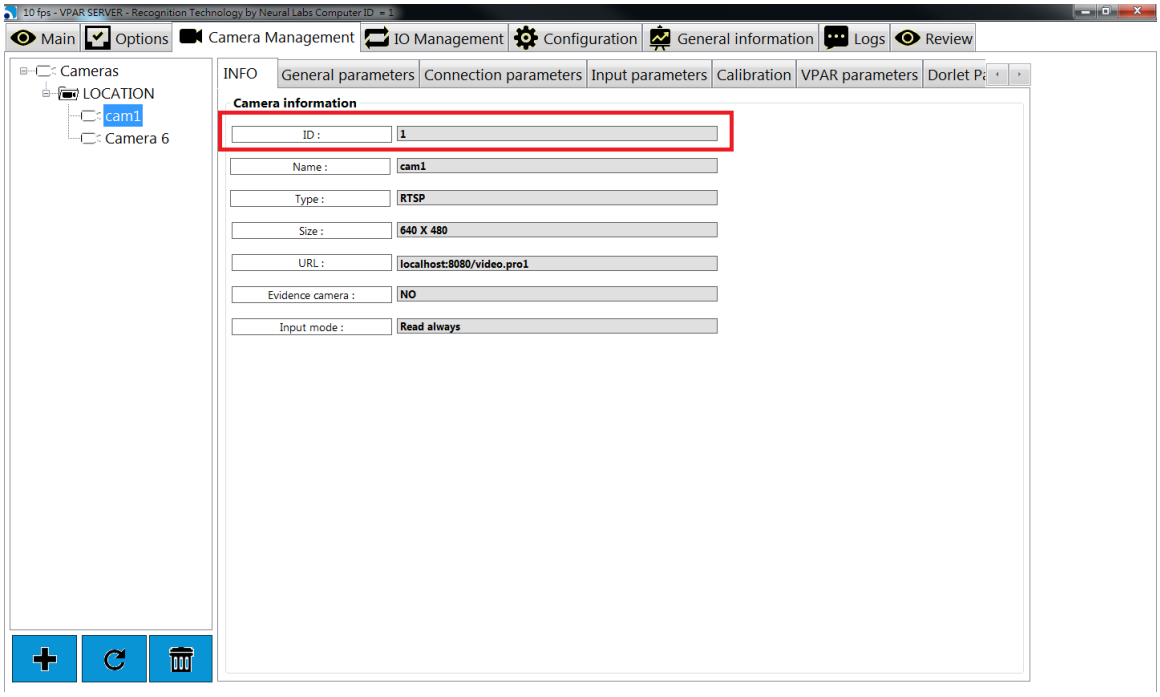

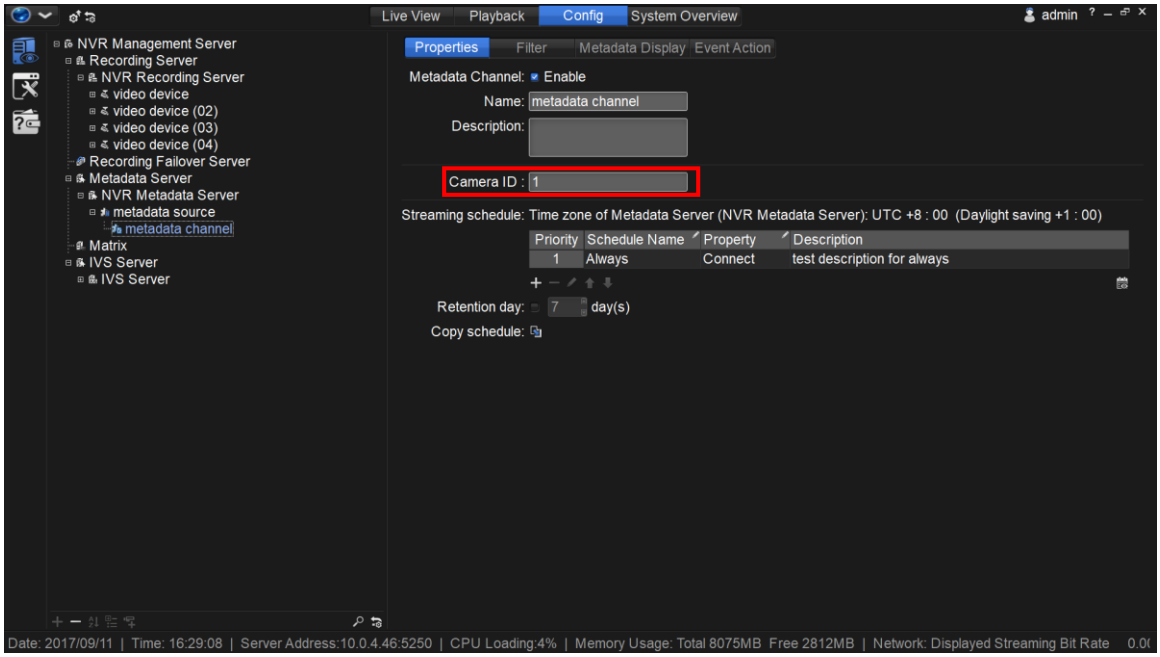

e. For Blacklist and Whitelist applications, input the relevant license plate numbers into the blacklist and whitelist column in the "Properties" tab. All the metadata channels under the metadata source will share the same blacklist and whitelist for flexible system design. Then, setup a specific action for blacklist or whitelist by User Defined Event in metadata channel > Event Action