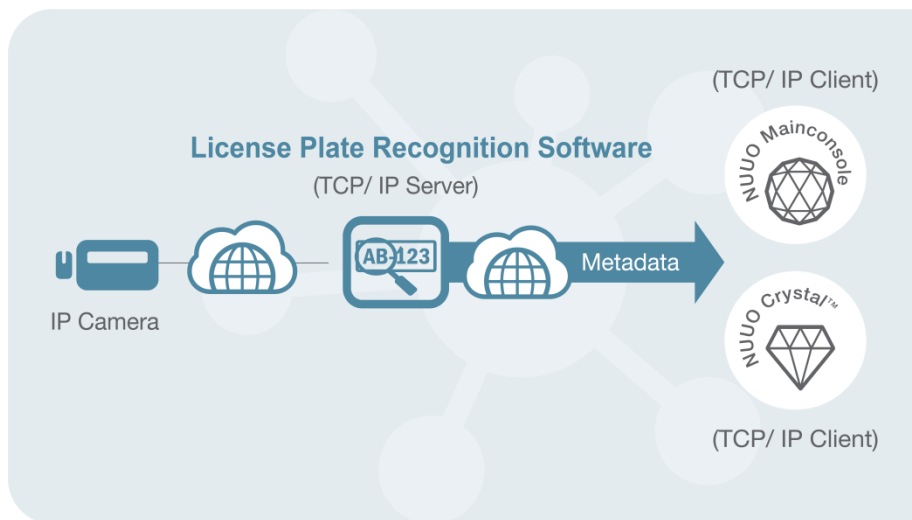## Table of Contents

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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.2.2.0.4
	Mainconsole	v.7.2.0	N/A	v.2.2.0.4

II. Neural Labs VPAR Installation

A. Trial Version

For trial, please contact USA@NEURALLABS.NET for further technical support.
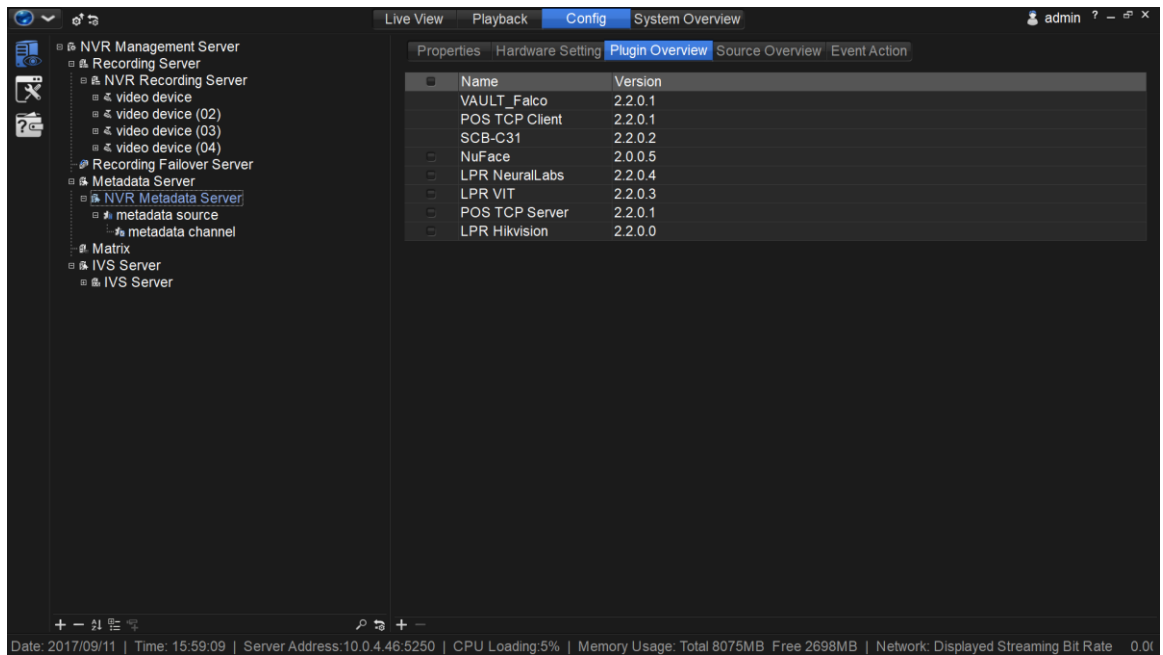
B. Neural Labs VPAR Server Set-up

