



# Parking Management System

User's Manual

V2.0.0

ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD.






# Foreword

## Overview

This manual introduces the functions and operations of the parking management system (hereinafter referred to as "PMS").

## Safety Instructions

The following categorized signal words with defined meaning might appear in the manual.

Signal Words	Meaning
 <b>DANGER</b>	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
 <b>WARNING</b>	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
 <b>CAUTION</b>	Indicates a potential risk which, if not avoided, could result in property damage, data loss, lower performance, or unpredictable result.
 <b>TIPS</b>	Provides methods to help you solve a problem or save you time.
 <b>NOTE</b>	Provides additional information as the emphasis and supplement to the text.

## Revision History

Version	Revision Content	Release Time
V2.0.0	Software version update.	November 2019
V1.1.0	Add user/vehicle/card management, universal API port, WAN access through web interface and client; optimize statistics on the homepage; add reverse vehicle search on PMS client.	July 2019
V1.0.0	First release.	December 2018

# Important Safeguards and Warnings

## Operating Requirements

A suitable working environment is the basis for ensuring the normal operation of the device. Make sure that the following conditions are met before installation.

- Transport, use and store the device within the humidity and temperature allowed. Refer to the technical parameter of corresponding models for the device working temperature and humidity.
- Use and store the device under a stable foundation or in a standard cabinet.
- Pack the device with packaging provided by its manufacturer or packaging with the same quality before transporting it.
- Do not block the vents of the device, and install the device in a well-ventilated place. The distance between multiple devices is preferably greater than 2 cm.
- Do not place the device in the humid, dusty, extremely hot and cold site with strong electromagnetic radiation or unstable illumination.
- Do not put the device in a place near the heat source, such as radiator, heater, stove or other heating equipment, which is to avoid the risk of fire.
- Do not let any liquid enter the device, which is to avoid damage to the internal components; if there is any liquid entering the device, please stop operating the device immediately, cut off the power, plug out all the cables connected to the device. And, contact the local customer service center.
- Do not press hard, violently vibrate, and soak the device when transporting, storing, and installing it.
- During installation, professionals (not from product supplier) are present or make instructions. It is strictly forbidden to disassemble and dismantle the device randomly.
- Backup the data in time during deployment and use, in an effort to avoid data loss caused by abnormal operation.

## Electrical Requirements

Safe and stable power supply is a prerequisite for proper operation of the device.

- Strictly comply with the local electric safety standards.
- Make sure that the ambient voltage is stable and meet the power supply requirements of the device.
- Check whether the power supply is correct before running the device.
- Use an adapter or chassis power supply from the manufacturer.
- Do not connect the power adapter to the device after the adapter is powered on.
- Do not unplug the power cord on the side of the device when the adapter is powered on.
- For permanently connected device, install an obvious and easily identifiable all-pole disconnection unit in the external power circuit of the device.
- When using household or industrial plug for power supply, and then power off by removing the power plug, make a mark near the plug for emergency power cutoff if necessary.

- Do not provide two or more than two kinds of power supply modes; otherwise, the device might be damaged or exposed to safety risk.
- We recommend to using an overcurrent protection device (fuse or air switch) in series with the power circuit of the device. The overcurrent protection rating value is recommended not to exceed 2 times the rated current of the device.
- Always replace the problematic power supply with a new power supply of the same specification.

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# 1 Overview

## 1.1 Introduction

PMS platform centers on the businesses of intelligent entrance/exit management system, and in the meantime, integrates operations relating to video monitoring and entry/exit control. It supports:

- Management of ANPR camera, barrier, LED display, VTO (outdoor station), and other hardware products.
- Management of multiple parking lots.
- Vehicle and owner management.
- Live view and playback of videos from multiple devices and channels.
- Remotely open the barrier.
- Connect VTO (outdoor station) to the platform by one-click, and realize talk between the platform and the VTO (outdoor station).
- Search records of vehicle pass.
- Clear vehicle information on PMS when the vehicle has left the parking lot.
- View diagrams and charts of vehicles that enter or leave an area.
- Research vehicle search by entering the plate number.
- Download and install PMS client.

## 1.2 Configuration Requirements

The recommended configuration is shown in Table 1-1.

Table 1-1 System requirement

Parameter	Description
Processor	Core i3-4160
Memory	4 GB
HDD	500 GB
Operating system	Microsoft Windows 7/Windows 8.1/Windows 10 (64 bit)
Browser	IE9 or later, Chrome, Firefox
Resolution	Recommended resolution: 1280 × 1024 Hardware supports DirectX9.0c or newer



# 2 Config Tool

Config Tool supports refreshing, restarting, stopping services, and modifying service ports.



The Config Tool is installed by default after the server is installed. If you want to reinstall it, download the Config Tool installation package on the web interface of PMS.


Log in to the PMS web interface (see "3.1 Logging in to Web"), and click  to download the installation package. Install the package, and then log in to the tool. The interface shown in Figure 2-1 is displayed.

Figure 2-1 System configuration

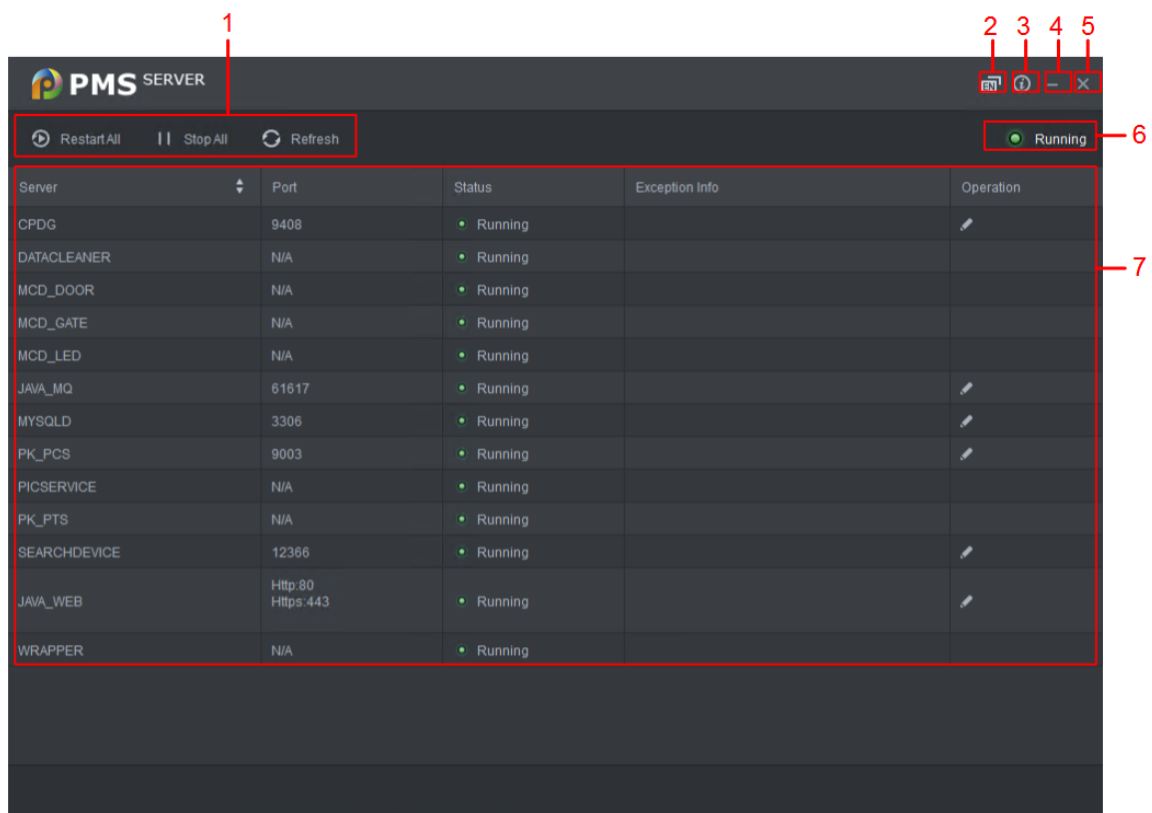
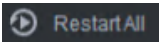
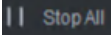
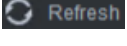








Table 2-1 Interface introduction

No.	Function	Description
1	Service management	<p>Supports the following three operations:</p> <ul style="list-style-type: none"> <li>Click  to restart all services.</li> <li>Click  to stop all services.</li> <li>Click  to refresh services.</li> </ul>
2	Language setting	The system supports Chinese and English. Click the icon to switch languages. The language will be switched after restarting the Config Tool.

No.	Function	Description
3	About	Click the icon to view the software version and release date.
4	Minimize	Click the icon to minimize the Config Tool interface.
5	Close	Close the Config Tool.
6	Overall service status	<p>Displays the overall service status.</p> <ul style="list-style-type: none"> <li>• : Service is starting.</li> <li>• : Service exception.</li> <li>• : Service is stopping.</li> <li>• : Service is running.</li> <li>• : Service stopped.</li> </ul>
7	Service details	Displays each service and the details. Click  to modify the service port number, and then the system will automatically restart the service.

# 3 Web Operation

You can make function and system configurations, as well as view report statistics and logs on the web interface.

## 3.1 Logging in to Web Interface

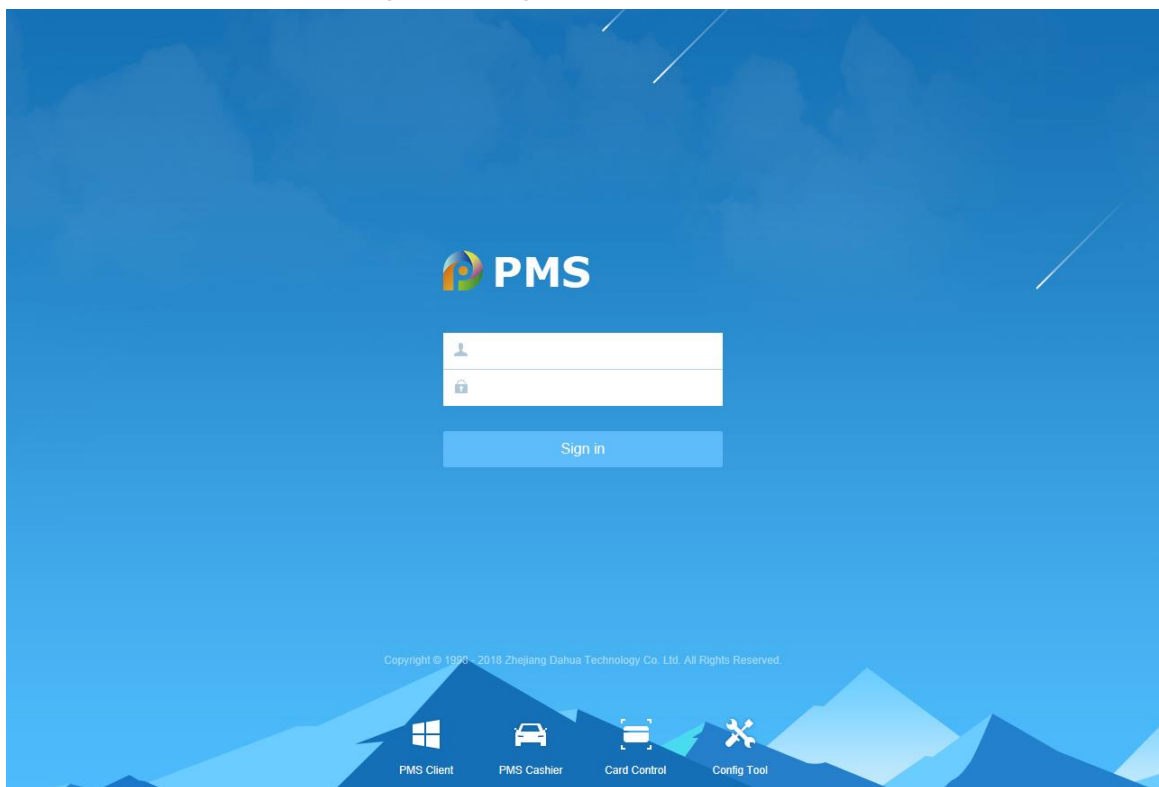
Step 1 Open browser, enter the http://PMS IP address in the browser address bar, and then press the Enter key.





The **Sign in** interface is displayed. See Figure 3-1.



The format of IP address is http://PMS IP address, for example, http://192.168.1.1.

Figure 3-1 Sign in interface



- Click  to download PMS client.
- Click  to download card control.
- Click  to download PMS Cashier client.
- Click  to download Config Tool.

Step 2 Enter the username and the password, and then click **Sign in**.  
The **Homepage** interface is displayed.



- The username/password is system/123456 by default. For first-time login, a box will be displayed for you to change the default password.
- You can also modify the password by clicking **Hi, system**, and then clicking **Change Password**.
- If the password is entered wrong for 6 consecutive times, the account will be locked for 10 minutes.
- Recovering the password requires collecting some basic user information.