and modify the text of the event condition to "InBlacklist" or "InWhitelist" (Please use the correct case for each letter. The comparison is case-sensitive). Once set-up is complete, the Crystal Server will automatically compare the receiving license plate numbers with those in the list and do instant responses. (The character limit of each list is up to 250,000 characters)

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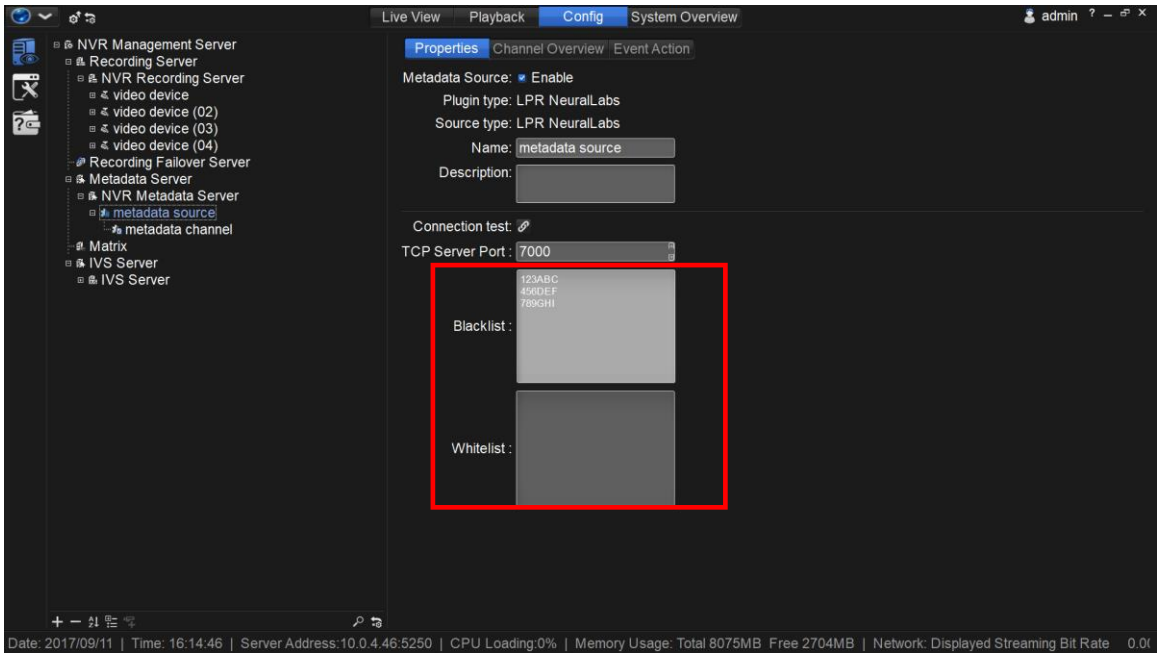

