

ACTi ALPR Server 1 User's Manual Version 1.0.1

www.acti.com

2014/10/06

About This Manual

Conventions Used in This Manual

The following are typographic conventions used in this manual:

- Bold: Bold typeface is used for a keyword, major functions of ACTi ALPR Server 1, or a title of a section/column.
- Italic: Italic typeface is used for a filename or location path.
- <u>Underlined</u>: Underlined typeface is used for a document name or hyperlink.
- "**Bold**": Bold interface enclosed in double quotation marks indicates the name of a button, a menu or a choice item.

Some notices are placed within the following boxes; each type of the box indicates different purposes or levels of importance for system:

Important Notice

The content within this box is an **important notice**. This notice is important for you to get certain functions to work properly, or to prevent from certain potential problems that may damage your system. Make sure you read this notice and follow the instructions.

Note

The content within this box is a **note**. A note is some necessary information you need to know about the action you are currently taking, like what will happen after you follow or don't follow certain procedure.

Tip

The content within this box is a **tip**. A tip gives you an alternative method to easily or quickly achieve an objective, usually for specific conditions.

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Legal Notice

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Introduction

Product Overview

Applying Automatic License Plate Recognition (ALPR) technology, ACTi now helps you build a smarter surveillance system. **ACTi ALPR Server 1** is a video analytics software designed to detect and recognize vehicle license plates. This software is able to automatically locate and read license plates appearing in a certain area to provide efficiency in parking and traffic control, as well as law enforcement. Once a license plate is recognized, users can browse through them to play back footages or export the footages to use as evidence or future references.

System Architecture



The service architecture is described in the following figure:

PC Hardware Requirements

The performance of live display quality is largely determined by the computer hardware capability and the number of live channels. The table below provides basic guidelines for selecting proper hardware for the computer that installs **ACTi ALPR Server 1**.

PC Spec	Recommended
CPU	Intel Core i7 Processor
RAM	4GB ¹
Operation System	Windows 7, Windows 8 ²
Screen Resolution	800x600
Network	Ethernet 1000 Base-T

¹ Please use <u>64-bit system if your computer has more than 4GB RAM</u>. Windows operating system has limits on memory and address space regardless of the real or virtual memory available on a particular computer. Take Windows 7 Professional for example, the maximum physical memory for a 32-bit(X86) system can address is 3.5 GB even though 16 GB of RAM has been installed on this computer. Therefore, if you consider increasing the computer's multi-tasking capability by adding more RAM, you will need a 64-bit version of Windows to take advantage of it all.

Please visit the link below for more memory limitations on various Windows platforms. <u>http://msdn.microsoft.com/en-us/library/aa366778%28VS.85%29.aspx#physical_memory_limi</u> <u>ts_windows_7</u>

Besides the limitation mentioned above, you may find the usable memory of your computer displayed here: $\bigcirc \rightarrow$ Computer \rightarrow Properties is still less than actual installed memory.

This is a common symptoms of all Windows platforms, please find explanations and solutions in this Windows official support document <u>http://support.microsoft.com/kb/978610/en-us</u> and <u>http://windows.microsoft.com/en-us/windows7/taking-the-mystery-out-of-64-bit-windows</u>

² Please make sure your operation system is fully patched with the latest service packs.



Getting Started

Pre-requisites

Before installing ACTi ALPR Server 1, please make sure the pre-requisites below are fulfilled:

- 1. Ensure that your computer meets the minimum system requirements.
- 2. Ensure that your computer has a **C Drive**.
- 3. Ensure that you have enough storage space on your computer to save video recordings of recognized license plates.

Installing the Program

The program installation can be simple and intuitive by following the installation wizard's instructions. The program can be used right after installation is completed, without the need to restart the computer.

To install the software, follow the steps below:

- 1. Find the IVS Server 1 compressed file that you downloaded and extract it.
- 2. Execute the install shield application
- If prompted by the InstallShield Wizard to install Microsoft Visual C++ 2012 Redistributable Package, follow the on-screen instructions to do so, as it is crucial for the proper functioning of the program.

😾 Microsoft Visual C++ 2012 Redistributable (x86) - 11.0.60610 Set 💶 💷 🗮 🗶	🖟 Microsoft Visual C++ 2012 Redistributable (x86) - 11.0.60610 Set 📼 💷 💌
Microsoft Visual C++ 2012 Redistributable (x86) - 11.0.60610	Microsoft Visual C++ 2012 Redistributable (x86) - 11.0.60610
MICROSOFT SOFTWARE LICENSE TERMS MICROSOFT VISUAL C++ 2012 RUNTIME LIBRARIES These license terms are an agreement between Microsoft Corporation (or	Setup Successful
based on where you live, one of its affiliates) and you. Please read them.	Close



4. Proceed by following the on-screen instructions of the InstallShield Wizard.



5. Proceed by reading and agreeing to the license agreement and click "Next".

1	ALPR Server 1 - InstallShield Wizard	×
	License Agreement Please read the following license agreement carefully.	
	Important Notice	
	Please read the terms and conditions of this license agreement carefully before installing the software. This end user license	
	agreement (EULA) is between you (either an individual, or a single legal entity) and ACTi. By installing the software and clicking on the	
	"agree" button, you agree to the term and conditions of this agreement. If you do not agree to this agreement, please do not	
[I accept the terms in the license agreement	-
	C I do not accept the terms in the license agreement	
Ir	stallbrield	

6. Double-check your installation settings, and click "Install".

🔀 ALPR Server 1 - InstallShield Wizard	×
Ready to Install the Program The wizard is ready to begin installation.	
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard. Current Settings:	
Setup Type: Typical	
Destination Folder: C:\Program Files (x86)\ALPR Server 1\	
User Information: Name: IT Company:	
InstallShield < Back Install Cancel	



7. The installation process is done. Click "Finish".

🙀 ALPR Server 1 - InstallShiel	d Wizard	×
2	InstallShield Wizard Completed	
	The InstallShield Wizard has successfully installed ALPR Server 1. Click Finish to exit the wizard.	
	☑ Launch the program	
	< Back Finish Cancel	

Open the file by clicking on the ALPR Server1 shortcut on your desktop. If you can't find a shortcut on your desktop, create your own shortcut by finding the ALPR_Server file under C:\Program Files\ALPR Server 1, right click, select "Send To", and select "Desktop (create shortcut)".