Please refer to the page 15 of VPAR_SERVER_User_Manual_EN.pdf for details.
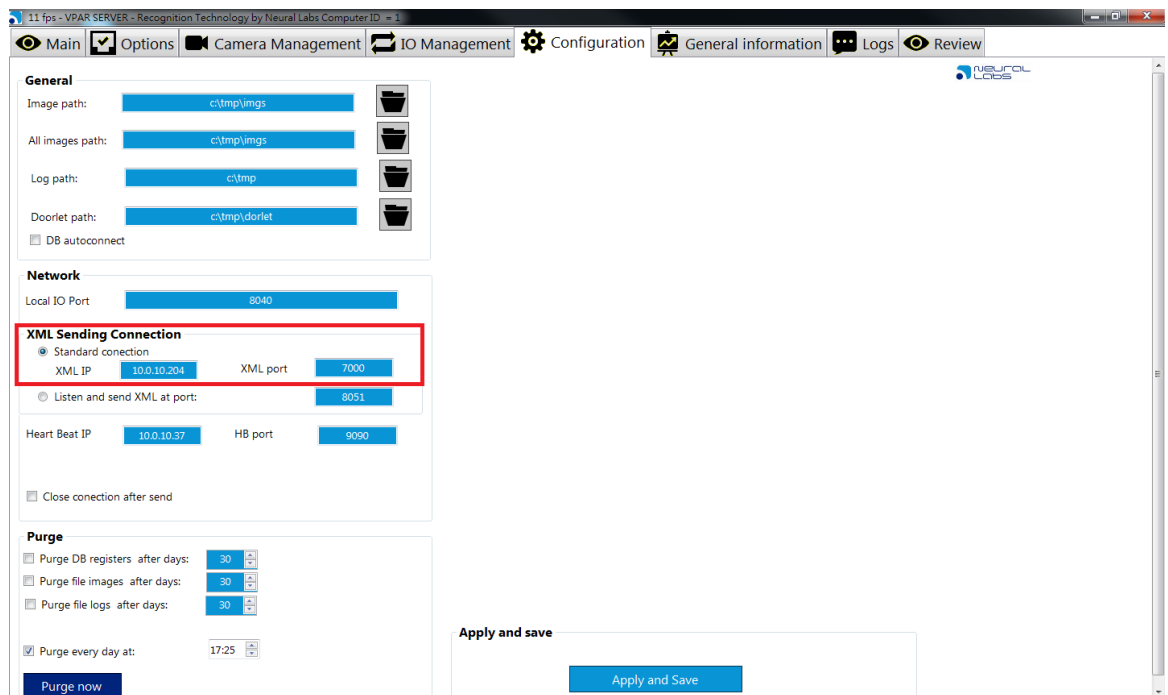
III. NUUO Server Configuration

A. Crystal^TM

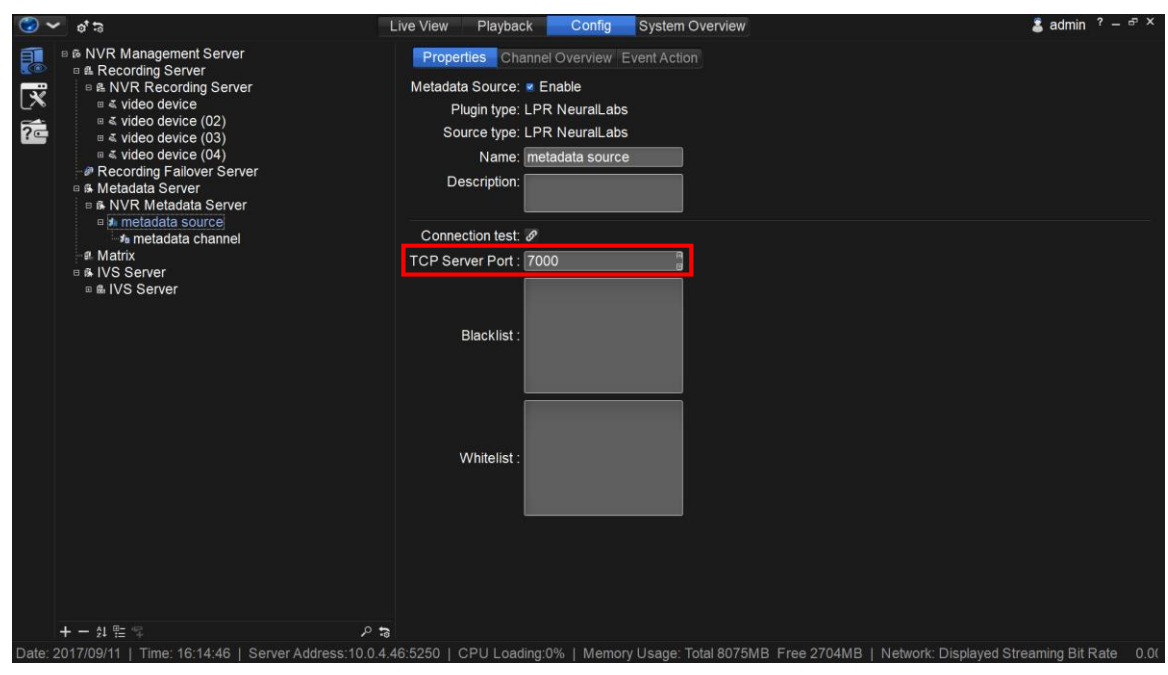a. To use this feature, please upgrade your Crytal^TM Server to v.3.8.0. The plugin for Neural