## 3.2 Homepage

You can make function and system configurations, and view report statistics and logs on the web interface.

Log in to PMS according to steps shown in "3.1 Logging in to Web", and the **Homepage** interface is displayed. See Figure 3-2 and Table 3-1.

Figure 3-2 Homepage

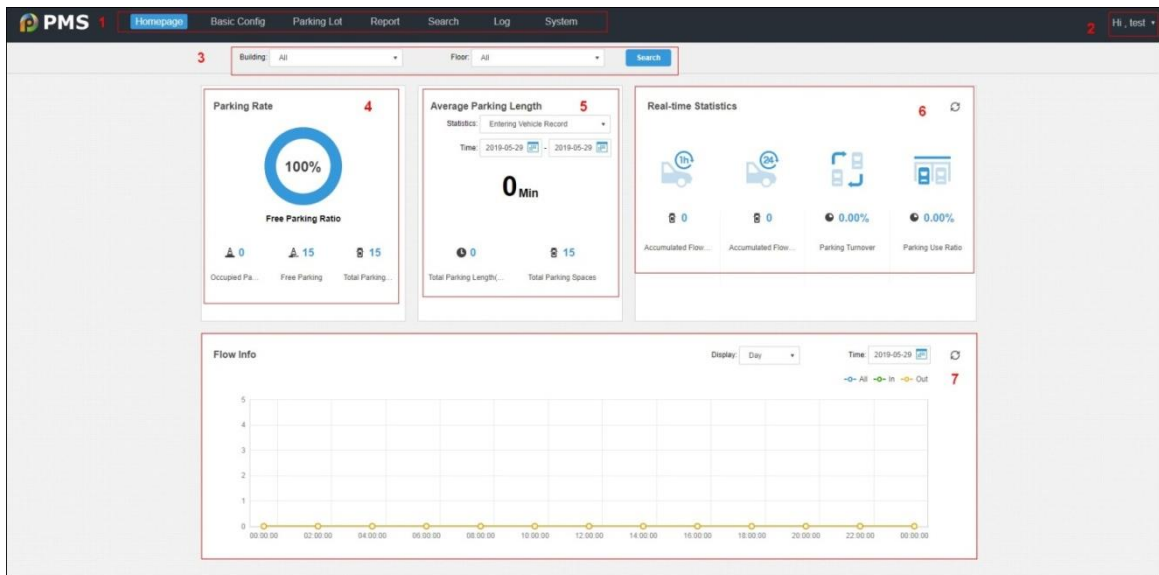






Table 3-1 Homepage description

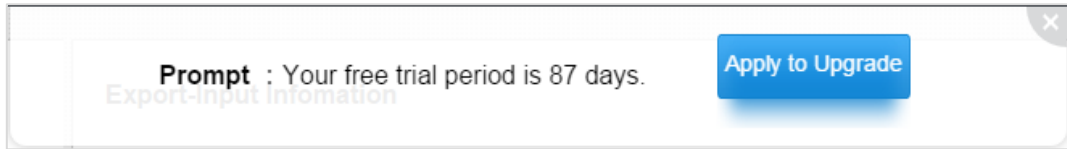
No.	Name	Description
1	Menu	Displays the menu of system functions.
2	Username	Displays login username. Click  on the right, and you can do operations such as modifying username, logging out, applying for upgrading license, and viewing software license agreement.

No.	Name	Description
3	Search parking lot	<p>Click ▾ on the right, select parking lot name, and click <b>Search</b>, then you can view information of the selected parking lot, such as parking rate, and average parking duration.</p> <ul style="list-style-type: none"> <li>• If <b>Entrance/Exit Channels</b> is selected from <b>System &gt; Vehicle Info Statistics &gt; Vehicle Info Statistics Source</b>, click ▾, select the parking lot name, and then click <b>Search</b>, the information of the selected parking lot will be displayed.</li> <li>• If <b>Spot Detector Channels</b> is selected from <b>System &gt; Vehicle Info Statistics &gt; Vehicle Info Statistics Source</b>, click ▾, select the parking lot name, and then click <b>Search</b>, the information of the parking lot where the vehicle detector locates will be displayed.</li> </ul>
4	Parking rate	Displays ratio of available parking space, occupied parking space, and total parking space.
5	Average parking length	<p>Displays the average parking length, total parking length, and total parking space of the selected parking area within the selected period.</p> <p>Click , and then you can change statistics period of average parking length. Click the <b>Statistics</b> drop-down list to view <b>All Vehicles</b> or <b>Appeared Vehicles</b> (vehicles that have left the parking lot).</p>
6	Real-time statistics	Displays accumulated vehicle flow per hour/per day, parking turnover rate, and parking usage rate of the selected parking lot. Click  to refresh real-time statistics.
7	Vehicle flow information	<p>Displays curve of flow change in the parking lot. Move the mouse pointer to the curve, and you can view the time information, and vehicle flow data (OUT, IN, and ALL) at a specific time.</p> <ul style="list-style-type: none"> <li>• Click ▾ next to <b>Display</b>, and then you can select to view the flow information by Day/Week/Month/Year.</li> <li>• Click  next to <b>Time</b> to change the period that vehicle flow is displayed.</li> <li>• Click <b>All</b>, <b>In</b> or <b>Out</b>, the icon turns blue, green, or orange, and the corresponding vehicle flow curve will be displayed. Click the icon again, it becomes grey, and the corresponding curve will not be shown.</li> </ul>

### 3.3 License

- For users who have installed PMS, they can enjoy a free trial up to 90 days with a maximum connection of 2 cameras, 10 vehicle detectors, and 10 more device channels. On the **Homepage** interface, you can view the remaining free days in this trial in a pop-up box. See Figure 3-3.

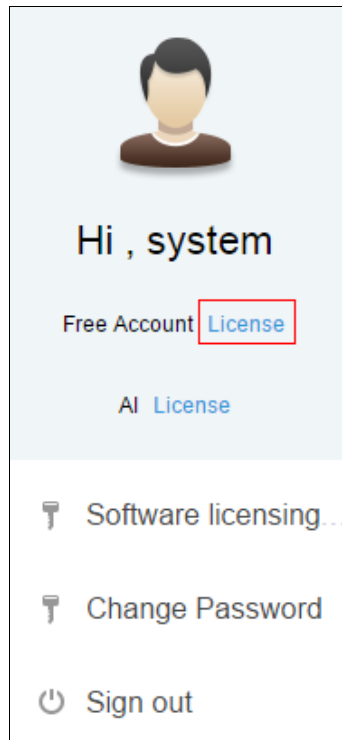
Figure 3-3 Trial prompt



- Alternately, you can apply for upgrading your license to enjoy the service permanently. Here introduces how to upgrade your license.

Step 1 Move the mouse pointer to the username at the upper-right side, and then the user information is displayed. See Figure 3-4.

Figure 3-4 User information



Step 2 Click **Apply to Upgrade** shown in Figure 3-3 or **License** next to **Free Account** in Figure 3-4.

The **Apply to Upgrade** interface is displayed. See Figure 3-5 and Table 3-2.

Figure 3-5 Apply to upgrade

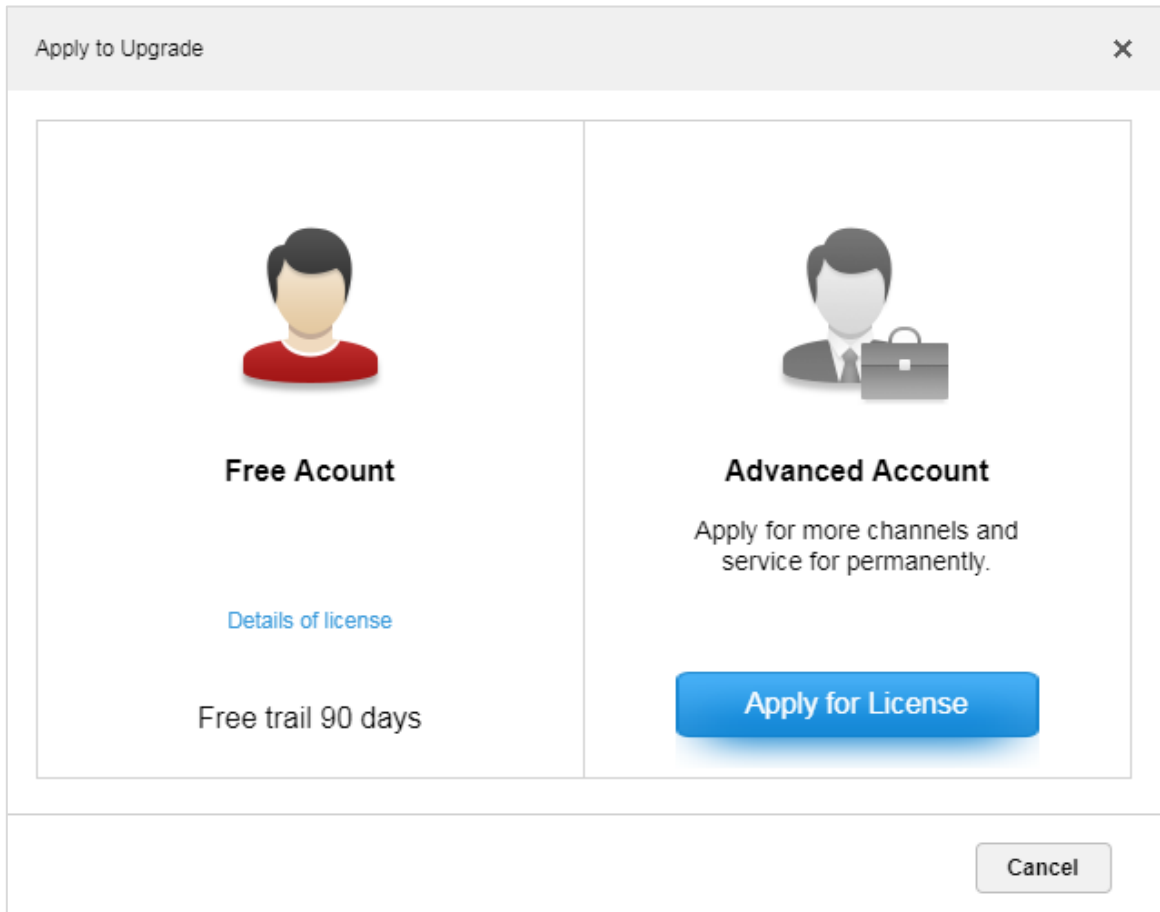


Table 3-2 Details of different accounts

Parameter	Description
Free Account	Free for all general users with period up to 90 days and a maximum connection of 2 channels.
Advanced Account	Apply for license to upgrade to advanced account, which has no limitation on the period and you can enjoy more channels.

**Step 3** Click **Apply for License**.

The **Apply for License** interface is displayed. See Figure 3-6 and Table 3-3.

Figure 3-6 Enter license information

Table 3-3 License information description

No.	Name	Description
Step 1	Export	Click <b>Export</b> to automatically generate and download the LicenseInfo.zip file needed by the system.
Step 2	Get license file	Send the exported LicenseInfo.zip file to our salesman, so you can get the reg.dat license file.
Step 3	Import	Click <b>Import</b> to import the reg.dat file into the system.

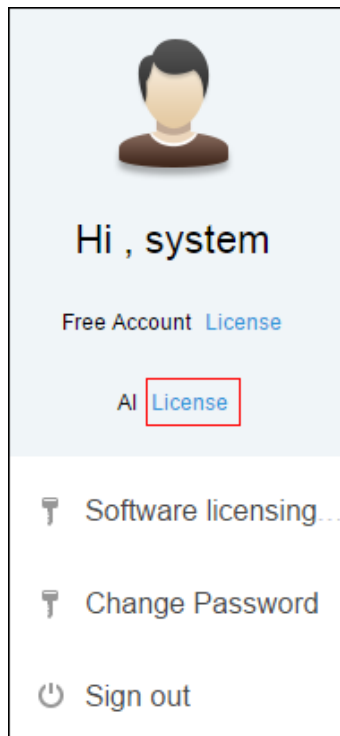
### 3.4 Importing Algorithm

PMS platform supports importing algorithm of license plate recognition.

Step 1 Move your mouse pointer to the username at the upper-right side, and then the user information is displayed. See Figure 3-7.