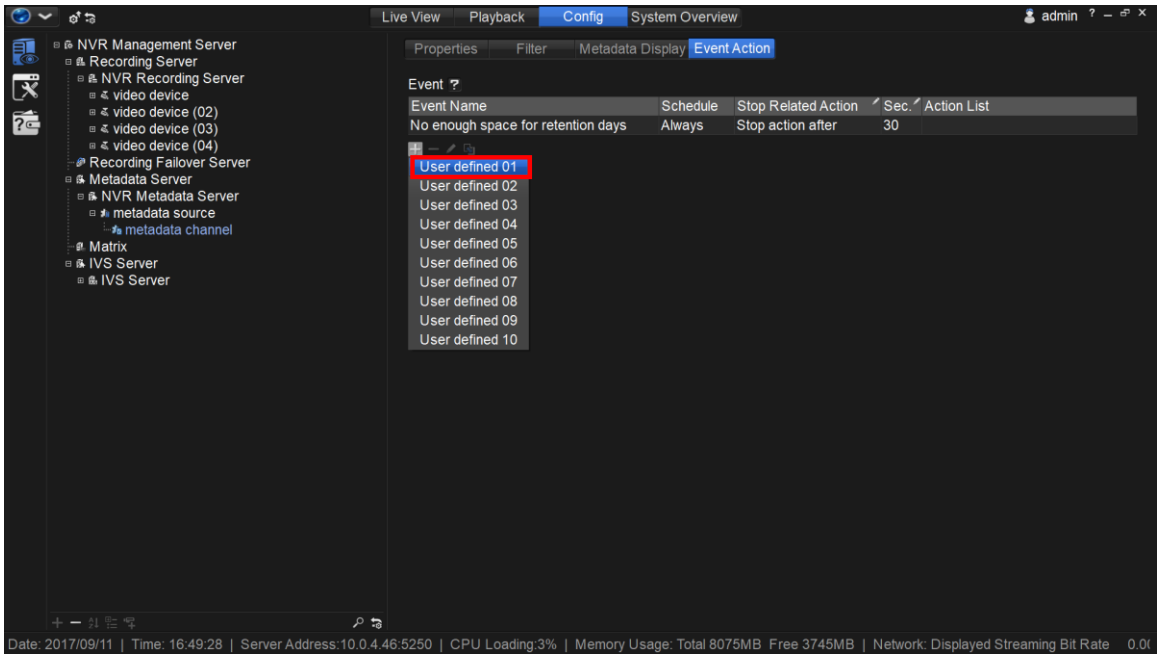

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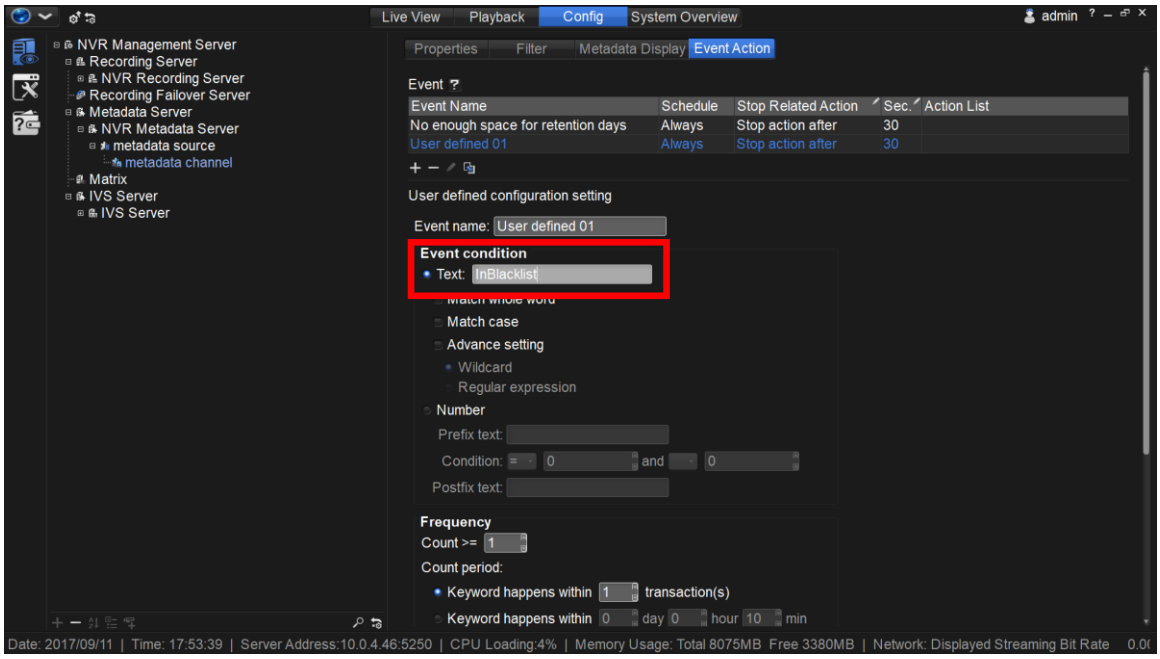

Note:

- *Please make sure you upgrade the client version to 3.8.0.*
- *For blacklist and whitelist, please use the correct case for each letter (The comparison is case-sensitive) and spilt them by new line.*
- *Please make sure you setup both start and end in the filter for the system to define a complete detection result.*

B. Mainconsole

a. To use this feature, please download and put the .dll plugin file for Neural Labs LPR System into the corresponding installation directory. For 32bit Mainconsole, please download the 32bit .dll plugin file and put it into the C:\Program Files (x86)\NUUO\SCB_IP\PluginPack\MetadataModelLPRNeuralLabs. For 64bit Mainconsole, please download the 64bit .dll plugin file and put it into the C:\Program Files (x86)\NUUO\SCB_IP\x64\PluginPack\MetadataModelLPRNeuralLabs.