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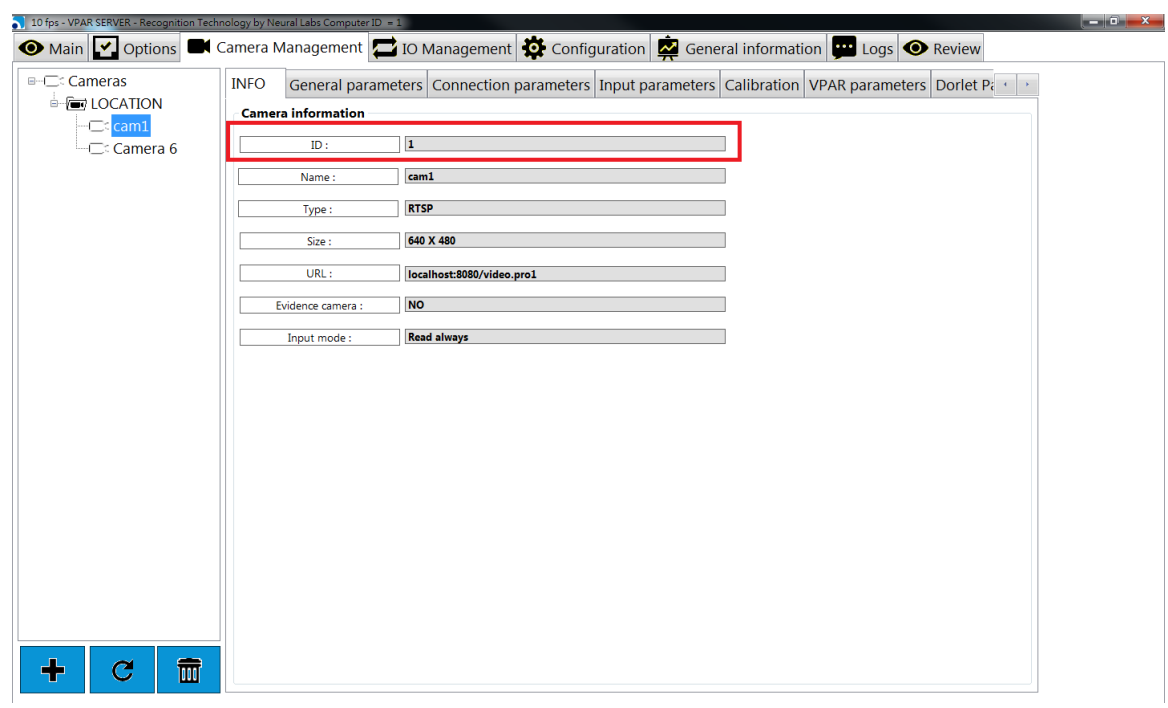