Organize ▼ Include	uter ▶ Local Disk (C: e in library ▼ Sha		Open Run as administrator MediaInfo Troubleshoot compatibility			 ✓ 4 Search ALPR 	Server 1	•	م ا
★ Favorites ■ Desktop ↓ Downloads ₩ Recent Places	Name Config DataSource Langs Release	ĸĸ	7-Zip Scan for viruses Move to Quarantine Pin to Taskbar Pin to Start Menu Restore previous versions	• ed	PM PM PM PM	Type File folder File folder File folder File folder	Size		*
Documents	jiii x86		Send to	•		Compressed (zipped) fol	der		E
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Local Disk (D:)	ALPR_Server.exe	.con	ig 5/30/2	2014 11:0	9 A	M CONFIG File		3 KB	-
🚽 share (\\Gdrive.a	Caliburn.Micro.c	111	3/25/2	2014 3:30	PN	1 Application extens	11	8 KB	
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🙀 Network	EntityFramework EntityFramework FFMCodec.dll FisheyeSDK.dll Pactore in December 2014	k.dll k.Sql	3/25/. Server.dll 3/25/. 3/25/. 3/25/.	2014 10:5 2014 10:5 2014 10:5 2014 10:5	i5 A i5 A i5 A i5 A	M Application extens M Application extens M Application extens M Application extens	5,05 58 2,86 12	6 KB 4 KB 3 KB 4 KB	



License and Activation

In the ALPR Server 1 system, your required number of channels should be licensed and activated before connecting. License activation is the process of unlocking the channels on ALPR Server with the received **License Key**. **License Key** is a serial number delivered as a printed card or an E-mail after the purchase is carried out. After the license activation, the channels on ALPR server will automatically become available.

During license activation, your **License Key** is matched against the MAC address of the Network Interface Card (NIC) on NVR server computer. Once this license key is used by the computer with given MAC, it cannot be activated with another MAC. This matching record will be stored on the ACTi license data server. If your computer has more than one network cards, NVR server will detect them and provide you a dropdown list to select from.

Please note:

- The license is cumulative and perpetual.
- The license is not version-specific, upgrading software version will not influence the existing license(s) you have.
- The maximum number of channels that can be managed by ALPR Server 1 is 4.

There are two ways to activate the licenses depending on your ALPR server network condition: **Online Activation** and **Offline Activation**.

Online Activation

If your ALPR Server 1 computer has available Internet access, choose online activation.





Offline Activation

Offline activation does not require Internet access for ALPR server. It is used when ALPR is located in a network not connected to public Internet (e.g. in a military base). You will need to get an activation file from another computer and transfer it to the ALPR server computer.



Step-by-step Activation Process

Based on the network conditions of your site, follow Online Activation SOP or <u>Offline Activation</u> SOP to activate your license.

Online Activation SOP

Step 1: Membership ID in **ACTi Member Center** is required for activation. Register one for free at <u>http://member.acti.com/</u>



Step 2: Log in to ALPR Server, go to License tab→Online Registration tab. Select the MAC Address, enter your License Key, ACTi member Account and Password, and then click "Apply". ALPR server will connect to the license data server via Internet to register the license key, and unlock the channels.



License anguage	54					
Contraction of the local division of the loc	KN .					
Online Registration Offline	e Registration					
MAC Address	D8-D3-85-14-C8-6E (17)	2.16.26.49)	•			
License Key	CAUAA-PABPT-PEEAP-P	PUWQP-AASPA-APPBU				
Account	useraccount@acti.com					
Password						
	Apply					
						98 - 288
	University of the second se	Munday of Courses	107.14		Total Number of I	Licenses : 1
CPUAP-PABPT-PETAP-PHV	NOP-APSPA-AAPBD	1	D8-D3-85-14-C8-6E			

Offline Activation SOP

Step 1: Membership ID in ACTi Member Center is required for activation. Register one for free at http://member.acti.com/

	Login
Join ACTi Member Todav	Your ID
As a registered user, you will have full access to the following functions	
Download our Training Courses in ACE	(is g. 2010@2222.00M)
Y Use our online support tools	Password
1 Get full support of our products	
Cartilla costa ad vagore ta di ACT totaled abactulo.	LOGIN Haven't Registered yet 7 @Register Toda = Fauge Possest = Danie Register and = Mance Registration

Step 2: Access <u>http://www.acti.com/support/LicenseMgt/index.asp</u> and select "ALPR Server". Enter the **License Key** and the **MAC address** of the **ALPR Server 1** server computer, click "**Submit**".

An E-mail with activation code file (AUL.lic) will be sent to your registered E-mail account.

Step 3: Log in IVS server from local or via web client. Go to **License** tab \rightarrow **Offline Registration** tab \rightarrow click "**Import**" and upload the license file (AUL.lic). Click "**Apply**" to activate this license.