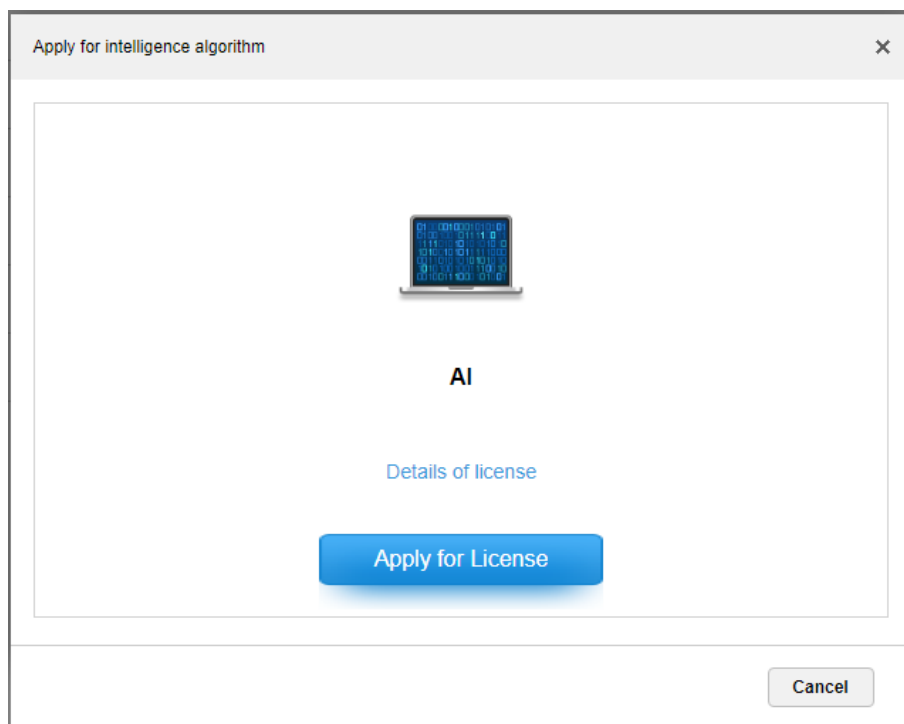
Figure 3-7 User information



Step 2 Click **License** next to **AI**.

The **Apply for intelligence algorithm** interface is displayed. See Figure 3-8.

Figure 3-8 Apply for intelligence algorithm (1)



Step 3 Click **Apply for License**.

The **Apply for intelligence algorithm** interface is displayed. See Figure 3-9 and Table 3-4.

Figure 3-9 Apply for intelligence algorithm (2)

The dialog box titled "Apply for intelligence algorithm" contains the following steps:

- Step 1:** Export License File. [Export]
- Step 2:** Contact with salesman to get license file.
- Step 3:** Import License File. [Import]

[Cancel]

Table 3-4 Algorithm information description

No.	Name	Description
Step 1	Export	Click <b>Export</b> to automatically generate and download the License.dat file needed by the system.
Step 2	Get license file	Send the exported License.dat file to our salesman.
Step 3	Import	After getting the license file, import it to PMS.

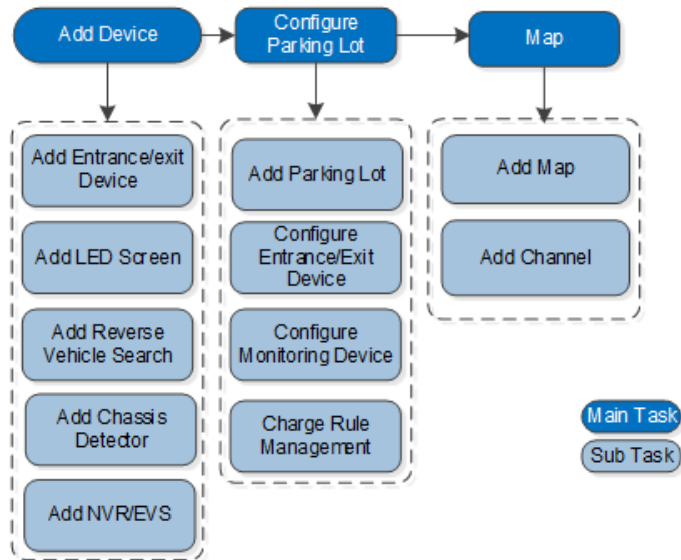
## 3.5 Quick Configuration

The quick configuration flow is shown in Figure 3-10.



The configuration flow is an example that illustrates the major procedures. You can add devices according to your actual needs.

Figure 3-10 Quick configuration flow



### 3.5.1 Adding Device

Add different types of devices to PMS, and then you can import device data for statistics.

**Step 1** Select **Basic Config > Device**.

The **Device** interface is displayed. See Figure 3-11.

In the **Status** column, grey icon will be displayed when device is offline, and green when device is online. You can click the **Type** column to view the information of each device type.

Figure 3-11 Device

<span>+ Add</span> <span>🗑 Delete</span> <span>📄 Import</span> <span>📄 Download Template</span> <span>🔍 Code/Name/IP</span> <span>📄 Export Spot Det...</span> <span>📄 Export</span>							
<span>All</span> <span>Entrance/Exit Device</span> <span>LED Screen</span> <span>EVS</span> <span>All-in-one</span> <span>Chassis Detector</span> <span>Status: All</span>							
<input type="checkbox"/>	Code	Name	Type	IP Address	Status	Offline Cause	Operation
<input type="checkbox"/>	1000016	999	Guide Screen		Offline	Unknown.	✎ ✕
<input type="checkbox"/>	1000015	99	All-in-one Reve...		Offline	Unknown.	✎ ✕
<input type="checkbox"/>	1000014	9,244	Remaining Par...		Offline	Unknown.	✎ ✕
<input type="checkbox"/>	1000011	1	ITC		Online	-	✎ ✕
<input type="checkbox"/>	1000010	44	ITC		Online	-	✎ ✕
<input type="checkbox"/>	1000006	cd	Chassis Detector		Offline	Unknown.	✎ ✕
<input type="checkbox"/>	1000005	1 1	Access ANPR Kit		Online	-	✎ ✕
<input type="checkbox"/>	1000004	1 9	EVS		Online	-	✎ ✕
<input type="checkbox"/>	1000003	1 4	IPC		Online	-	✎ ✕
<input type="checkbox"/>	1000002	in	ITC		Online	-	✎ ✕
<input type="checkbox"/>	1000001	out	ITC		Online	-	✎ ✕
<input type="checkbox"/>	1000000	1 9	Spot Detector D...		Online	-	✎ ✕



Despite adding device, you can:

- Click of the corresponding device to modify device information.
- Click of the corresponding device to delete it; select  before one or multiple devices, then click Delete to delete such device.
- Click Download Template to import device information to PMS. Click Export to export the information. You need to enter the login password and encryption password to open the exported Excel file.
- Click Export Spot Det... to export the parking space information corresponding to the vehicle detector.

**Step 2** Click Add.

The **Add Device** interface is displayed. See Figure 3-12.

Figure 3-12 Add device

The screenshot shows the 'Add Device' dialog box with the following fields and values:

- Device Type:** Entrance/Exit Device
- Basic Info:**
  - Name: \*
  - Model: \*
  - Type: Spot Detector Device
  - IP Address: \*
  - Port: 37777
  - Username: \* admin
  - Password: \* \*\*\*\*\*
- Channel Info:**
  - Channel Quantity: \* 1
  - Channel Name 1: \*
  - Server: PTS( )
  - Parking Count: \* 1
  - No.1 parking: Building, Floor, Parking No.

Buttons: Get Info, OK, Cancel

**Step 3** Select **Device Type**.

Here introduces how to add devices according to the device type to be added.

### Adding Entrance/Exit Device

- 1) Select **Entrance/Exit Device** from the **Device Type** list.  
The interface shown in Figure 3-13 is displayed.


Figure 3-13 Add entrance/exit device



2) Configure the parameters. See Table 3-5.



Parameters with \* are required.

Table 3-5 Description of adding entrance/exit device

Parameter	Description
Name	Set device name.
Model	Select device model.
Type	You can select from <b>Spot Detector Device</b> (parking space detector), <b>ITC, NVR, IPC, ITC215, Access ANPR Kit</b> .
IP Address	Enter the IP address of device.
Port	Enter the device port.
Username	Enter the username for logging in to the device.
Password	Enter the password for logging in to the device.
Channel Quantity	Set the number of channels.
Server	Select the type of server according to actual conditions. For entrance/exit device, only picture transfer service (PTS) is available.
Channel Name1	Enter the channel name, which correlates to the device name.
Parking Count	Enter the number of parking space linked to the corresponding channel.  You can configure this parameter when <b>Sport Detector Device</b> is selected from the <b>Type</b> list.

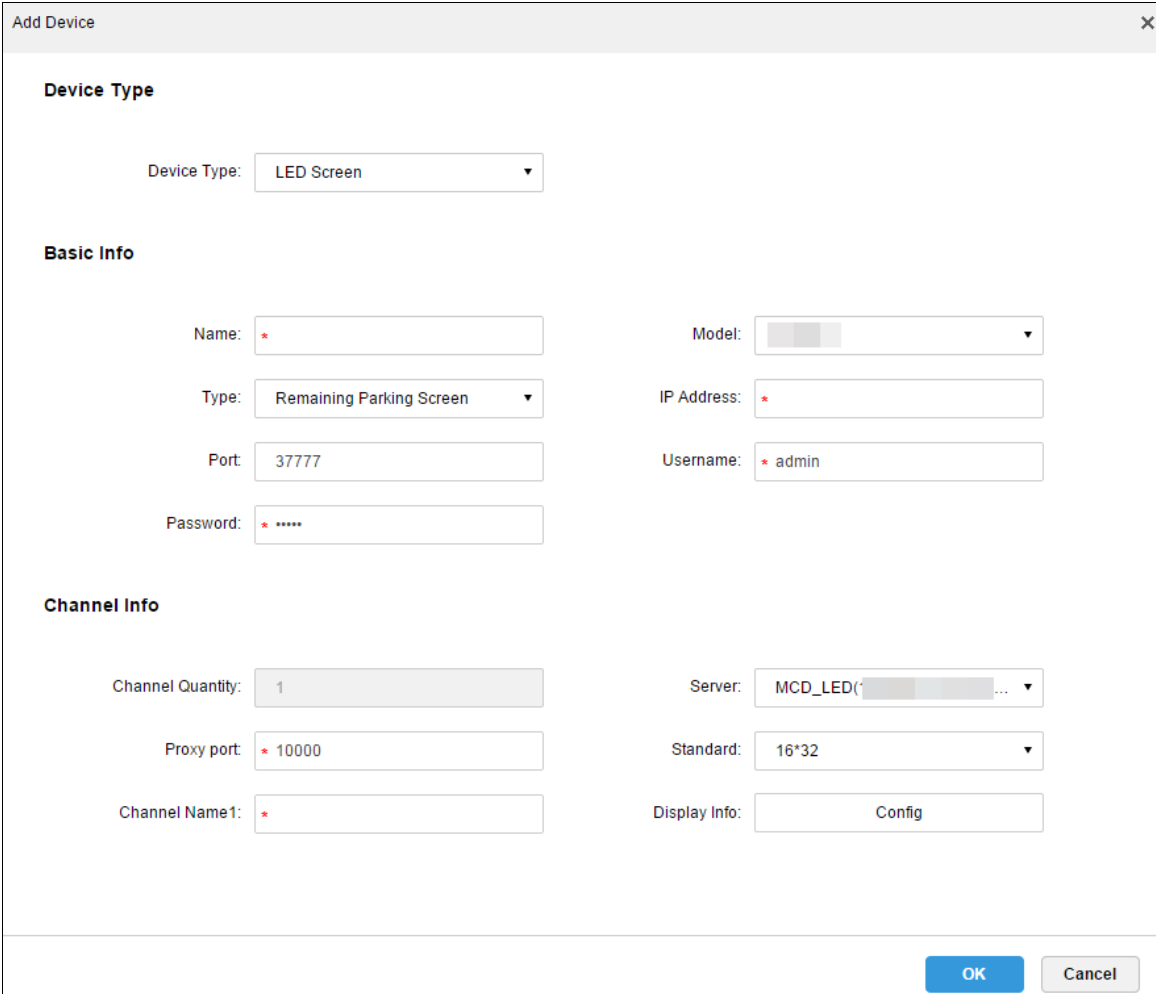
Parameter	Description
No.1 parking	Set the building, floor, and parking space No. of each parking space.
Binding ITC	Click <b>Select</b> , and the <b>Binding ITC</b> interface is displayed. Select the ITC according to your actual condition.  You can configure the parameter when <b>IVS-T</b> is selected from <b>Type</b> list.
Common Memo	Click <b>On</b> to enter memo for the channel. You can click <b>Off</b> to turn this function off.  You can configure this parameter when <b>Access ANPR Kit</b> is selected from the <b>Type</b> list.

- 3) Click **Get Info** to acquire the parking space information of spot detector device (parking space detector).
- 4) Click **OK** to save the configuration.

### Adding LED Screen

- 1) Select **LED Screen** from the **Device Type** list.  
The interface shown in Figure 3-14 is displayed.

Figure 3-14 Add LED screen




- 2) Configure the parameters. See Table 3-6.