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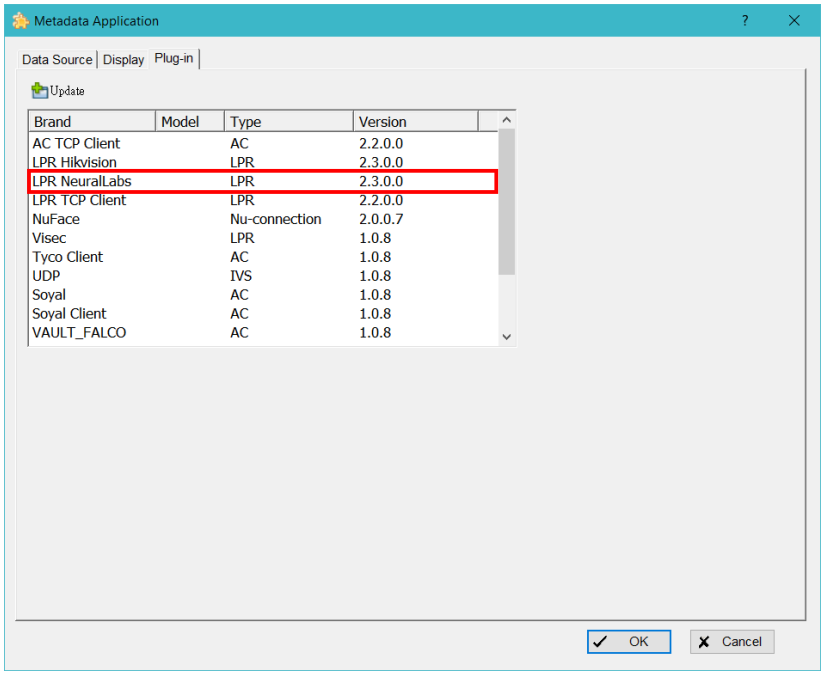
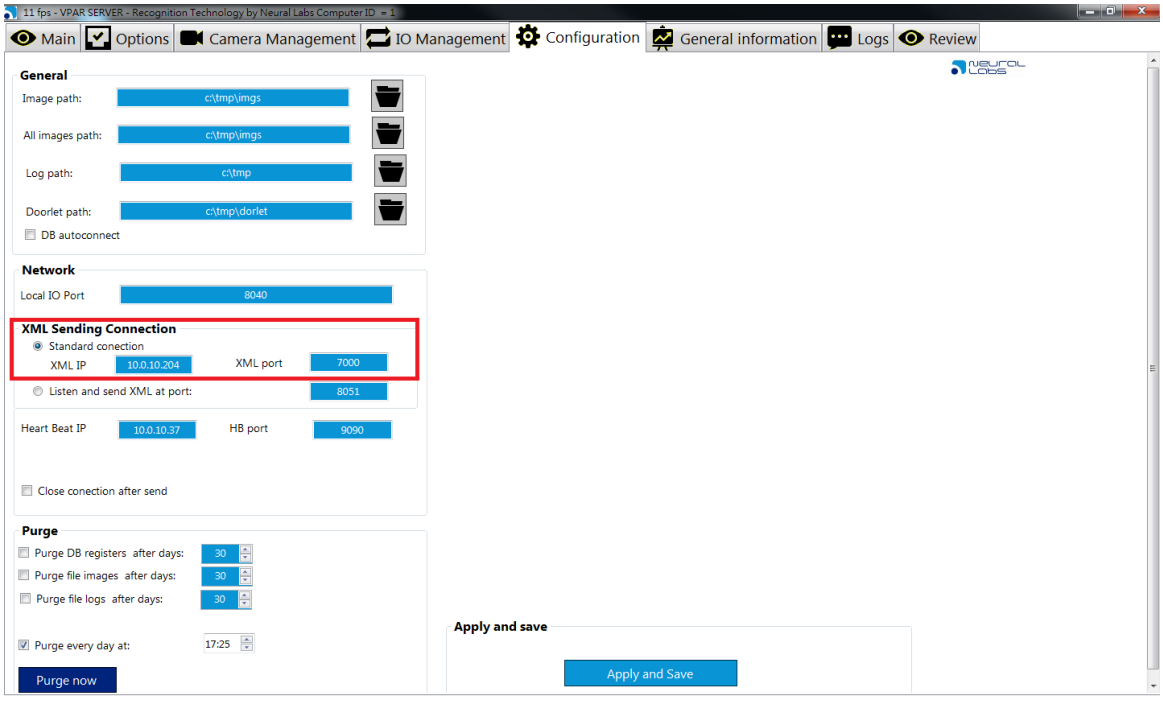


b. Open the Neural Labs VPAR Server to input the IP address of Mainconsole server and assign an available port in Configuration > XML Sending Connection.



Notice:

- *Metadata Server Port: Please make sure you assign an available "Server Port" for receiving the metadata from Neural Labs LPR. Using occupied port may lead to receive unnecessary metadata from other metadata source.*

c. Add a metadata source of Neural Labs LPR and input the assigned port.