b. Open the Neural Labs VPAR Server and input the IP address of Crystal^{TM} server and assign a port in Configuration > XML Sending Connection.
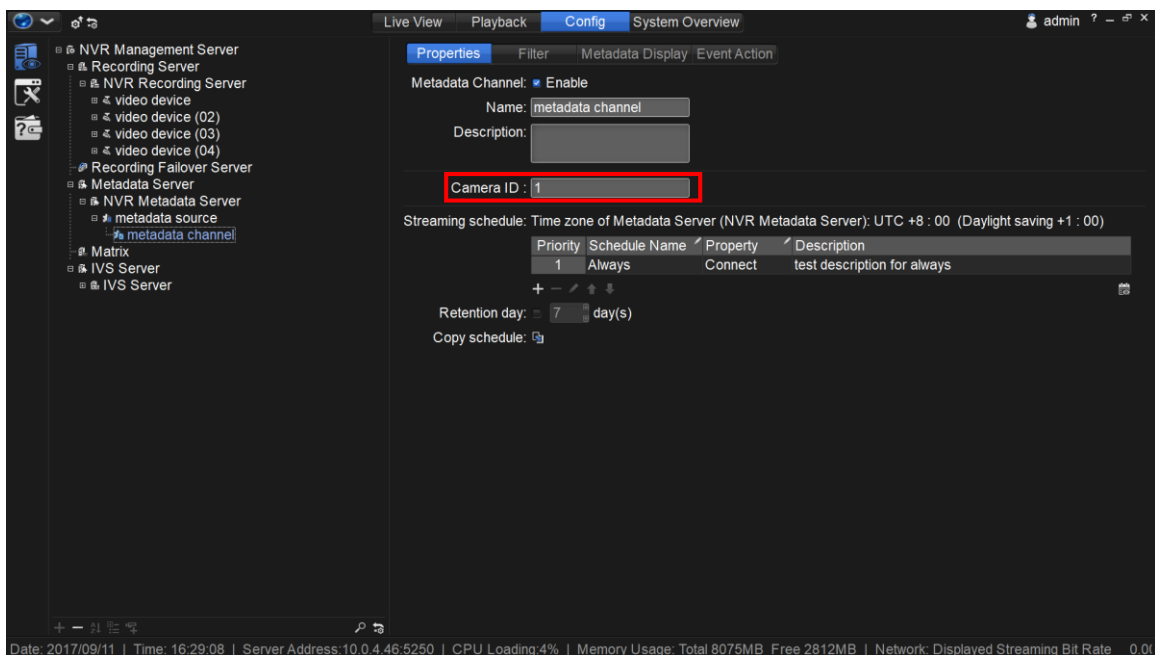