Parameters with \* are required.

Table 3-6 Description of adding LED screen

Parameter	Description
Name	Set device name.
Model	Select device manufacturer.
Type	You can select from Remaining Parking Screen, Guide Screen, or Information Screen.
IP Address	Enter the IP address of device.
Port	Enter the device port according to actual conditions.
Username	Enter the username for logging in the device.
Password	Enter the password for logging in the device.
Channel Quantity	Set the number of channels.
Server	Select the type of server according to actual conditions. For LED screen, only MCD_LED service is available.
Proxy Port	Enter the port according to the actual conditions.
Standard	Select the size of the LED screen.
Channel Name1	Enter the channel name, which correlates to the device name.
Display Info	Click <b>Config</b> to set up the information displayed on the LED screen.
Show Number of Row	Set the rows that will be displayed on the information display.  You can configure the parameter when <b>Information Display</b> is selected at <b>Type</b> .

- 3) Set the information displayed on the LED screen. See Figure 3-15, Figure 3-16, Figure 3-17 and Table 3-7.

Figure 3-15 Set parking space available display

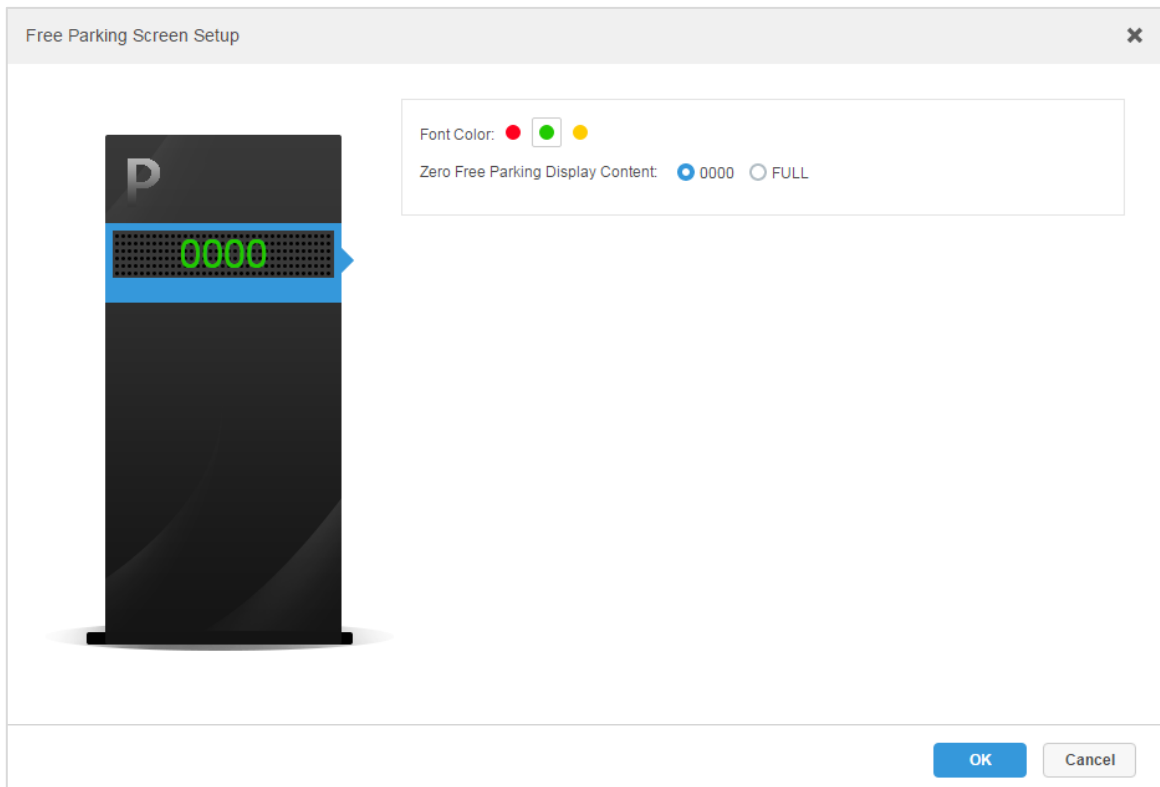


Figure 3-16 Set guide screen

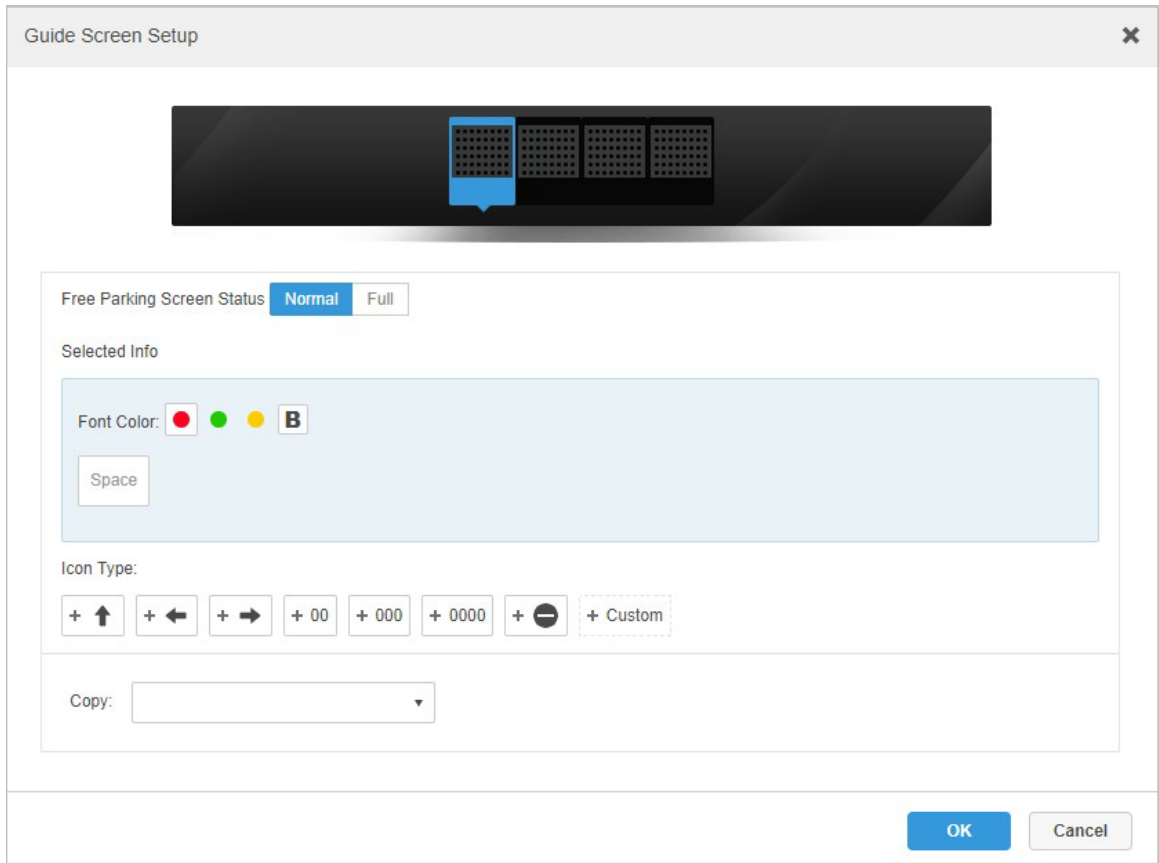


Figure 3-17 Set information screen

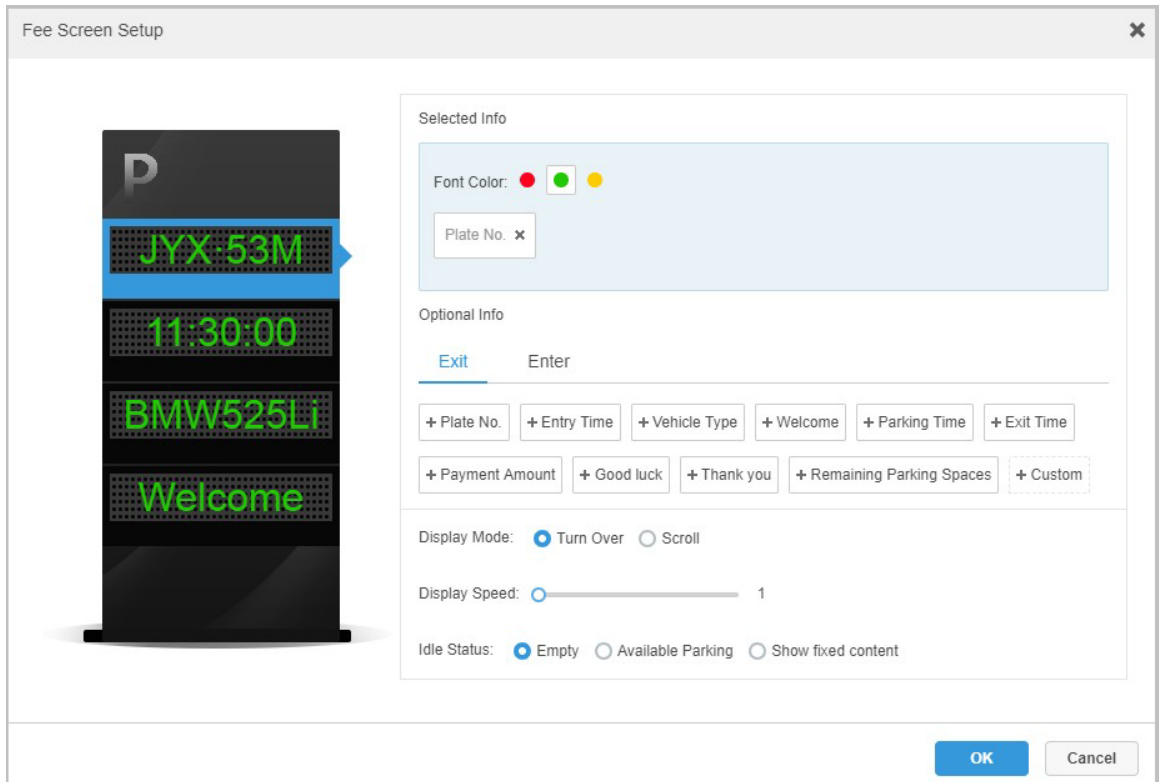


Table 3-7 Description of setting LED screen

Parameter	Description
Font Color	Set the color of font on the screen. You can select from red, green, or yellow.



Parameter	Description
Zero Free Parking Display Content	Set the information displayed on the screen when no parking space is available in the parking lot. You can select from <b>0000</b> or <b>FULL</b> .
Optional Info	Set the content displayed on the screen. Click any item, and the corresponding content will be displayed on the screen.
Display mode	Set the method that the information displays on the screen. You can select from <b>Turn Over</b> or <b>Scroll</b> .
Display Speed	Set the speed that the information displays on the screen, ranging from 1 to 100. The larger the value is, the faster the information displays.
Idle Status	Select <b>Show fixed content</b> , and then enter the content that you want to display on the screen.
Icon Type	Select the icon to be displayed on the screen.
Icon Position	Set the position of the icon. You can select from <b>Left</b> or <b>Right</b> .

- 4) Click **OK** to save screen configurations, and the system goes back to the **Add Device** interface.
- 5) Click **OK**.

### Adding Access Controller

- 1) Select **Access Controller** from the **Device Type** list.  
The interface shown in Figure 3-18 is displayed.

Figure 3-18 Add access controller

- 2) Configure the parameters. See Table 3-8.



Parameters with \* are required.

Table 3-8 Description of adding VTO

Parameter	Description
Name	Set device name.
Model	Select device manufacturer.
Type	You can select from <b>VTO</b> (outdoor station), <b>MIS-POS</b> , or <b>I/O Box</b> .
IP Address	Enter the IP address of device.
Port	Enter the device port according to actual conditions.
Username	Enter the username for logging in the device.
Password	Enter the password for logging in the device.
Channel Quantity	Set the number of channels.
Server	Select the type of server according to actual conditions. For VTO, only MCD_DOOR service is available.
Proxy Port	Enter the channel name, which correlates to the device name.
Channel Name1	Enter the channel name, which correlates to the device name.

3) Click **OK**.

#### **Adding EVS (Embedded Video Storage Server)**

- 1) Select **EVS** from the **Device Type** list.  
The interface shown in Figure 3-19 is displayed.

Figure 3-19 Add EVS

2) Configure the parameters. See Table 3-9.



Parameters with \* are required.

Table 3-9 Description of adding EVS

Parameter	Description
Name	Set device name.
Model	Select device manufacturer.
Type	EVS
IP Address	Enter the IP address of device.
Port	Enter the device port according to actual conditions.
Username	Enter the username for logging in the device.
Password	Enter the password for logging in the device.
Channel Quantity	Set the number of channels.
Server	Select the type of server according to actual conditions. For EVS, only picture transfer service (PTS) is available.
Channel Name1	Enter the channel name, which correlates to the device name.
Binding Channel	Click <b>Select</b> , and the <b>Binding Channel</b> interface is displayed. Select channel according to your actual condition.
Get Info	Click to acquire all the channel information of EVS device.