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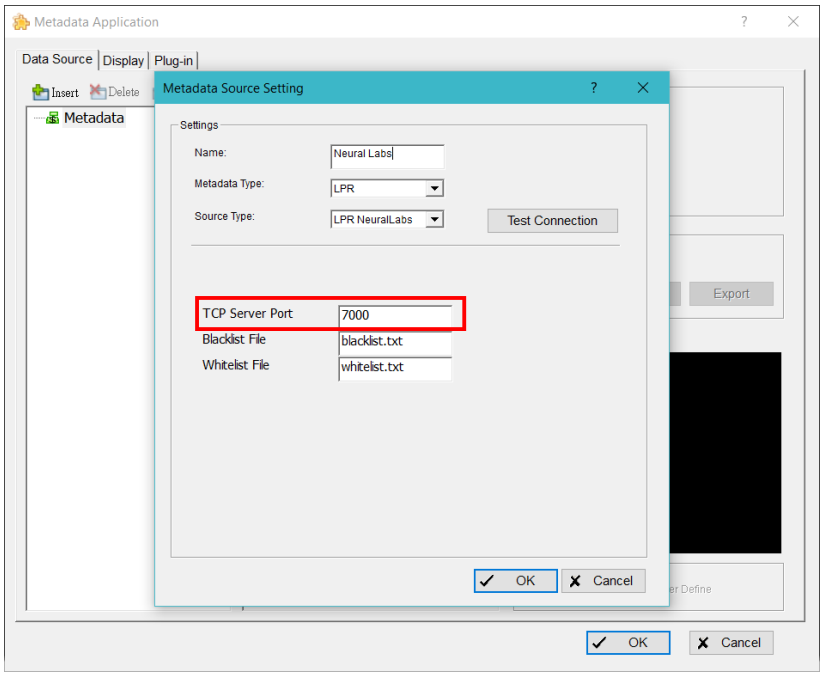
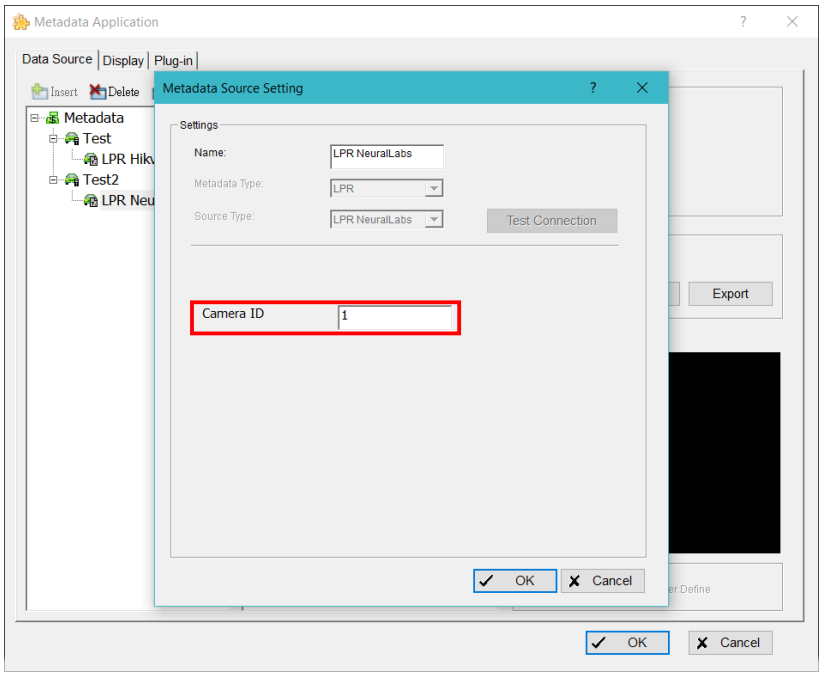


d. Users can add corresponding metadata channels and define “Camera ID” for receiving the detecting results from multiple channels. (The ID of a camera is defined by Neural Labs VPAR system and can be found in Camera Management > Select Camera > ID)