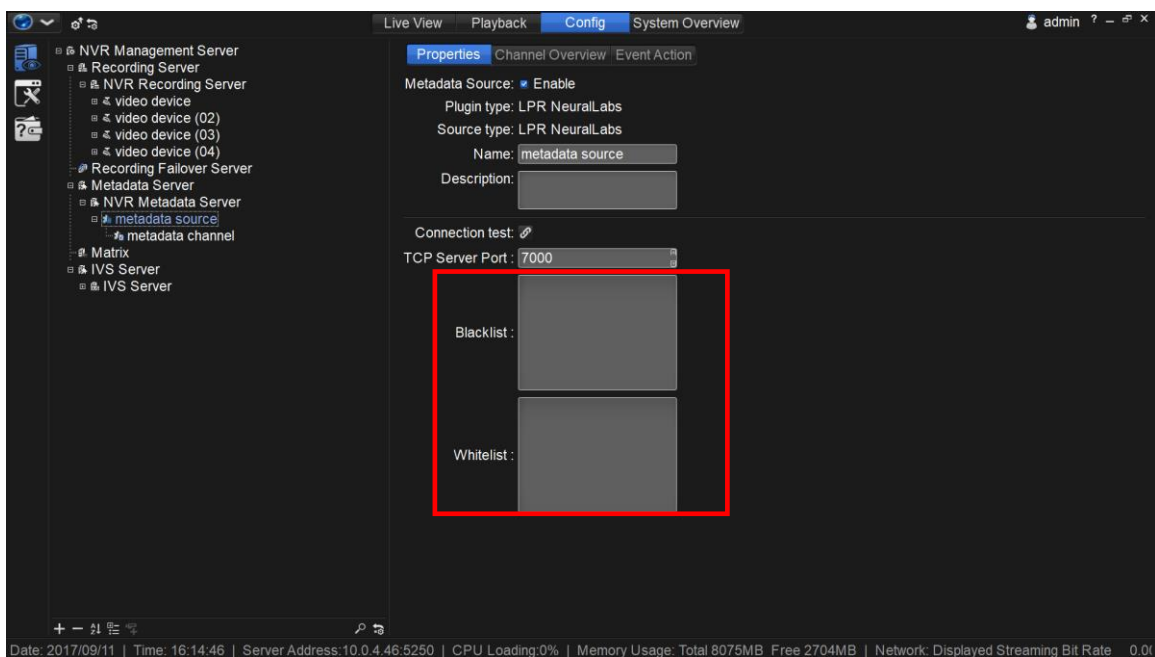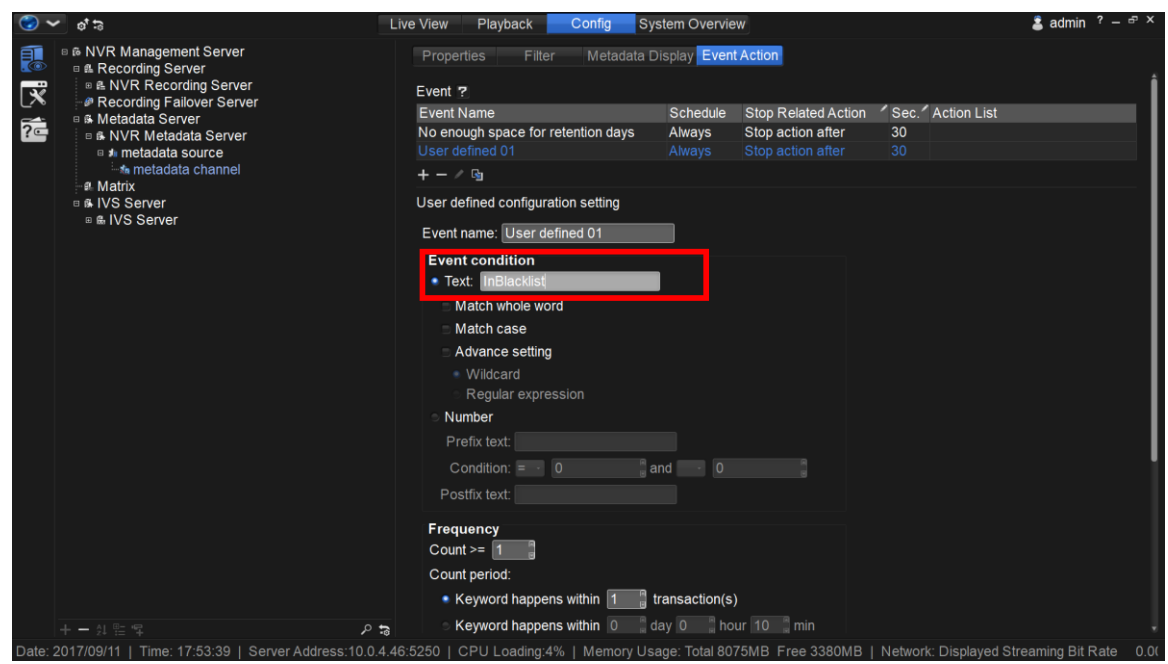