3) Click **OK**.

## Adding All-in-one Device

- 1) Select **All-in-one** from the **Device Type** list.  
The interface shown in Figure 3-20 is displayed.

Figure 3-20 Add all-in-one device

- 2) Configure the parameters. See Table 3-10.



Parameters with \* are required.

Table 3-10 Description of adding all-in-one device

Parameter	Description
Name	Set device name.
Manufacturer	Select device manufacturer.
Type	Select the type of all-in-one device. It is all-in-one reverse vehicle search device by default.
IP Address	Enter the IP address of device.

- 3) Click **OK** to save the configuration.

## Adding Chassis Detector

- 1) Select **Chassis Detector** from the **Device Type** list.  
The interface shown in Figure 3-21 is displayed.

Figure 3-21 Add chassis detector

- 2) Configure the parameters. See Table 3-11.



Parameters with \* are required.

Table 3-11 Description of adding chassis detector

Parameter	Description
Name	Set device name.
Model	Select device manufacturer.
Type	It is chassis detector by default.
IP Address	Enter the IP address of device.
Channel Quantity	The channel quantity cannot be edited. It is 1 by default
Channel Name	Enter the channel name, which correlates to the device name.

- 3) Click **OK**.

### Adding Ultrasonic Parking Space Controller

- 1) Select **Ultrasonic Parking Space Controller** from the **Device Type** list.  
The interface shown in Figure 3-22 is displayed.

Figure 3-22 Add ultrasonic parking space controller

2) Configure the parameters. See Table 3-12.



Parameters with \* are required.

Table 3-12 Description of adding ultrasonic parking space controller

Parameter	Description
Name	Set device name.
Model	Only ST is available.
Type	Only ST Node Controller is available.
IP Address	Enter the IP address of device.
Device SN	Enter the serial number of ultrasonic parking space controller.

3) Click **OK**.

## 3.5.2 Configuring Parking Lot

### 3.5.2.1 Adding Parking Lot

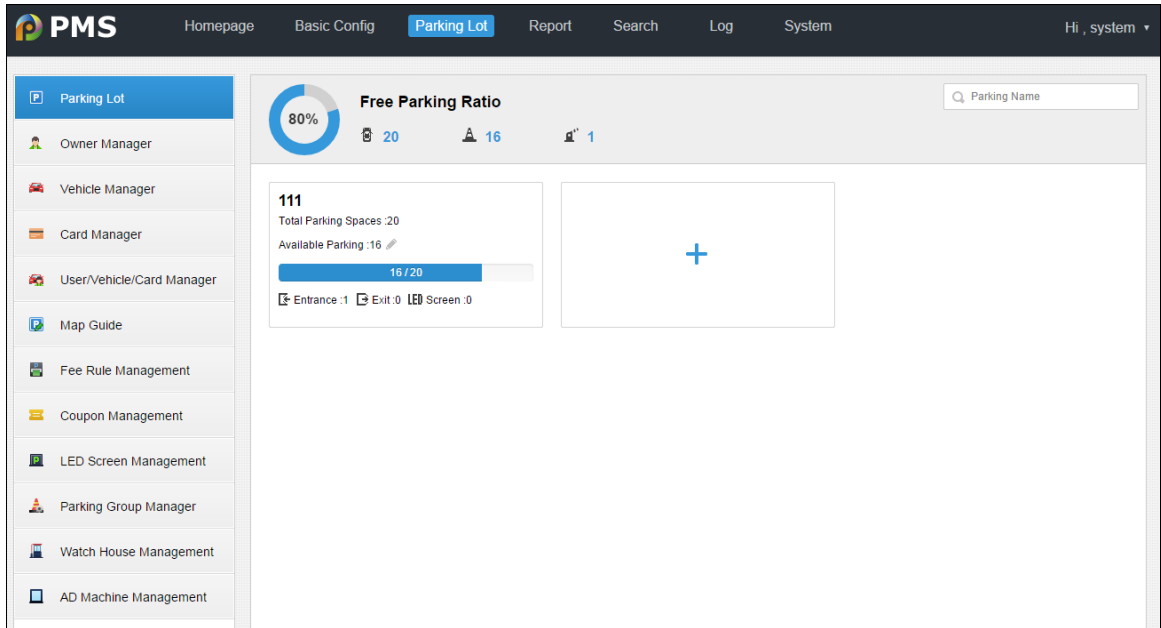
You can add new parking lot, and configure the details of parking lot, such as parking information, entrance/exit device configuration, and monitoring device configuration.

#### Adding Parking Information

Step 1 Click the **Parking Lot** tab, and then select **Parking Lot**.

The **Parking Lot** interface is displayed. See Figure 3-23.

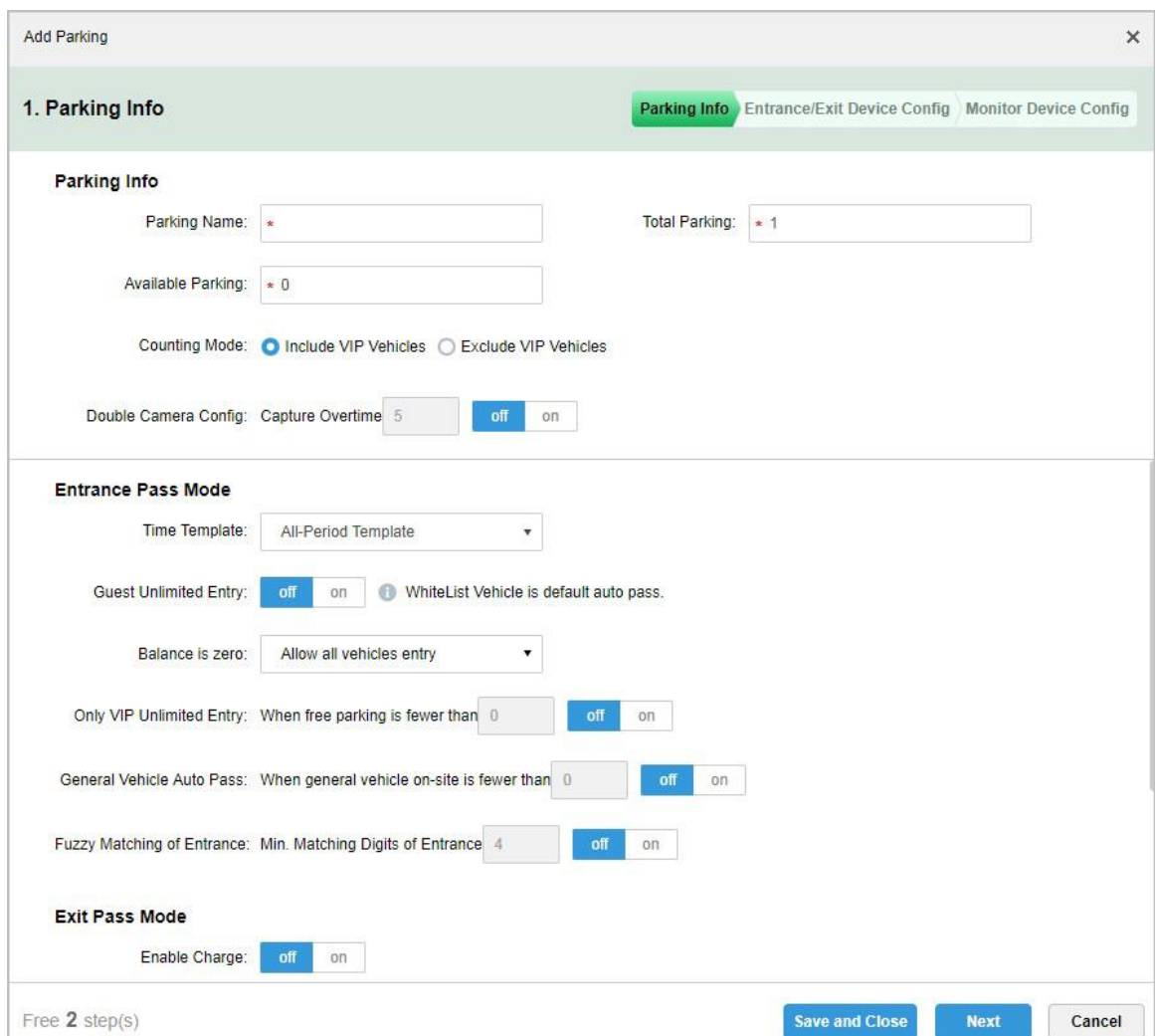
Figure 3-23 Parking lot



**Step 2** Click **+**.

The **Add Parking** interface is displayed. See Figure 3-24.

Figure 3-24 Add parking lot



**Step 3** Configure parameters. See Table 3-13.

Table 3-13 Description of adding parking lot (1)

Parameter	Description
Parking Name	Enter the name of the parking lot.
Total Parking	The total parking space in the parking lot.
Available Parking	The parking space available in the parking lot.
Counting Mode	You can select Include VIP Vehicles or Exclude VIP Vehicles.
Double Camera Config	Select <b>on</b> , and then you can set the interval that the camera takes a snapshot.

**Step 4** Click ▼ in the **Time Template** drop-down list to select a time template or click + to add a customized time template. Here introduces how to add a customized time template.


1) Click +.

The **New Time Template** interface is displayed, see Figure 3-25.




Figure 3-25 Add new time template

The screenshot shows a window titled "New Time Template" with a close button (X) in the top right. Below the title bar, there are two input fields: "Template Name:" followed by a text box with a red asterisk, and a "Copy:" checkbox followed by a dropdown menu. The main area contains a 24-hour timeline for each day of the week (Mon, Tue, Wed, Thu, Fri, Sat, Sun). Each day's timeline is represented by a horizontal bar with 24 segments, each corresponding to an hour from 0 to 24. A gear icon is located at the end of each day's bar. At the bottom right of the window, there are two buttons: "OK" (blue) and "Cancel" (grey).

2) Enter the template name.

3) Move the mouse pointer to the timeline, and when the pointer changes to , you can draw time template, which will be displayed in green when finished.



- Move your mouse pointer to the time template drawn, and when the pointer changes into , click the template you have drawn to delete it.
- Click  before each day to select one or more day(s) of a week. Click the first  to select the whole week.

4) (Optional) Select the **Copy** check box, click ▼, and then select a time template, then you can copy the setting of the time template to the customized template.

5) Click **OK** to save the configuration.



Step 5 Configure parameters. See Table 3-14.

Table 3-14 Description of adding parking lot (2)

Parameter	Description
Guest Unlimited Entry	Select whether to enable auto release for guest vehicles.
Balance is zero	Select the entry rule when no parking space is available.
Only Unlimited Entry	Select whether to enable auto release for VIP vehicles when parking space available is less than the defined number.
General Vehicle Auto Pass	Select whether to enable auto release for general vehicles when parking space available is less than the defined number.
Fuzzy Matching of Entrance	For whitelist vehicle, by turning on fuzzy matching of entrance, the vehicle will be released when the digits of its license plate reach or exceed the defined digits.
Enable Charge	Select <b>on</b> or <b>off</b> to enable or disable charging parking fees.
Fuzzy Matching of Exit	For whitelist vehicle, by turning on fuzzy matching of exit, the vehicle will be released when the digits of its license plate reach or exceed the defined digits.
Overtime Alarm	Select <b>on</b> to turn on overtime alarm, and set the time (24 hours at most) that alarm will be triggered.
Free Parking Space Correction	Select <b>on</b> to turn on Remaining Parking Correction to regularly reset the remaining parking data. This helps avoid data error that might happen after long-time operation.

Step 6 Click **Next**.

The **Entrance&Exit Device Config** interface is displayed. See Figure 3-26.



Click **Save and Close**, and you can save the current setup and close the page.

Figure 3-26 Entrance & exit device configuration

### Configuring Entrance&Exit Device

**Step 1** Click **+**.

The **Optional ITC Channel** interface is displayed. See Figure 3-27.

Figure 3-27 Entrance & exit device configuration

Channel Name	Manufacturer	Type	IP Address	Port	Server	Status
ITC-IN_1	DAHUA	ITC	19.35.98.28	37778	PTS(9101)	Online
ITC-OUT_1	DAHUA	ITC	19.35.98.28	37779	PTS(9101)	Online

**Step 2** Select ITC channel, and then click **Complete**.

The added ITC channel is displayed on the **Entrance/Exit Device Config** interface.

**Step 3** Set the direction of entrance/exit device according to the actual needs. You can select **Enter**, **Exit**, or **Inner**. If **Double Camera Config** is turned on in the previous step, then assist camera can be added. See Figure 3-28.