D8A56FB7259D C0256B192D23



Verify Your License

Once your license is successfully activated, the license information will be shown on **License** page.

ALPR Server v1.0.1			
	License Language 📕 🔆		
	Online Registration Office Regis	tation	
	MAC Address	D8-D3-85-14-C8-6E (172.16.2649) *	
	License Key		
	Account		
	Password		
		Acely	
	License		Total Number of Licenses : 1
	6	nese Key Number of Licenses MAC Address	
	CPUAP-PABPT-PETAP-PHWQP-A	N94.44980 1 D8-03-85-14-08-66	

Important

The license data will be erased once ALPR Server 1 is uninstalled. Be sure to retain your license key information in a safe place because you may need to reinstall the software. After the software is uninstalled, you should contact **ACTi Customer Help Desk** <u>http://www.acti.com/CHD</u> to clear the original registration data in our data server, and then you may activate the license again.

Tip

How to find MAC Address

- 1. Click Windows Start, in the run box on Start menu, input "cmd".
- 2. Execute the cmd program, and input the command "ipconfig /all" or "getmac"
- 3. The MAC address will be referred to as the **Physical Address**, made up of 12 characters e.g. **00-1E-65-FE-8E-98**

Camera Installation

The precision of the ALPR Server 1's recognition depends on many factors, including: the image quality in the video, the pixels counts shown, user applications, camera installation, etc... Below are a few guidelines to take into consideration when installing your camera device:

 Shooting Angle of the Camera: the shooting angle of the camera to the license place should be between the ranges of 10° to 45°, as shown in the illustration below:



- 2) Frame Rate in the Video Stream: Your camera device's frame rate should be set to 25FPS or 30FPS or higher
- 3) **Shutter Speed:** The shutter speed on your camera device should be faster than or equal to 1/100 or 1/120 seconds
- 4) **Shape of the License Plate:** The shape of the license plate captured in your video should be as similar to a rectangle as possible
- 5) Height of characters and distance between characters on license plate: When captured by your camera device, the height of the characters should be taller than 40 pixels, and the distance between characters should be wider than 4 pixels.
- 6) Image Quality: Image quality is critical for the ALPR Server 1's recognition function to work properly. Please make sure the exposure, sharpness, and color presentation of the image captured by your camera device is adequate.

Setup Analysis Rules

In order to be able to apply ALPR technology to a video stream, two basic components are needed: **Video Sources** and **Analysis Rules**. This chapter will guide you through everything you need to know in order to have a **video source**, set up **analysis rules**, and apply them to your video.

When you open your ACTi ALPR Server 1, you will see the following display:

Loren	Langunga 🗰 🌆 🔛 🗱 😂		-	
				3 Ch
			1	

- 1. **Source List Window:** All of your video sources are shown here, and can be managed from here.
- 2. Video Analysis Window: This area can display your camera views. It can be composed of 1 or more channels.
- 3. **Channel:** Each channel displays a camera view.
- 4. Language Selector: Select the display language.
- 5. Layout Selection Bar: Choose from 4 layout styles, or expand to full screen.

Add Video Source

Now that you have your **ACTi ALPR Server 1** open, you are ready to add some video sources so that they can be analyzed!

Before adding a video source, make sure you have a working NVR Server or camera and confirm its following properties: (1) IP Address, (2) HTTP Port, (3) Account Name and (4) Password.

To add an NVR server as a video source, follow these steps:

1. Right-click on the Source List Window, and select "Add New NVR".



2. After selecting "Add New NVR", a popup window will appear as shown below.

SALPR Server v1.0.1					10 X
	Stores Lenguege M M M M DC				
		🛱 Add Video Source	X		
		NVR/ENR Camera	1		
		IP	localhost		
		Http Port	80		
	The second se			the second s	
		Account	admin		
		Password	•••••		
			1		
			Add		



Fill in the 4 marked fields that are required to communicate with the NVR Server: IP

Address, HTTP Port, Account Name, and Password.

If your NVR server is installed on the same device as your **ACTi ALPR Server 1**, you can keep the default "**localhost**" that has been filled in for the **IP Address** field, or use the IP address **127.0.0.1**.

3. Click "Add".

🖨 Add Video	Source			×
NVR/ENR	Camera			
IP Http Port		localhost 80	4	
Account Password		admin	4	
		Add		

• To **Remove** an NVR server from the **Video Source List**, **right-click** on the server's IP and select "**Remove**".



Note Once an NVR Server is added to the Video Source List, all devices that are on the NVR Server will be added to the Video Source List. Please make sure the camera view you want to analyze has already been added to the NVR Server.



To add camera as a video source, follow these steps:

1. Right-click on the Source List Window, and select "Add New Camera".

ALPR Server v1.0.1		× IBia
Add New WV7/DNR		
Add New Camera Rafrash		
4	dd New NVR/ENR	
	Idd New Company	
4	dd New Camera	
	efresh	
	enesi	

2. After selecting "Add New Camera", a popup window will appear as shown below.

ALPR Server v1.0.1					215 X
	License Language				
		🖨 Add Video Source		×	
		NV/P/ENP Camera			
		invigenic canon	1		
		TP	172 16 26 79		
			172.10.20.75		
		Http Port	80	-	
			1		
				and the second sec	
	the second s	Streaming Port	6002	the second s	
			1		
		Account	admin		
		Account	1 dominin		
		Password	*****		
			1		
			Add		

Fill in the 5 marked fields that are required to communicate with the camera: IPAddress, HTTP Port, Streaming Port, Account Name, and Password.You can keep the default "6002" that has been filled in for the Streaming Port field, or select any port that is not being used.