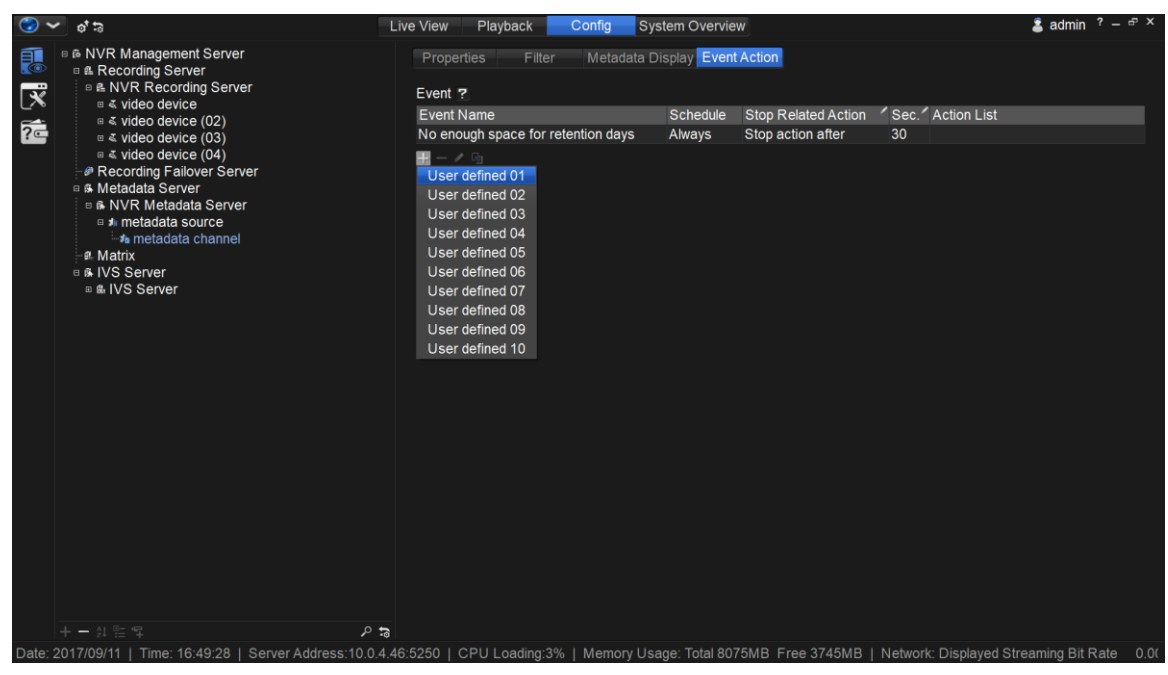c. *Add a metadata source of Neural Labs LPR and input the assigned port.*