Figure 3-28 Entrance & exit device direction

Add Parking

2. Entrance/Exit Device Config

Parking Info Entrance/Exit Device Config Monitor Device Config

777777\_1 x +

**Direction Config**

Enter  Exit  Inner

**Binding ANPR**

Main Camera

Channel Name: 777777\_1 Manufacturer: DAHUA Type: ITC

IP Address: 1.3.9.10 Port: 37777 Server: PTS(9101)

Status: Offline

**Add Assist Camera**

**Binding VTO**

+ Add

Channel ...	Manufact...	Type	IP Address	Port	Server	Status	Operation
Please click Add button to bind new VTO channel.							

**Binding LED**

Free 1 step(s)

Previous Save and Close Next Cancel

**Step 4** (Optional) Bind LED device, chassis detector, and more. For procedures, see the steps of adding entrance/exit device.

**Step 5** Click **Next**.

The **Monitoring Device Config** interface is displayed. See Figure 3-29.



Click **Save and Close**, and you can save the current setup and close the page.

Figure 3-29 Monitoring device configuration

3. Monitor Device Config

+ Add

Channel Name	Manufacturer	Type	IP Address	Port	Server	Status	Operation
Please click Add button to bind new IPC channel.							

Free 0 step(s)

Previous Save and Close Cancel

### Configuring Monitoring Device

**Step 1** Click **+**.

The **Monitor Device Channel Available** interface is displayed. See Figure 3-30.

Figure 3-30 Monitoring device configuration

Channel Name	Manufacturer	Type	IP Address	Port	Server	Status
kanled_10.3...	DEHUA	IPC	10.25.22.49	37777	PTS(9101)	Online

Complete

**Step 2** Select monitoring device channel, and then click **Complete**.

The added monitoring device channel is displayed on the **Monitor Device Config** interface. See Figure 3-31.

Figure 3-31 Monitor device config

3. Monitor Device Config

Channel Name	Manufacturer	Type	IP Address	Port	Server	Status	Operation
kanled_10...	DAVIA	IPC	192.168.1.10	37777	PTS(9101)	Online	✕

The remaining 0 step(s)

Previous Save and Close Cancel

**Step 3** Click **Save and Close**.

The system goes back to the **Parking Lot** interface.

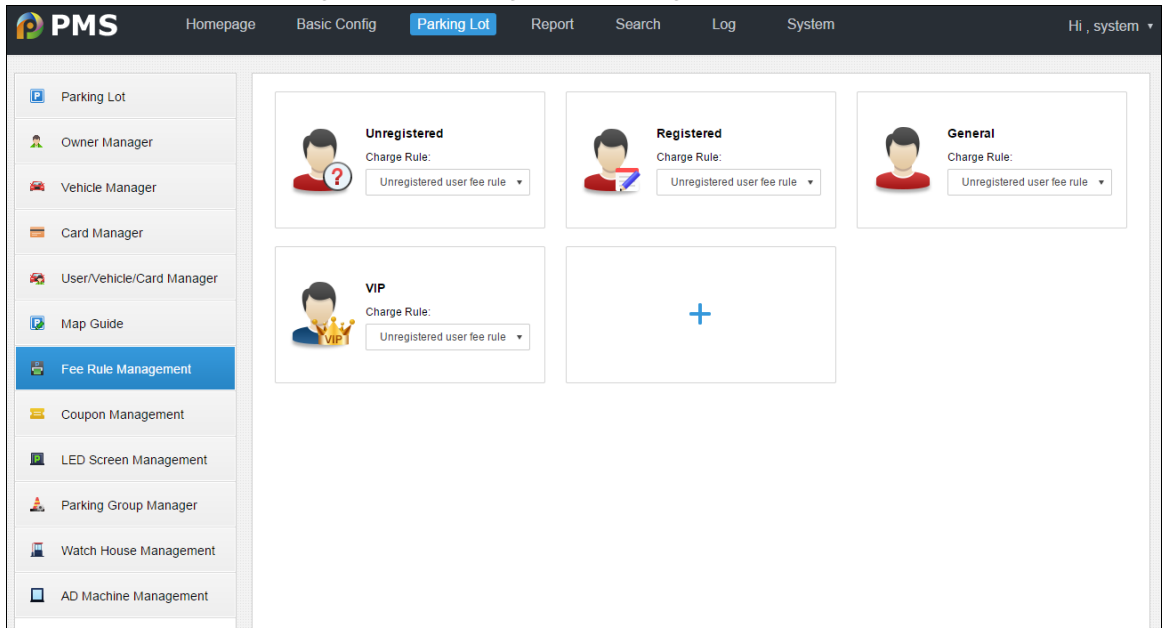
### 3.5.2.2 Charge Rule Management

After setting the parking lot, you need to set the charge rule in this parking lot.

**Step 1** Select **Parking Lot > Fee Rule Management**.

The **Fee Rule Management** interface is displayed. See Figure 3-32.

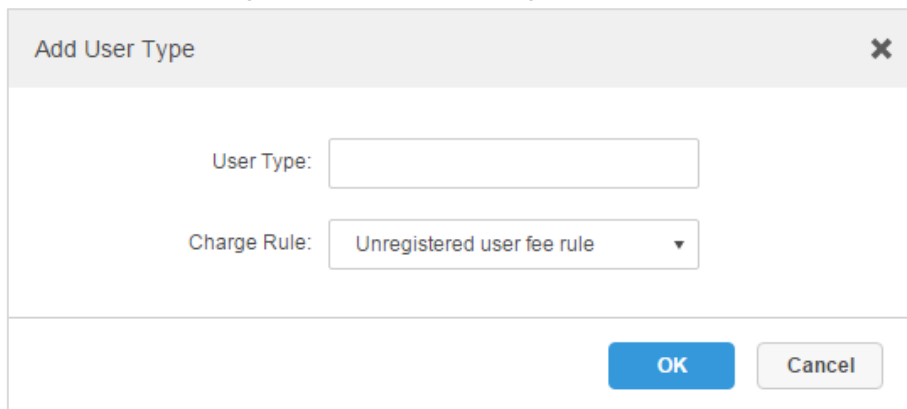
Figure 3-32 Charge rule management



**Step 2** Click **+** to create a user group.

The **Add User Type** interface is displayed. See Figure 3-33.

Figure 3-33 Create user group



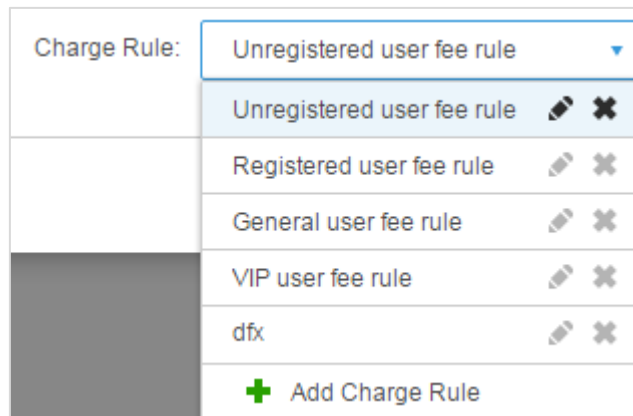
**Step 3** Set user type and charge rule.

You can add new charge rule, or modify or delete the existing charge rule. See Figure 3-34.



Click **▼** in the **Charge Rule** drop-down list to add, modify or delete charge rule.

Figure 3-34 Set charge rule



- Add charge rule.

1) Click **+**.

The **Add Charge Rule** interface is displayed. See Figure 3-35.

Figure 3-35 Add charge rule (booth charge)

2) Set the charge rules. You can select from **Booth Charge** and **Central Charge**.

- **Booth Charge:** Vehicles need to pay the parking fees at the guard booth before leaving the parking lot. See Figure 3-35 and Table 3-15.
- **Central Charge:** Vehicles can pay the parking fees at the guard booth or any booth in the parking lot that has installed with PMS and can settle the parking fee. See Figure 3-36 and Table 3-16.

Table 3-15 Description of charge rule (booth charge)

Parameter	Description
Max Charge	Set the upper limit of daily parking fee.
Free Minutes	Set the length of free parking in the parking lot. No parking fees will be charged within the defined time, and the system starts charging after the end of free minutes.


Parameter	Description	
Charge by Hour/Day	<p>Set the parking fees for different time lengths.</p> <ul style="list-style-type: none"> <li>• <b>\$</b>: Charge different fees for different parking hours. You need to manually set the charging fee of each hour.</li> <li>• <b>\$/Hour</b>: Set average parking fee for each hour. Fox example, if you set \$10 for 1 Hour, then the parking fee for 3 Hours is \$30, and the like.</li> <li>• <b>\$/Day</b>: Set average parking fee for each day. Fox example, if you set \$10 for 1 Day, then the parking fee for 2 Days is \$20, and the like.</li> </ul>	
Charge by Time Period	<p>Different charging rates are set for different time periods. You can define multiple periods and set different charge rules for them.</p> <ul style="list-style-type: none"> <li>• <b>By Interval</b> Select <b>By Interval</b>, set the <b>Period</b>, and set the parking fee for each hour, then the parking fee during the defined period will be charged by hour.</li> <li>• <b>By Times</b> Select <b>By Times</b>, set the period, and set the parking fee, then the parking fee during the defined period will be charged only once.</li> </ul>	 You can either select <b>Charge by Hour/Day</b> or <b>Charge by Time Period</b> .
Enter Time	You can test the charging results after setting the charging rules.	
Exit Time	Set the time that the vehicle enters and leaves the parking lot ( <b>Enter Time</b>	
Calculate Test	and <b>Exit Time</b> respectively), and then click <b>Calculate Test</b> . The system	
Charge Amount	displays the total parking fees need to be paid for the parking duration.	



Figure 3-36 Add charge rule (central charge)

✕
Add Charge Rule

**Basic Info**

Rule Name:  Rule Type: Central Charge ▼

---

**Rule Detail**

Max Charge:  \$

Central Charge Free Mins: Before Charge  Min , After Charge  Min

Booth Charge Free Mins:  Min

Charge by Hour/Day Charge by Time Period

<input style="width: 30px;" type="text" value="0"/>	Hour	<input style="width: 30px;" type="text" value="0"/>	<input checked="" type="radio"/> \$	<input type="radio"/> \$/Hour	+
<input style="width: 30px;" type="text" value="1"/>	Days	<input style="width: 30px;" type="text" value="0"/>	<input checked="" type="radio"/> \$	<input type="radio"/> \$/Hour <input type="radio"/> \$/Day	+

---

**Charge Test**

Enter Time:

Exit Time:

Central Time:


Calculate Test

Charge Amount: **0 \$** ( Central Charge: 0 \$ Booth Charge: 0 \$ )



OK
Cancel

Table 3-16 Description of charge rule (central charge)

Parameter	Description
Max Charge	Set the upper limit of daily parking fee.
Central Charge Free Mins	Set the length of free parking in the parking lot before and after central charge.
Booth Charge Free Mins	Set the length of free parking in the parking lot. No parking fees will be charged within the defined time.

Parameter	Description
Charge by Hour/Day	<p>Set the parking fees for different time lengths.</p> <ul style="list-style-type: none"> <li>• <b>\$</b>: Charge different fees for different parking hours. You need to manually set the charging fee of each hour.</li> <li>• <b>\$/Hour</b>: Set average parking fee for each hour. For example, if you set \$10 for 1 Hour, then the parking fee for 3 Hours is \$30, and the like.</li> <li>• <b>\$/Day</b>: Set average parking fee for each day. For example, if you set \$10 for 1 Day, then the parking fee for 2 Days is \$20, and the like.</li> </ul>
Charge by Time Period	<p>Different charging rates are set for different time periods. You can define multiple periods and set different charge rules for them.</p> <ul style="list-style-type: none"> <li>• <b>By Interval</b> Select <b>By Interval</b>, set the <b>Period</b>, and set the parking fee for each hour, then the parking fee during the defined period will be charged by hour.</li> <li>• <b>By Times</b> Select <b>By Times</b>, set the period, and set the parking fee, then the parking fee during the defined period will be charged only once.</li> </ul>
Enter Time	<p>You can test the charging results after setting the charging rules.</p> <p>Set the time that the vehicle enters and leaves the parking lot (<b>Enter Time</b> and <b>Exit Time</b> respectively), and also the time that the vehicle leaves the central charge place (<b>Central Time</b>), and then click <b>Calculate Test</b>. The system displays the total parking fees need to be paid for the parking duration.</p> <p> <b>Central Time</b> must be later than <b>Enter Time</b>, but earlier than <b>Exit Time</b>.</p>
Exit Time	
Central Time	
Calculate Test	
Charge Amount	

3) Click **OK**.

- Click  to modified charge rule. For details, see the steps of adding charge rule.
- Click  to delete charge rule.