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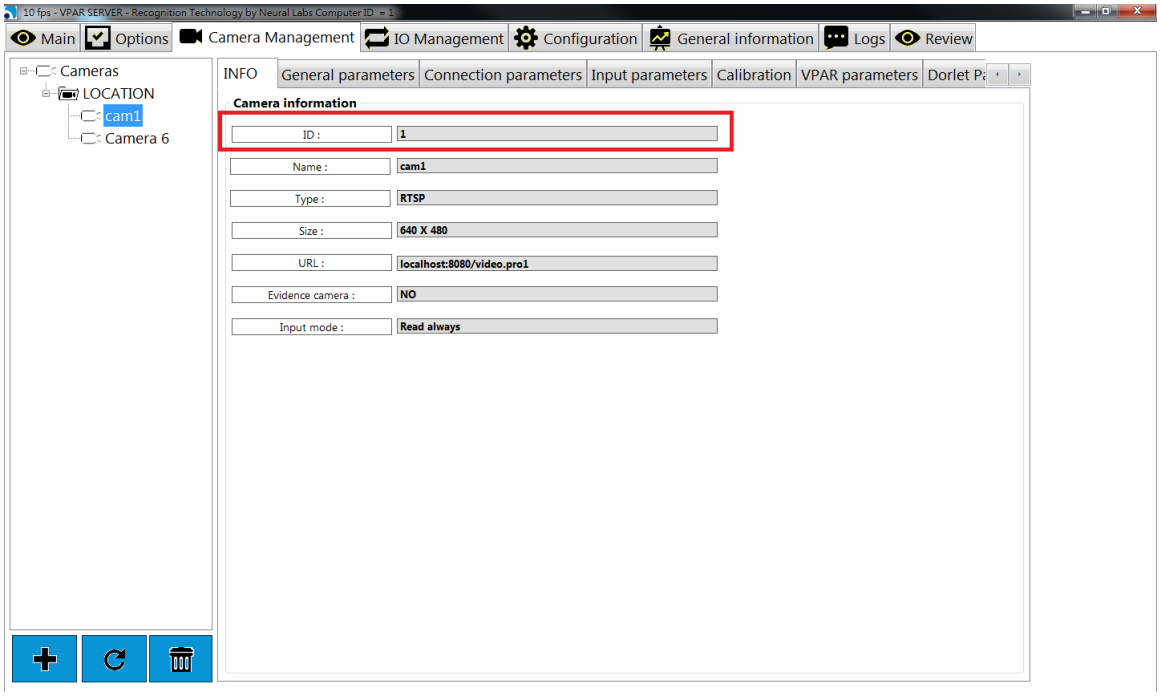

e. For Blacklist and Whitelist applications, create and input relevant license plate numbers into a blacklist and whitelist .txt file and put the files into the corresponding plugin installation folder (C:\Program Files (x86)\NUUO\SCB_IP\PluginPack\MetadataModelLPRNeuralLabs 32bit or C:\Program Files (x86)\NUUO\SCB_IP\x64\PluginPack\MetadataModelLPRNeuralLabs for 64bit). Then, setup a specific action for blacklist or whitelist by User Defined Event in Smart Guard > 3rd Party LPR Event > Event Action and modify the text of the event condition to “listType=blacklist” or “listType=whitelist” (Please use the correct case for each letter. The comparison is case-sensitive). Once set-up is complete, the Mainconsole will automatically compare the receiving license plate numbers with those in the list and do instant responses. (The character limit of each list is up to 1,000,000 characters)

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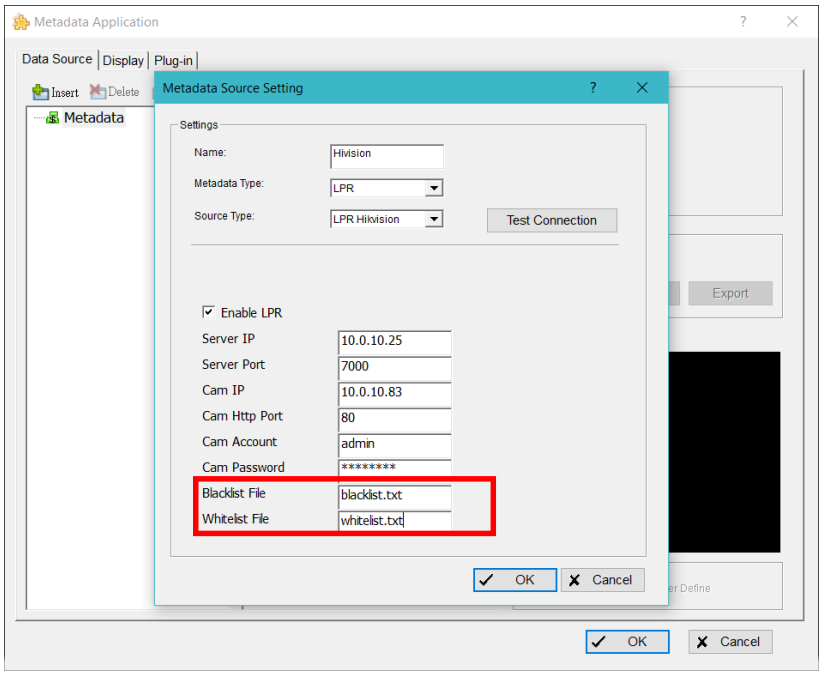