3. Click "Add".

🖨 Add Video	Source		×	(
NVR/ENR	Camera			
IP Http Port		172.16.26.79 80		
Streaming	Port	6002	✓	
Account		admin	\checkmark	
Password		•••••	\checkmark	
		Add		

• To **Remove** an NVR server from the **Video Source List**, **right-click** on the device and click on "**Remove**".

Add Channels

In order to see the camera views from the video sources you have added, you need to add them to one of the **channels** in the **Video Analysis Window**.

To add channels, follow these steps:

- 1. On the **Source List Window**, find the device for which you would like to see the camera view.
 - If you have devices added in your NVR server but cannot see them in your ACTi
 ALPR Server 1 Source List Window, click on the collapse icon shown next to
 your NVR server in the Source List Window to expand the device list, or
 right-click on your NVR server IP address and select "Refresh".

ALPR Server v1.0.1	× (8) -
Lones Legans III III 20	
a 172.16.	
3 177 16 76 94	
• 172.10.2007	
• 1/1	
Remove	
Defrech	
A TO A C	
1/2.10.20.02	
-	
170 45 05 04	
1/2.10.20.84	

 After finding your device, you can see the camera views from the device by dragging it to one of the channels in the Video Analysis Window. If a new device is dragged to a channel with an existing camera view, the existing camera view will be replaced.





- To **Remove** a camera view, **right-click** on the channel and select "**Remove**". Note that the analysis will stop running if you perform this action.
- To renew the connection to a device in, **right-click** on the channel and select "**Reconnect**". Note that if you have an analysis running, you must stop the analysis to perform this action.
- If you want the program to automatically reconnect when it detects that it has been disconnected from the device, keep the box for "**auto reconnect**" marked.





Create an Analysis Rule

Now that you able to see your camera's video feeds, you are ready to create your analysis rules for your camera views! Note that analyses can only be performed when the device has been dragged into a channel window. One channel can only run 1 analysis at a time, and the maximum number of channels that can perform analyses simultaneously is 4. Please note smoothness of performance may depend on your computer's hardware capacity.

Accessing New Analysis Window

Live View Analysis

To access the function to create a new analysis rule for a live view, follow the steps below:

1. **Right-click** on the channel window of your video, click on "**Create Analysis**", and select "Live".



2. In the new pop-up window that appears, input a name for your **Analysis Rule** and click "**OK**".

Inp	ut Analysis Name		
	lew Analysis	OK	Cancel



3. A New Analysis Window will appear, and you are now ready to set up your Analysis Rules.

License Plate Recognition		
LPR Properties		
Country	Taiwan 👻	
Enable	<u> </u>	
Maximum Car Plate Height	25	1.0 直道(④) 請勿進人 [1.1] [1.
Maximum Car Plate Width	50	人民法律人会認知道
Minimum Car Plate Height	5	A REAL PROPERTY AND A REAL
Minimum Car Plate Width	15	
Post-buffer Time	5	
Pre-buffer Time	5	
Start	Reset	Maximum Plate Size

Playback Analysis

To access the function to create a new analysis rule for non-live video footage that already exists for the selected channel, follow the steps below:

 Right-click on the channel window of your video, click on "Create Analysis", and select "Playback".

Connected	NVR3000://172.16.26.175/172.16.26.179
1	Create Analysis
1. 1	Stop Analysis
	Search Analysis Results
	Show Algorithm Regions
132	Auto-reconnect
2/	Reconnect
	Remove Remove
14	

2. In the new pop-up window that appears, input a name for your **Analysis Rule** and click "**OK**"

Input Analysis Name	
New Analysis	OK



- 3. A **New Analysis Window** will appear, in which you can select the time interval you wish to analyze. To set your time interval, follow the steps below:
 - Set the beginning of the interval by right-clicking on any location on the Time Bar, and selecting "Set as Begin".



z

2. Set the end of the interval by **right-clicking** on any location on the time bar, and selecting "**Set as End**".



3. The selected area should appear highlighted in green. To clear or edit your selection, **right-click** and select "**Clear**" to set a new time interval.





Analysis Sett	ings		Li	ve View Display
Recognition				151 2
LPR Properties				
Country	Taiwan 💌			
Enable			and the second se	
Maximum Car Plate Height	25	2	1 四前語 (二) []	勿這人
Maximum Car Plate Width	50	All and a second s	VII NE O L	Charles and the second s
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Minimum Car Plate Width	15		statement of the local division of the local	and the second se
Post-buffer Time	5	and the second second		
Pre-buffer Time	5	A Martine and		
Start	Reset	Marijun Part Sk	n	
		06/09/2014 11:09:42	06/09/2014 11:09:50	06/00/2014 11:10:42
		0000/2011100:47		Time Bar

New Analysis Window UI Introduction

- Analysis Settings: Provides for the adjustment of the algorithm's unique properties.
- Live View Display: Provides live camera view of the selected video source.
- **Time Bar**: Shows the time at which the video in **Live View Display** is taking place (as determined by user's PC).

License Plate Recognition Algorithm Setup

In order for the License Place Recognition algorithm to perform optimally, you can adjust LPR **Properties** to obtain the best results.

Before adjusting any settings, make sure the camera that the camera is placed correctly, and that it meets the following criteria:

- The angle between the camera and the license plate to be recognized lies between 10° and 45°, so that the shape of the license plate is as close to a rectangle as possible
- 2. The license plate characters to be recognized in the camera view are at least 40 pixels in height
- 3. The camera's frame rate is at least 25 FPS
- 4. The camera's shutter speed is at least 1/100 s.