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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)
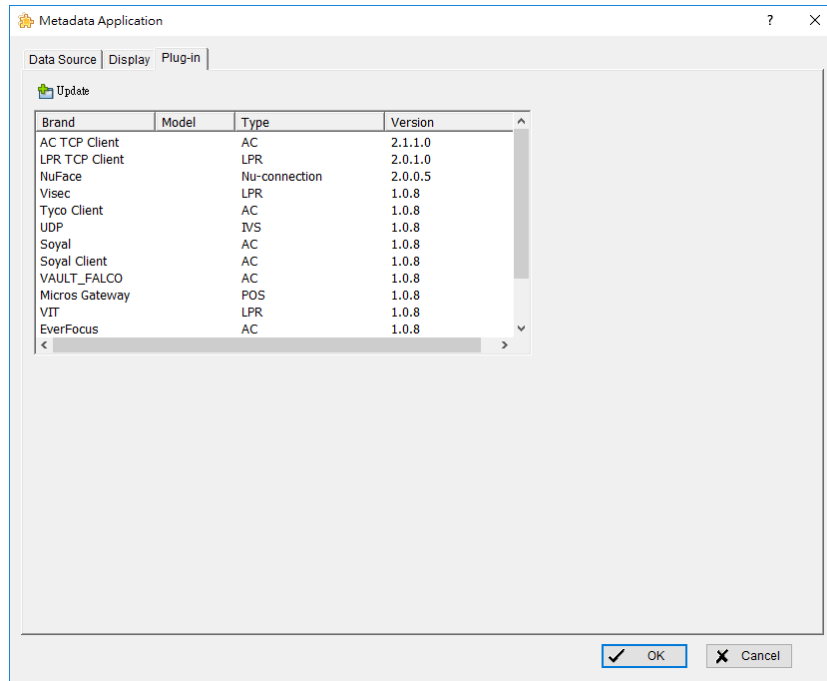
e. For Blacklist and Whitelist applications, input the relevant license plate numbers into the blacklist and whitelist column in the "Properties" tab. All the metadata channels under the metadata source will share the same blacklist and whitelist for flexible system design. Then, setup a specific action 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, ~~Mainconsole~~ Crystal Server will automatically compare the receiving license plate numbers with those in the list and do instant responses.
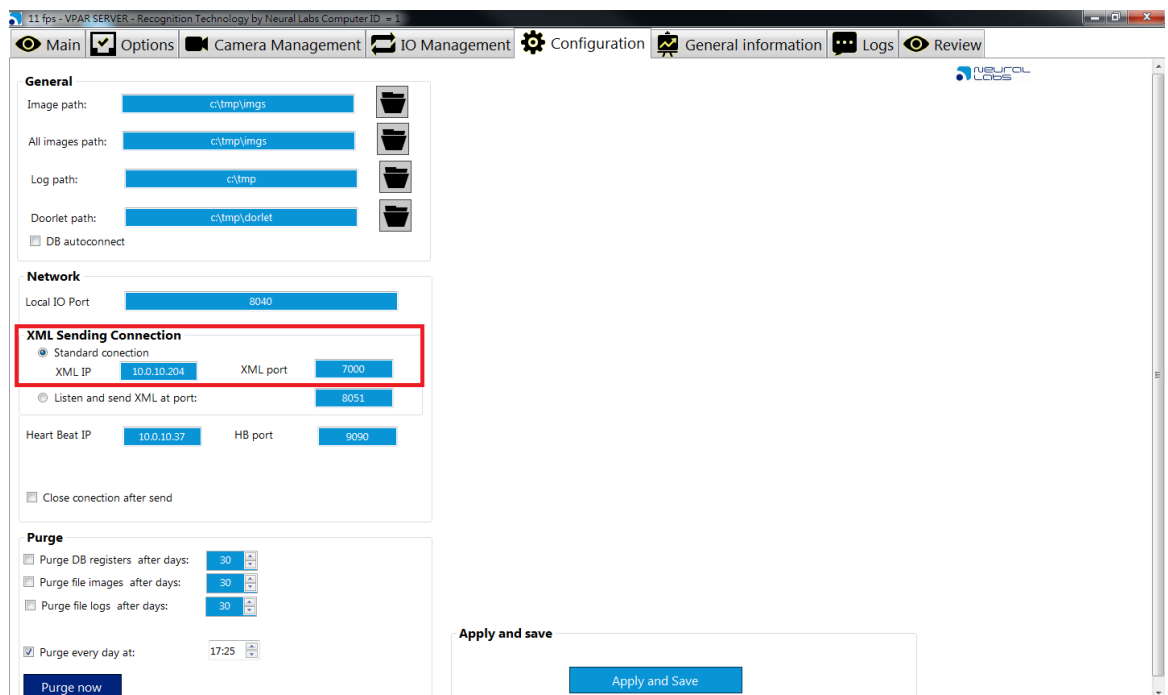
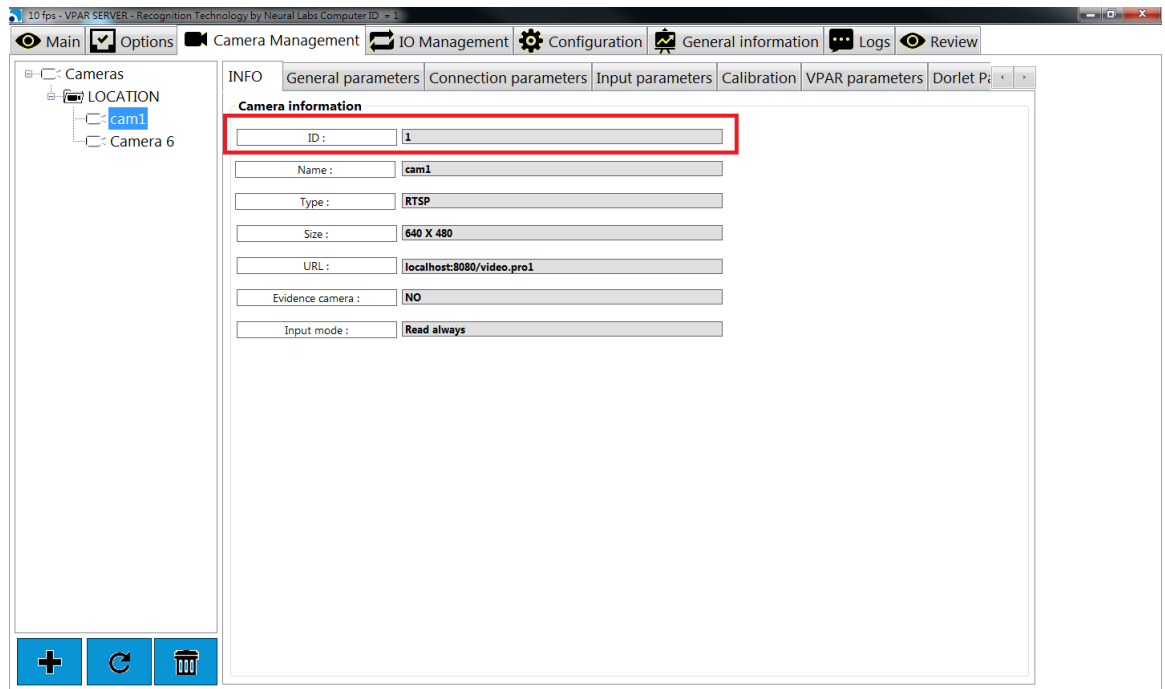www.nuuo.com