Step 4 Click **OK**.

### 3.5.3 Configuring Map

Devices added to the parking lot must be bound to their actual position on the map (except vehicle detector and all-in-one reverse vehicle search device). Devices not added to parking lot will not be displayed in map configuration.



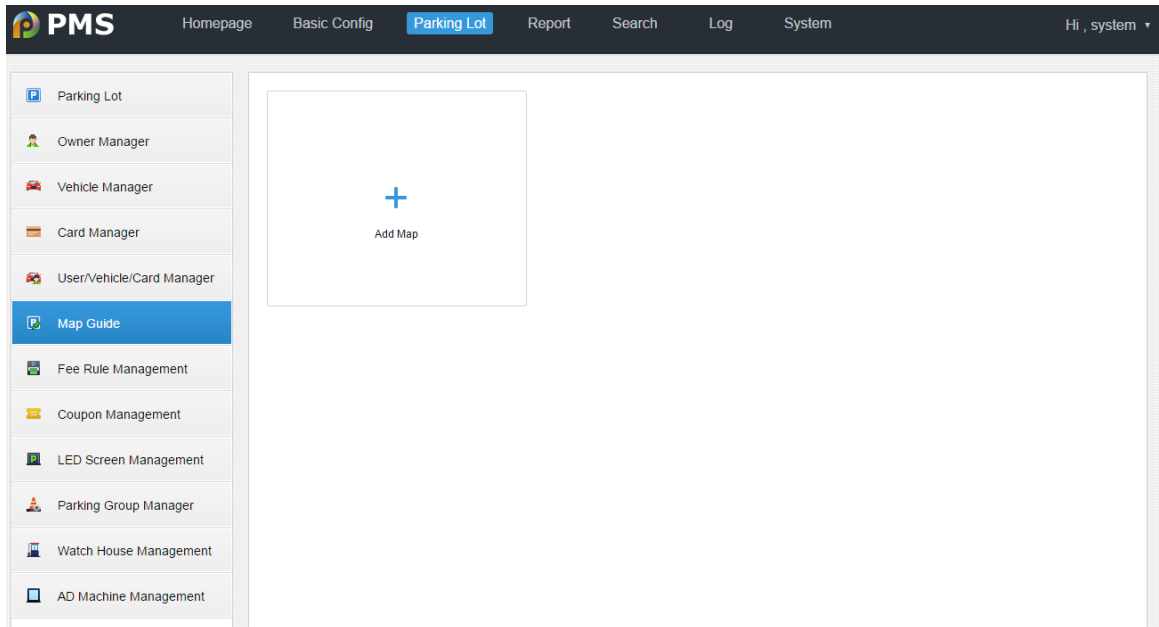
A guide screen must be bound to the entrance/exit ITC channel.

### 3.5.3.1 Adding Map

**Step 1** Select **Parking Lot > Map Guide**.

The **Map Guide** interface is displayed. See Figure 3-37.

Figure 3-37 Map guide



**Step 2** Click **+**.

The **Add Map** interface is displayed. See Figure 3-38.

Figure 3-38 Add map

The screenshot shows a dialog box titled "Add Map" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

- Parking Name:** A dropdown menu with "cx" selected.
- Layer Name:** A text input field with a red asterisk (\*) indicating it is required.
- Total Parking:** A spinner control with the value "1".
- Available Parking:** A spinner control with the value "0".
- Layer No.:** A text input field with a red asterisk (\*) and the value "1002".
- Picture:** A large empty rectangular area with a map icon in the center. To its right is a blue "Browse" button.

At the bottom of the dialog are two buttons: a blue "OK" button and a grey "Cancel" button.

**Step 3** Click ▼ in the **Parking Name** drop-down list to select the parking lot that needs to add map.

**Step 4** Set Layer Name, Total Parking, Available Parking, and Layer No. according to your actual conditions.



- Parameters with \* are required.
- Click ▲ or ▼ to increase or reduce total parking space or parking space available.

**Step 5** Click **Browse**, and then import map according to system prompt.

**Step 6** Click **OK** to save the configuration.

### 3.5.3.2 Adding Channel

**Step 1** On the **Map Guide** interface, click the thumbnail of the added map.

The interface for adding channel is displayed. See Figure 3-39. For introduction of the buttons, see Table 3-17.

Figure 3-39 Adding channel

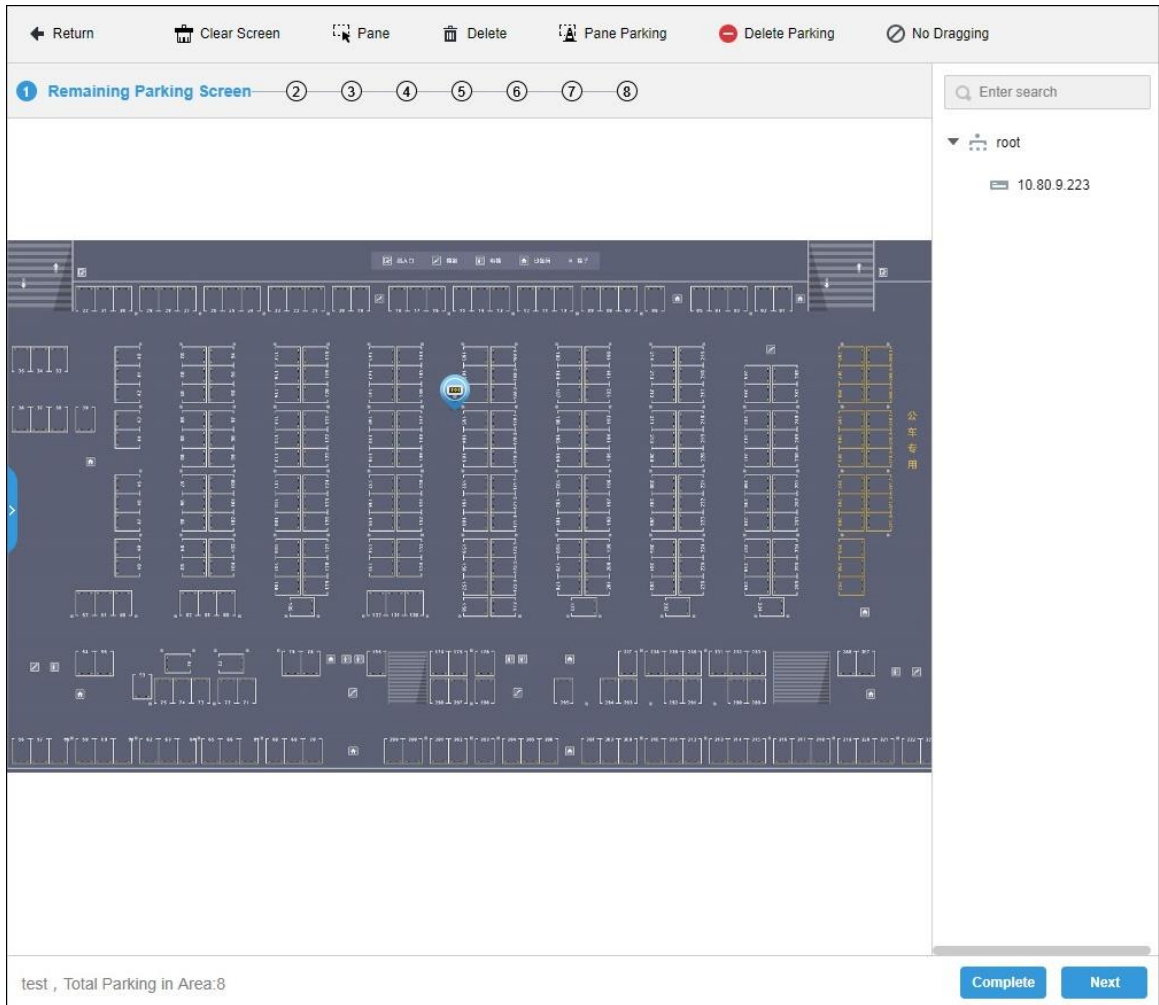


Table 3-17 Description of buttons

Parameter	Description
Return	Click to return to the main interface.
Clear Screen	Click to clear all the device channels on the map.
Pane	Click to select multiple channels on the map.
Delete	After selecting channels on the map, click it to delete the channels.
Pane Parking	Select parking space, and then delete parking space in batches or prevent from moving the position of the parking space on the map.
Delete Parking	Select parking space on the map, and then click the button to delete the selected parking space.
No Dragging	Do not drag and move the parking space on the map.

**Step 2** Add device channels to the map. You need to configure the channels in sequence: Remaining parking screen, entrance/exit camera, parking space, spot detector, guide screen, all-in-one reverse vehicle search device, ultrasonic parking space controller, and vehicle search line.



When channel name is shown in red, it means this channel has not been added to the map.

- Remaining parking screen, entrance/exit camera, spot detector, all-in-one device, and ultrasonic parking space controller: Select channel at the root node on the right side, and then drag the channel to appropriate position on the map. After setting a channel, click **Next**, then you can go on to configure the next channel.
- Parking space: Click the parking space in the device list on the right side, then click on the map to set the position of the parking space. After that, a yellow box is displayed on the map. Click the yellow box, and two small round boxes will be displayed in the center and at the corner respectively. Click the central box to adjust position, and click the corner box to adjust size. After setting a channel, click **Next**, then you can go on to configure the next channel.
- Vehicle search line: You can add vehicle search line after adding all-in-one reverse vehicle search device.
  - ◇ Click **Draw Vehicle Search Line** above the map, and then draw a line starting from the all-in-one device. Click parking space on the map to add point for vehicle search.
  - ◇ Click **Select Vehicle Search Line** to select the line on the map.
  - ◇ After selecting the line, click **Delete Vehicle Search Line** to delete the selected line.

Step 3 Click **Complete**.

## 3.6 Basic Configuration

Basic configuration provides basis for further configurations. This mainly includes configuration of device, alarm scheme, organization, and user, as well as system settings such as server configuration, backup and restore, and system restart.

### 3.6.1 Device

For configuration details, see "3.5.1 Adding Device."

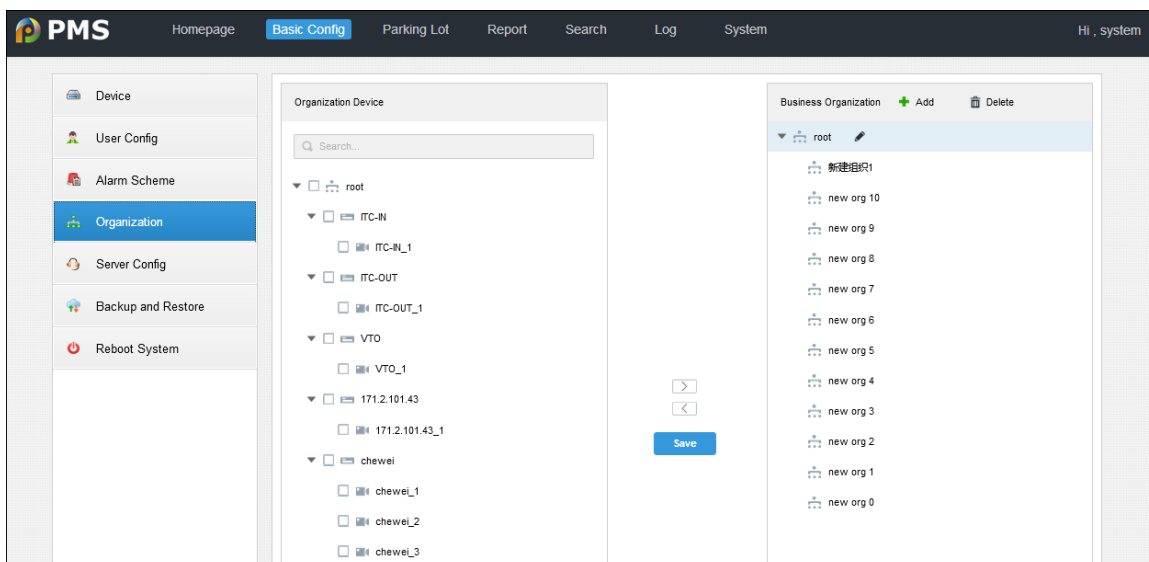
### 3.6.2 Organization

You can add organizations and then add device channels to the created organization.


Step 1 Select **Basic Config > Organization**.


The **Organization** interface is displayed. See Figure 3-40.

Figure 3-40 Organization



**Step 2** Click **Add** next to **Business Organization** at the right side, and you can add organization.

**Step 3** Select channel from the root organization on the left side, click  to add the selected channel to the organization on the right side.

Click  to move back the channel to the left side.