To start setting up your License Plate Recognition algorithm, follow the steps below:

1. Adjust the LPR Property Settings to get the most optimal results:

Property	Description	Default
Country	Used as reference only. Allows you to choose from a	Taiwan
	predetermined list of countries, to increase the accuracy	
Enable	or recognition results.	Enabled
	Enables LPR algorithm.	
Maximum	Set the maximum height (1-120 pixels) of any license	25
Car Plate	plate to be recognized. Any license plate whose height is	
Height	larger than this value will be ignored. The Maximum	
	corpor of the Live View Dicplay) provides viewel	
	reference for the value selected. The ratio between	
	Maximum Car Plate Height and Minimum Car Plate	
	Height should be as close to 2 as possible	
Maximum	Set the maximum width (1-160 pixels) of any license	50
Car Plate	plate to be recognized. Any license plate whose width is	
Width	larger than this value will be ignored. The Maximum	
	Plate Size Reference Frame (found in the bottom left	
	corner of the Live View Display) provides visual	
	reference for the value selected. The ratio between	
	Maximum Car Plate Width and Minimum Car Plate	
	Width should be as close to 2 as possible.	
Minimum	Set the minimum height (1-120 pixels) of any license	16
Car Plate	plate to be recognized. Any license plate whose height is	
Height	smaller than this value will be ignored. The Minimum	
	Plate Size Reference Frame (found in the bottom left	
	corner of the Live View Display) provides visual	
	reference for the value selected. The ratio between	
	Maximum Car Plate Height and Minimum Car Plate	
	Height should be as close to 2 as possible.	
Minimum	Set the minimum width (1-160 pixels) of any license	15
Car Plate	plate to be recognized. Any license plate whose width is	
Width	smaller than this value will be ignored. The Minimum	
	Plate Size Reference Frame (found in the bottom left	
	corner of the Live view Display) provides visual	
	Maximum Car Plate Width and Minimum Car Plate	
	Width should be as close to 2 as possible	
Post-huffer	Set the amount of time (in seconds) that video footage	5
Time	will be recorded after a license plate is recognized	
Dro-buffor	So the amount of time (in accorde) that wides fortage	5
Time	Set the amount of time (in seconds) that video footage	5
11116	will be recorded before a license plate is recognized.	



- 2. To narrow down the area in which the algorithm will be actively running, move your cursor over to the area showing video stream, at which point it will appear as a drawing pen. To draw the rectangle that will mark the area for detection, click and drag your cursor to draw a red rectangle.
- 3. If the area you want to mark does not fit to the form of a rectangle, you may also choose to draw a polygon by selecting the icon on the upper right corner of your Live View Display area. To draw the lines for the sides of your polygon, click your cursor to mark the endpoints of each line. Double-click on the final endpoint of the final line to confirm and highlight the polygon in light blue, as shown in the illustration below. Make sure your lines connect (a minimum of 3 lines) to form a closed shape.



4. To adjust the marked area, you can drag the highlighted area to keep its original shape or right-click on the area, select "remove", and re-draw. For polygons, you may toggle the endpoints of the lines that make up the sides of your polygon.



Recognition			The second se	
PR Properties			St. 19 19 19 19 19 19 19 19 19 19 19 19 19	(Ontional)
Country	Taiwan 💌			
Enable			N	Remove
Maximum Car Plate Height	25			Keniove
Maximum Car Plate Width	50			
Minimum Car Plate Height	5	and the second second	a statement	-
Minimum Car Plate Width	15			
Post-buffer Time	5			
Pre-buffer Time	5	and the second second		100 million (100 m
		Maximum		
5 Start	Reset	Minimum Plate Size		

5. Click "Start Smart Search" to start running your analysis.

Tip

For a better experience, make sure that the height of your detection area is no taller than 10 times the Maximum Plate Size height, and that the width of your detection area is no wider than 10 times the Maximum Plate Size width.

Important Notice

The precision of your video analysis depends on the video quality and may be affected by the characteristics of objects in the video stream. To obtain the best results, test your analysis rules and optimize your settings. For further inquiries, provide a RAW file of your analysis and contact our Customer Help Desk.

Stop (Cancel) an Analysis Rule

If you are only running your **Analysis Rule** for a specific time period or you wish to stop running the **Analysis Rule** at any point, you can do so by using the **"Stop Analysis"** function.

To access this function, simply **right-click** on the channel that you wish to stop the analysis, and select **"Stop Analysis"**.



Important Notice

All analyses will stop running if the **ACTi ALPR Server 1** window is closed. To continue running an analysis, the settings will have to be re-configured in a new **Analysis Rule**.



Monitoring

Once you have added your video sources and have your analysis rules set up, you are now ready to monitor your video feeds and watch them in action! Each channel that is running an analysis will have icons on the upper right corner so that you can know at a quick glance what algorithms are running.



Analysis is running

ALPR

ticense Plate Recognition

Progress Bar (For Playback Analyses)

Display Detection Indicators

To enhance awareness when monitoring your live video feed, it may be helpful to have visual cues about the analyses that you are running. In order to achieve this, **ACTi ALPR Server 1** provides the option to display detection indicators or show the moving objects on the screen.

To access this function, simply right-click on a channel and select "**Show Algorithm Regions**" to display detection indicators.



Display Latest Recognition Results

While monitoring, it may be helpful to see information about the license plates that are being recognized. In order to achieve this, **ACTi ALPR Server 1** provides the option to display real-time information of the latest recognized license plate.