B. Mainconsole

    a. To use this feature, please upgrade your Mainconsole Server to v.7.2.0 and install the plugin for Neural Labs LPR System in Metadata Application > Plugin > Upload.

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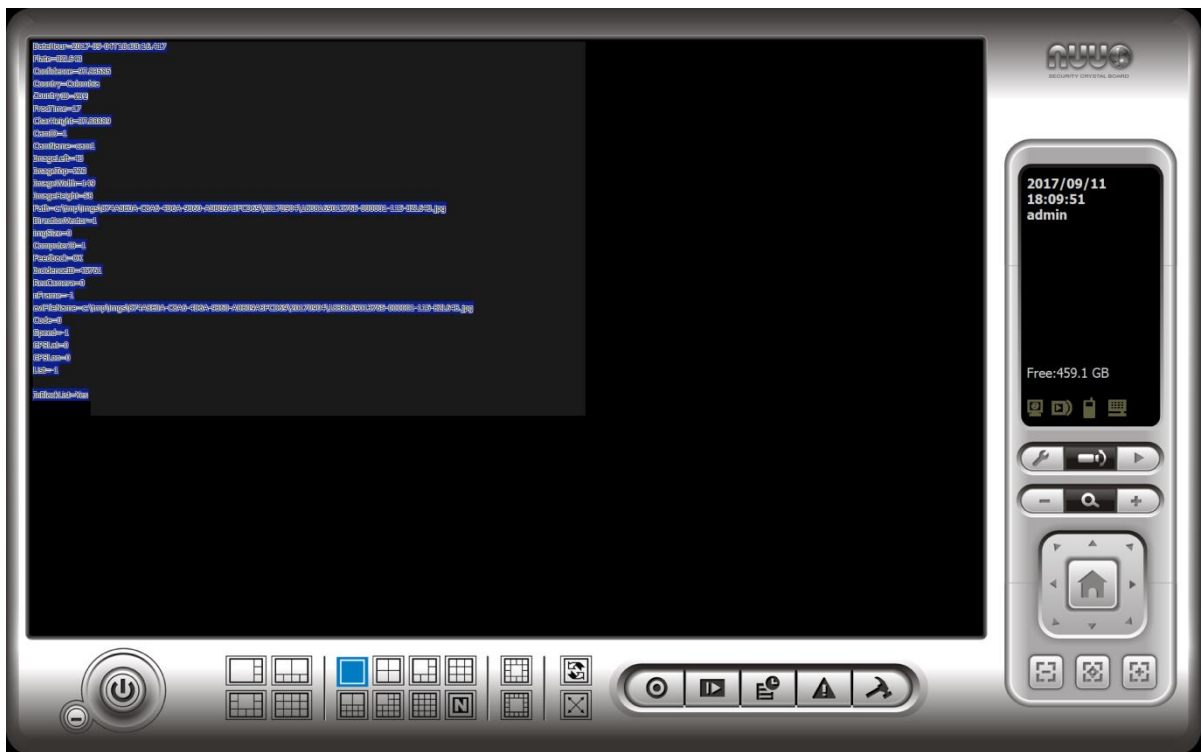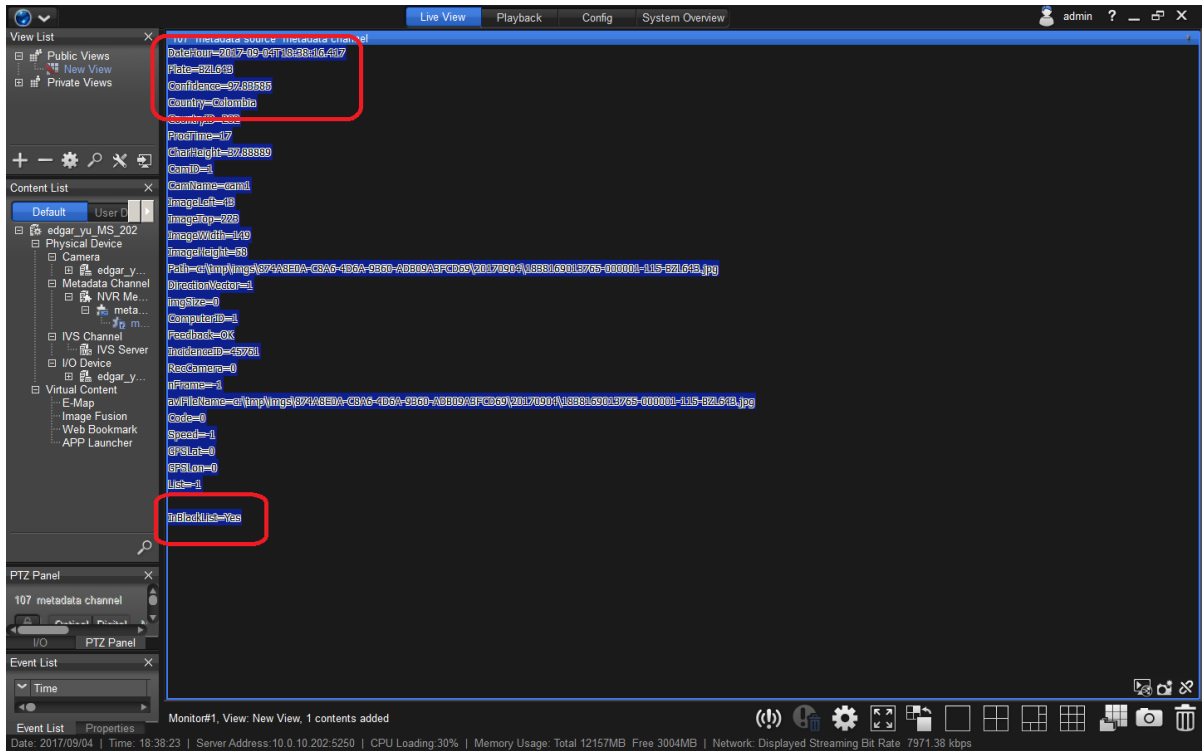

c. *Add a metadata source of Neural Labs LPR and input the assigned port.*

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, 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, Mainconsole Server will automatically compare the receiving license plate numbers with those in the list and do instant responses.

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. The definition of special data receiving from the Neural Labs VPRA server and users can omit those unwanted data by setting the regular expression in metadata channel > Filter.

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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

(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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