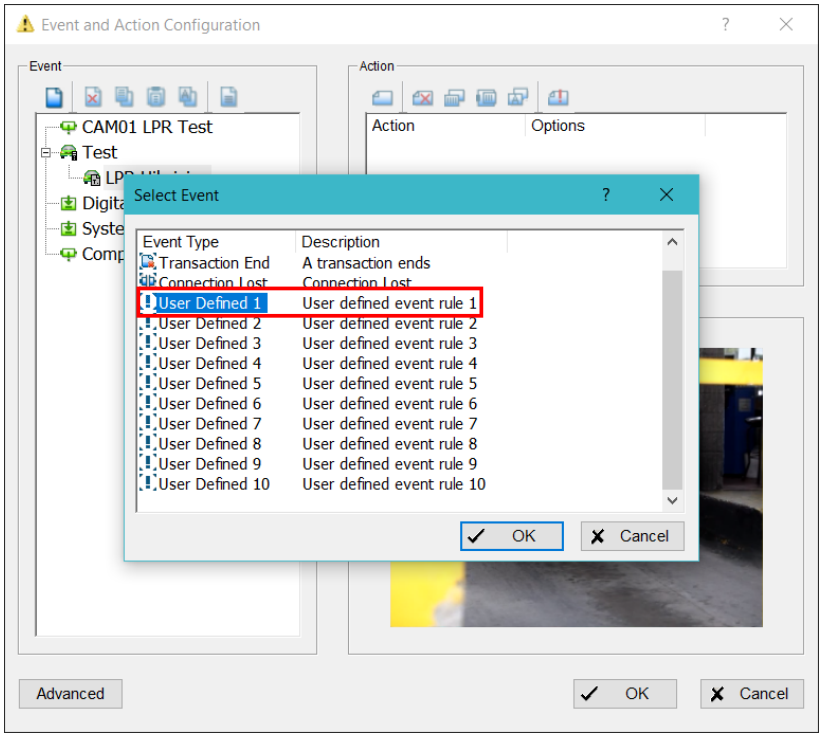

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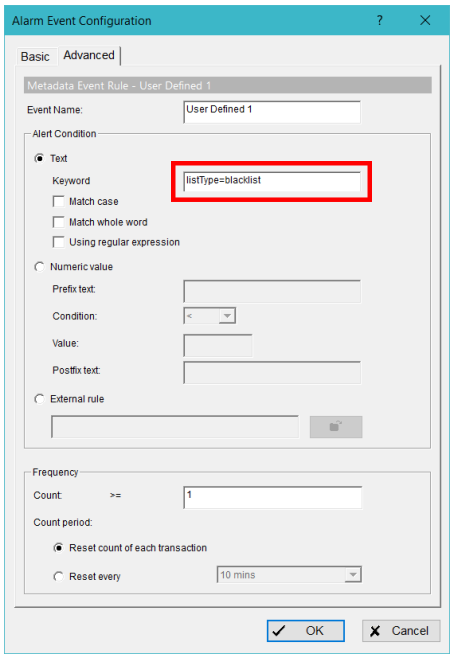

Note:

- *For blacklist and whitelist, please use the correct case for each letter (The comparison is case-sensitive) and spilt them by new line.*
- *Please make sure you setup both start and end in the filter for the system to define a complete detection result.*

C. Metadata Display

The plugin will receive the .xml file sending from the NeuralLabs VPAR Server, and transform the data into a human readable format displayed in the interface of NuClient and Mainconsole as pictured below. Users can omit those unwanted data by setting the regular expression in metadata channel > Filter (Crystal/ Mainconsole).

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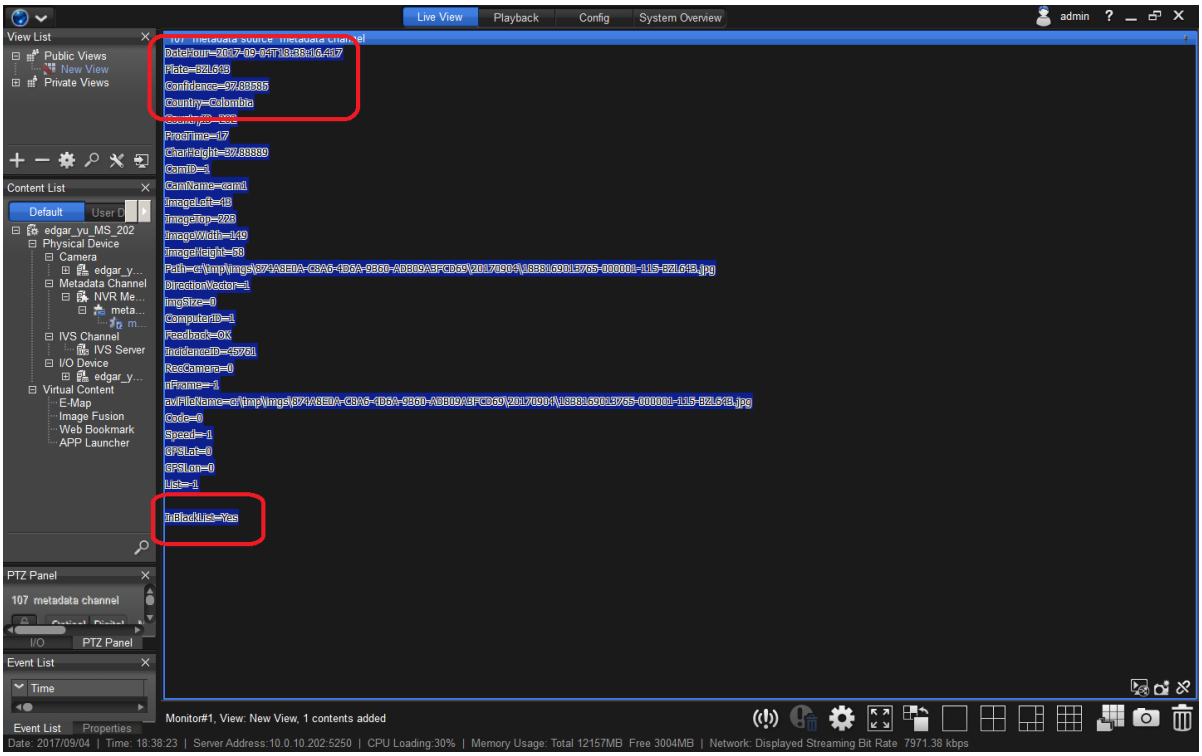