To access this function, simply double-click the channel for which you would like to see the results. An information panel will appear on the right side of your screen, showing a snapshot of the license plate, the result of the recognition, time and date captured, and the confidence level of the algorithm.



To leave this function, simply double-click on the area showing the camera view.



Analysis Results

After running your ALPR algorithm, the next logical step would be to look at what license plates have been recognized. To browse the results, you can use the Search Analysis Results function of ACTi ALPR Server 1.

To access this function, right-click on the area of the Video Analysis Window that is running the analysis rule for which you would like to see the results for and select "Search Analysis Results".



A new Analysis Results Window that contains the license plates recognized as a result of your algorithm will open. For each license plate recognized the recognition result, a snapshot of the license plate, the confidence level of the algorithm, the color of the car, the time it was recognized, as well as the channel from which it was recognized will be shown.

🖨 Analysis Result							_ _ ×	
NVR 172.16.26.175	License Plate Results							
I72.16.26.79	2014-06-09 11:33:	30 🔔 💌 ~ 2014-06-10 11:37	3:30 😴 👻 Plate Sear	rch	P 0000000 -		5	
 Previous Analysis New Analysis 172.16.26.179 	Recognition Result	Plate Snapshot	Confidence Level	Color	Time	Channel		
Analysis	8568U5 8766H6W	8568 U5 8766 H6	74.9 62.5		2014-04-16 09:11:14.538 2014-04-16 09:11:23.777	ipcam://localhost ipcam://localhost		
Result Filter	9C0793	90.0793	84.4		2014-04-16 09:11:46.061	ipcam://localhost		
	0576HF	0576HF	82.2		2014-04-16 09:12:18.647	ipcam://localhost		
	53B888	5388 86	57.1		2014-04-16 09:12:22.248	ipcam://localhost		A I
	ABD0577	ABD-0397	62.9		2014-04-16 09:12:32.65	ipcam://localhost		
	HA19577	RAJ 9577	53.6		2014-04-16 09:12:37.41	ipcam://localhost		Results
	RAK5424	RAK 5624	65.5		2014-04-16 09:12:39.121	ipcam://localhost		
	C72833	CT 2833	69.4		2014-04-16 09:12:43.742	ipcam://localhost		
	8980YD	8980 YD	79.9		2014-04-16 09:12:44.922	ipcam://localhost		
	183A8	183 48	86.4		2014-04-16 09:12:54.494	ipcam://localhost		
	7683YQ	7683 YG	60		2014-04-16 09:12:55.864	ipcam://localhost		
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Search Results by Filters

To narrow down the search results that are shown, you can use the options presented in the **Analysis Result Filter** area to filter by **Time Period**, **Plate Number**, and **Car Color**. Note that these filters are used in conjunction with each other.

🖶 Analysis Result					
NVR 172.16.26.175	License Plate Results				
 172.16.26.79 Previous Analysis 	2014-06-09 11:33:30 💌 🗸	2014-06-10 11:33	:30 🗣 💌 Plate Search	• ۵۵۵۵۵۵۵ •	C
 New Analysis 172.16.26.179 	Recognition Result Plate S 8568U5 8766H6M	napshot	Afidence Level Color 4.9 62.5	Time 2014-04-16 09:11:14.538 2014-04-16.09:11:23.777	Channel ipcam://localhost incam://localhost
2014	06-09 11:33:30 🔹 💌 ~	2014-06-10 11	Li33:30 V Plate Sea	erch se Plate Num	ber Color
	8980YD	8980.10	79.9	2014-04-16 09:12:44.922	ipcam://localhost
	183A8	183 A8	86.4	2014-04-16 09:12:54.494	ipcam://localhost
	7683YQ	7683 YG	60	2014-04-16 09:12:55.864	ipcam://localhost

ALPR Results by Time Period

If the results you wish to see are from a specific time period, you can set this time period by adjusting the **Time Period** setting in the **Analysis Result Filter** area.

- 1. Select the date and time for the beginning of the time period.
- 2. Select the date and time for the end of the time period.
- 3. Click 🕽 .

Previous Analysis		~ 2014-08-10 11:		× 1 000000		3
New Analysis	Su Mo Tu We Th Fr Sa	Su Mo Tu We Th	Fr. Sa dence Level Color	Time	Channel	
172.10.20.179	8 27 28 29 30 31 1 2	25 26 27 28 29	30 31	2014-04-16 09:11:14.538	ipcam://localhost	
	8 10 11 12 13 14 15 16 17 18 19 20 21 22 23	8 9 10 11 12 15 16 17 18 19	13 14 20 21	2014-04-16 09:11:23.777	ipcam://localhost	
	g 24 25 26 27 28 29 30 1 2 3 4 5 6 7	22 23 24 25 26 29 30 1 2 3	27 28	2014-04-16 09:11:46.061	ipcam://localhost	
	C			2014-04-16 09:12:18.647	ipcam://localhost	
	5-50000 C	11:43 AM		2014-04-16 09:12:22.248	ipcam://localhost	
	ABD0577	ABD 0397	62.9	2014-04-16 09:12:32.65	ipcam://localhost	
	HA19577	RAJ 9577	53.6	2014-04-16 09:12:37.41	ipcam://localhost	
	RAK5424	RAK 5626	65.5	2014-04-16 09:12:39.121	ipcam://localhost	
	C72833	CT 2833	69.4	2014-04-16 09:12:43.742	ipcam://localhost	
	8980YD	8980 YD	79.9	2014-04-16 09:12:44.922	ipcam://localhost	
	183A8	183 A8	86.4	2014-04-16 09:12:54.494	ipcam://localhost	
	7683YQ	7683 YG	60	2014-04-16 09:12:55.864	ipcam://localhost	
		The second second	di-a			



ALPR Results by License Plate Number

If you want to search for a specific License Plate Number, you can do so by typing in the **License Plate Search** in the **Analysis Result Filter** area.

For example, to only show the results for license plate number "7683YQ" follow the steps below:

- 1. Type in "7685YQ", or "685Y", or "76*Q" in the search box. The * symbols represents one or more unknown characters that may exist between known characters.
- 2. Click 🕽 .

✓ New Analysis		Dia Caralas			chl
72.16.26.179	Recognition Result	Plate Snapshot	Z4 0	2014-04-16-00-11-14-529	incam://acalhort
	8766H6W	8766.46	62.5	2014-04-16 09:11:23.777	ipcam://localhost
	9C0793	900793	84.4	2014-04-16 09:11:46.061	ipcam://localhost
	0576HF	0576HF	82.2	2014-04-16 09:12:18.647	ipcam://localhost
	538888	5388 88	57.1	2014-04-16 09:12:22.248	ipcam://localhost
	ABD0577	AED 0397	62.9	2014-04-16 09:12:32.65	ipcam://localhost
	HA19577	RAJ 9577	53.6	2014-04-16 09:12:37.41	ipcam://localhost
	RAK5424	RAK 5626	65.5	2014-04-16 09:12:39.121	ipcam://localhost
	C72833	CT 2833	69.4	2014-04-16 09:12:43.742	ipcam://localhost
	8980YD	8980 YD	79.9	2014-04-16 09:12:44.922	ipcam://localhost
	183A8	183 48	86.4	2014-04-16 09:12:54.494	ipcam://localhost
	7683YQ	7683 YG	60	2014-04-16 09:12:55.864	ipcam://localhost

ALPR Results by Car Color

If you want to see results of license plates for cars of a specific color, you can set this by configuring the **Car Color** filter in the **Analysis Result Filter Area**.

For example, to only show cars that are yellow, you would have to:

- 1. Select the color that you wish to filter with from the drop-down menu.
- 2. Click 🕽 .

🖨 Analysis Result					
NVR 172.16.26.175	License Plate Results				U
 172.16.26.79 Previous Analysis 	2014-06-09 11:33:3	0 😴 🕶 ~ 2014-06-10 11:33	Plate Search	P 000000	2 🕽
Rew Analysis	Recognition Result	Plate Snapshot	Confidence Level Color	Time Available Colors	· · · · · · · · · · · · · · · · · · ·
± 1/2.16.26.1/9	8568U5	8568 05	74.9	2014-04-16	t
	8766H6W	8766 H6	62.5	2014-04-16 09:11:23.777	ipcam://localhost
	9C0793	90,0793	84.4	2014-04-16 09:11:46.061	ipcam://localhost
	0576HF	0576HF	82.2	2014-04-16 09:12:18.647	ipcam://localhost
	538888	5388.88	57.1	2014-04-16 09:12:22.248	ipcam://localhost
	ABD0577	AED 0397	62.9	2014-04-16 09:12:32.65	ipcam://localhost
	HA19577	RAJ 9577	53.6	2014-04-16 09:12:37.41	ipcam://localhost
	RAK5424	RAK 5626	65.5	2014-04-16 09:12:39.121	ipcam://localhost
	C72833	CT 2833	69.4	2014-04-16 09:12:43.742	ipcam://localhost
	8980YD	8980 YD	79.9	2014-04-16 09:12:44.922	ipcam://localhost
	183A8	183 A8	86.4	2014-04-16 09:12:54.494	ipcam://localhost
	7683YQ	7683 YG	60	2014-04-16 09:12:55.864	ipcam://localhost
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View Multiple ALPR Analysis Results

2. Click 🔾.

Once in the **Analysis Results Window**, you can select to view results for other ALPR analyses that you may have previously created for the same device.

In order to view the results of multiple analyses in the same device, follow these steps:

1. On the left hand side of your **Analysis Results Window**, under your selected device, check the boxes for the analysis rules that you wish to see the results for.

.26.79 evious Analysis	9 11:33:30 🗬 💌 ~ 2014-06-10 11:	33:30 🗭 🔹 Plate Search	• ۵۵۵۵۵۵۵ م	
w Analysis Recognition Re	esult Plate Snapshot	Confidence Level Color	Time	Channel
.26.179 8568U5	8568 05	74.9	2014-04-16 09:11:14.538	ipcam://localhost
8766H6W	8766H6	62.5	2014-04-16 09:11:23.777	ipcam://localhost
9C0793	900793	84.4	2014-04-16 09:11:46.061	ipcam://localhost
0576HF	0576HF	82.2	2014-04-16 09:12:18.647	ipcam://localhost
53B888	5388.88	57.1	2014-04-16 09:12:22.248	ipcam://localhost
ABD0577	ABD-0397	62.9	2014-04-16 09:12:32.65	ipcam://localhost
HA19577	RAJ 9577	53.6	2014-04-16 09:12:37.41	ipcam://localhost
RAK5424	RAK 5626	65.5	2014-04-16 09:12:39.121	ipcam://localhost
C72833	CT 2833	69.4	2014-04-16 09:12:43.742	ipcam://localhost
8980YD	8980 YD	79.9	2014-04-16 09:12:44.922	ipcam://localhost
183A8	183 A8	86.4	2014-04-16 09:12:54.494	ipcam://localhost
7683YQ	7683 YG	60	2014-04-16 09:12:55.864	ipcam://localhost

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Watch Analysis Playback

Now that your ALPR analyses have recognized license plates, you can watch the playback of when these license plates appeared.