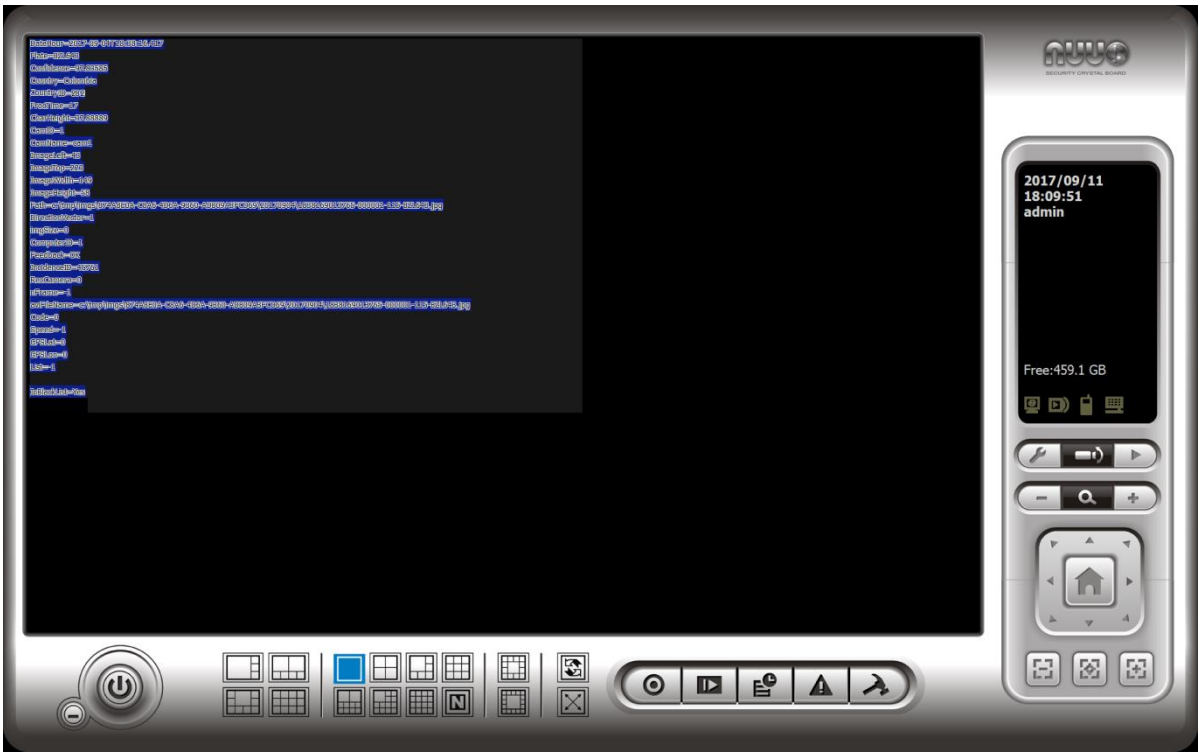

(a) ProcTime: LPR image processing time

(b) CharHeight: Height of the characters of the plate, measured in pixels

(c) ImageLeft: Left coordinate of the plate in the image

(d) ImageTop: Top coordinate of the plate in the image

(e) ImageWidth: Width of the plate in the image

(f) ImageHeight: Height of the plate in the image

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(g) DirectionVector: Flow direction of the plate
0: Unknown direction or it has not moved
-1: Moves away from the camera position
1: Moves toward the camera position

(h) Feedback: Reason of NO reading, in case of using a trigger

(i) IncidenceID: A unique ID for the detection event.

(j) List: ID list or -1 if the plate is not in list

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