To watch these videos, **double-click** on a single **Analysis Result** that you would like to review. A new **Player Window** will open, ready to play your event. Please note that for each recognized license plate, **ACTi ALPR Server 1** will also provide video footage of moments leading up to and after the recognition, as determined by "Pre-buffer Time" and "Post-buffer Time" properties in the **New Analysis Window**.



If you cannot see the control buttons located at the bottom of the **Player Window**, hover your cursor over the area it should be located, and it will appear.



Button	C	ptions	Description		
	Open		Allows you to open other files (in RAW format).		
File	Close		Closes the current file that is open.		
Setting	Timestamp		After Setting button is clicked, the Timestamp checkbox will allow you to decide whether or not to show the time and date of the video. If selected, it will appear on the upper left corner of the Player Window .		
	XMI	SmartSearch Properties	After Setting button is clicked and XML Analysis checkbox is marked, you have the option to configure the Smartsearch Properties . If selected, you can decide where or not to display the detection indicators for the algorithms that were used.		
	Analysis	Object Filter	After Setting button is clicked and XML Analysis checkbox is marked, you have the option to configure the Object Filter properties. If selected, you can decide whether or not to display detection indicators for the events that were captured.		
Play / Pa	ause		Allows you to control the playback of the file.		
Progress Bar			Shows the progress of the video playback. You can toggle the blue circle on the progress bar to jump to different parts of the video.		

Player Window Control Buttons

Note

The options that will be shown when selecting **SmartSearch Properties** and **Object Filter** are dynamic. This means that only algorithms that were used when creating the **Analysis Rule** of the video will be available.

Export Search Result

To export the video results of your analysis, **right-click** on the **Analysis Result** of the recognized license plate in your **Analysis Results Window**, and click **"Export Video**".

🖨 Analysis Result							_ 🗆 ×
NVR 172.16.26.175	License Plate Results						
 172.16.26.79 Previous Analysis 	2014-06-09 11:33:30 🗘 🔹 w 2014-06-10 11:33:30 💭 Plate Search 🔎 2000000 🔹						
New Analysis	Recognition Result	Plate Snapshot	Confidence Level	Color	Time	Channel	*
1/2.10.20.1/9	8568U5	8568 US	export video		2014-04-16 09:11:14.538	ipcam://localhost	
	8766H6W	8766H6	02.0		2014-04-16 09:11:23.777	ipcam://localhost	
	9C0793	90,0793	84.4		2014-04-16 09:11:46.061	ipcam://localhost	
	0576HF	0576HF	82.2		2014-04-16 09:12:18.647	ipcam://localhost	
	538888	5388 88	57.1		2014-04-16 09:12:22.248	ipcam://localhost	
	ABD0577	ABD 0397	62.9		2014-04-16 09:12:32.65	ipcam://localhost	
	HA19577	RAJ 9577	53.6		2014-04-16 09:12:37.41	ipcam://localhost	
	RAK5424	RAK 5626	65.5		2014-04-16 09:12:39.121	ipcam://localhost	
	C72833	CT 2833	69.4		2014-04-16 09:12:43.742	ipcam://localhost	
	8980YD	8980 YD	79.9		2014-04-16 09:12:44.922	ipcam://localhost	
	183A8	183 48	86.4		2014-04-16 09:12:54.494	ipcam://localhost	
	7683YQ	7683 YG	60		2014-04-16 09:12:55.864	ipcam://localhost	
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Delete an Analysis Rule

There may be a time when you wish to delete some of the **Analysis Rules** that you have created whether to increase storage space or for aesthetic purposes.

In order to permanently delete analyses, follow these steps:

1. On the left hand side of your **Analysis Results Window**, under your selected device, check the boxes for the analysis rules that you wish to delete.

172 16 26 70						
Previous Analysis	2014-06-09 11:33:3	0 🔹 💌 ~ 2014-06-10 11:3	3:30 🔷 💌 Plate Search	• ۵۵۵۵۵۵۵ ۲		
New Analysis	Recognition Result	Plate Snapshot	Confidence Level Co	olor Time	Channel	
1/2.10.20.1/9	8568U5	8568 US	74.9	2014-04-16 09:11:14.538	ipcam://localhost	
	8766H6W	8766H6	62.5	2014-04-16 09:11:23.777	ipcam://localhost	
	9C0793	90.0793	84.4	2014-04-16 09:11:46.061	ipcam://localhost	
	0576HF	0576HF	82.2	2014-04-16 09:12:18.647	ipcam://localhost	
	538888	5388 88	57.1	2014-04-16 09:12:22.248	ipcam://localhost	
	ABD0577	ABD-0397	62.9	2014-04-16 09:12:32.65	ipcam://localhost	
	HA19577	RAJ 9577	53.6	2014-04-16 09:12:37.41	ipcam://localhost	
	RAK5424	RAK 5626	65.5	2014-04-16 09:12:39.121	ipcam://localhost	
	C72833	CT 2833	69.4	2014-04-16 09:12:43.742	ipcam://localhost	
	8980YD	8980 YD	79.9	2014-04-16 09:12:44.922	ipcam://localhost	
	183A8	183 A8	86.4	2014-04-16 09:12:54.494	ipcam://localhost	
	7683YO	7683.40	60	2014-04-16 09:12:55.864	ipcam://localhost	

Important Notice

Once an analysis rule is deleted, everything related to it (including events and videos captured using the analysis rule) will also be deleted.