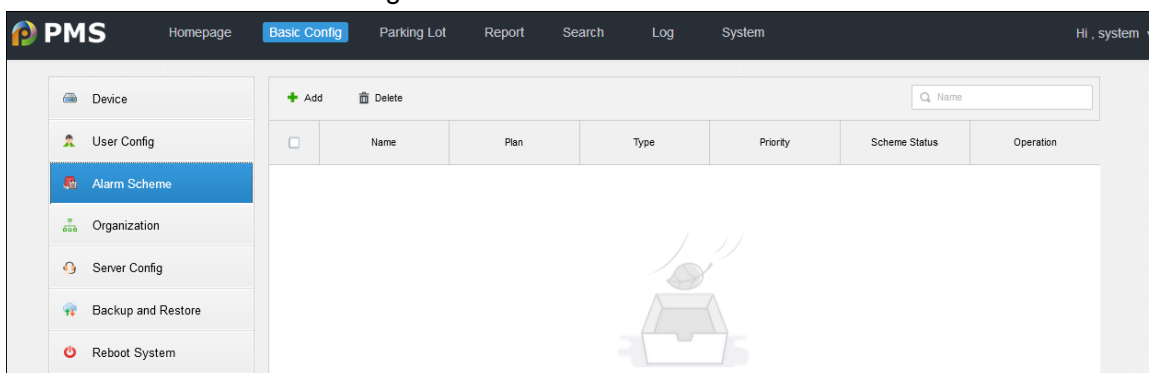
**Step 4** Click **Save**.

### 3.6.3 Alarm Scheme

You can add alarm scheme for devices, modify the added scheme, and turn on or turn off alarm scheme.

Select **Basic Config > Alarm Scheme**. The **Alarm Scheme** interface is displayed. See in Figure 3-41.

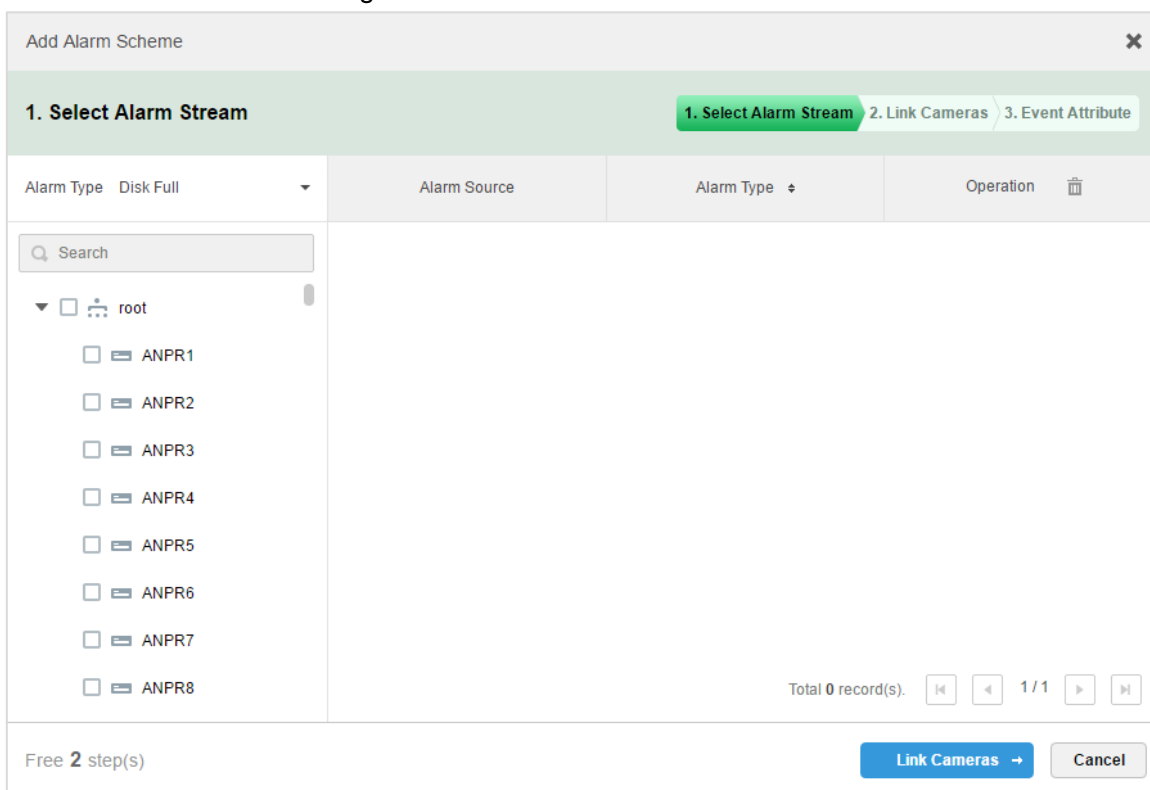
Figure 3-41 Alarm scheme



**Step 1** Click **Add**.

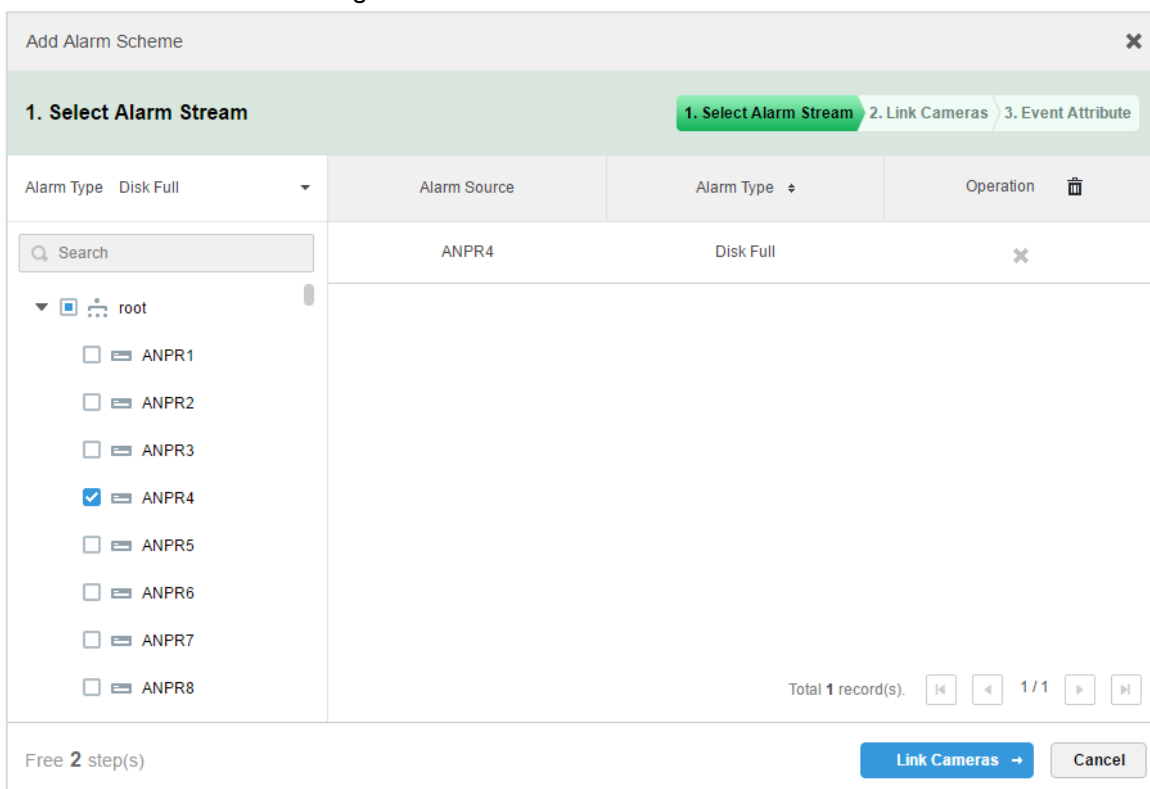
The **Add Alarm Scheme** interface is displayed. See Figure 3-42.

Figure 3-42 Add alarm scheme



**Step 2** Select alarm type and channel. See Figure 3-43.

Figure 3-43 Select alarm source



**Step 3** Click **Link Cameras**.

The **Link Cameras** interface is displayed. See Figure 3-44.



Figure 3-44 Link cameras

The screenshot shows the 'Add Alarm Scheme' window at step 2, 'Link Cameras'. On the left, a tree view shows a selected camera with IP address 172.18.1.35\_11. The main configuration area includes: Position: Store on Recorder; Record Stream: Main Stream; Record Time: 30; and an unchecked checkbox for 'Open camera video on client when alarm is triggered'. At the bottom, there are 'Previous', 'Event Attribute', and 'Cancel' buttons, and a status bar indicating 'The remaining 1 steps'.

**Step 4** Select camera, configure stream and record time, and confirm if you want to enable **Open camera video when alarm is triggered**.

**Step 5** Click **Event Attribute**.

The **Event Attribute** interface is displayed. See Figure 3-45.

Figure 3-45 Event attribute






The screenshot shows the 'Add Alarm Scheme' window at step 3, 'Event Attribute'. The main configuration area includes: a required 'Name' field; Time Template: All-Period Template; and Priority: High. At the bottom, there are 'Previous', 'Complete', and 'Cancel' buttons, and a status bar indicating 'The remaining 0 steps'.

**Step 6** Enter the name of alarm scheme, and select time template and priority.

**Step 7** Click **Complete**.

You can enable or disable the added alarm scheme on the **Alarm Scheme** interface.

- Select , and then click **Delete** to delete the select alarm scheme.

- Select  on the title line to select all the schemes, and then click  **Delete** to delete all of them.
-  **ON** means scheme is enabled. Click it, and the icon turns into  **OFF**, which means the alarm is disabled.
- Click  to modify the alarm scheme. Refer to the steps of adding alarm scheme.
- Click  to delete alarm scheme.

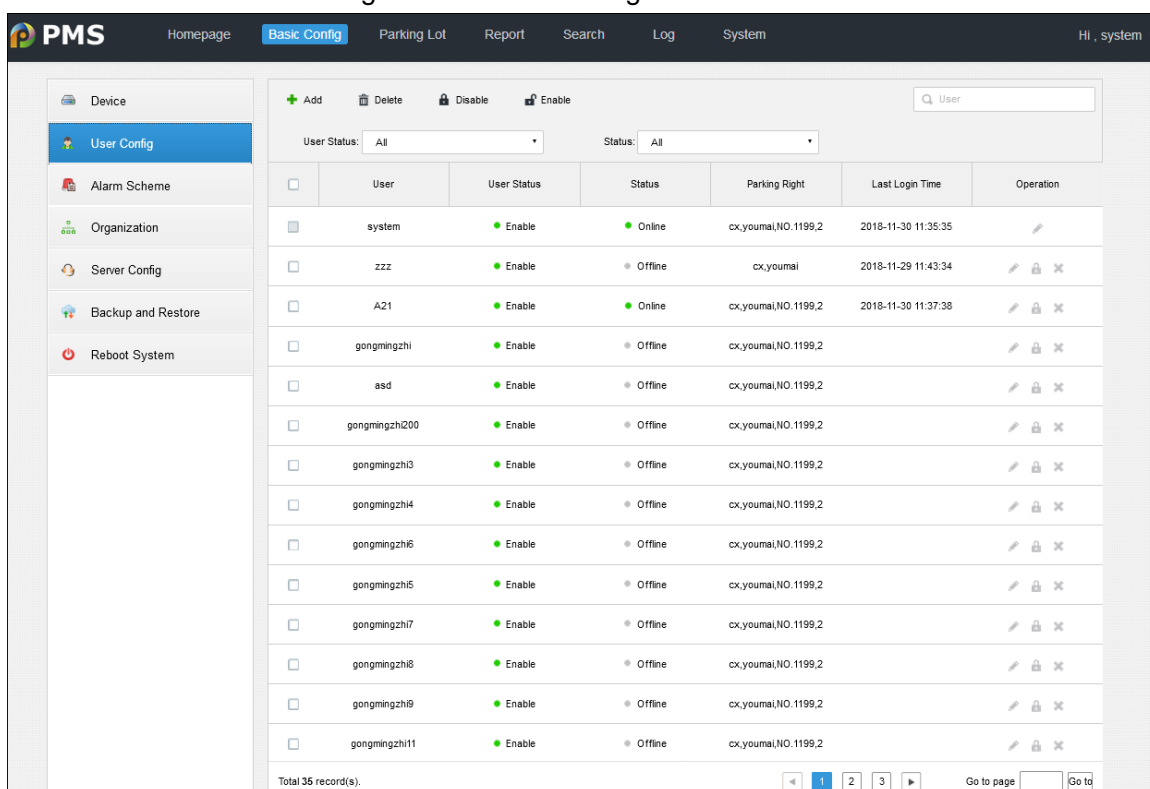
### 3.6.4 User Management

On this interface, you can add, delete, freeze, and enable user.

Select **Basic Config > User Config**. The interface shown in Figure 3-46 is displayed.

- You can enable or disabled user status in the **User Status** column: The icon is green when user status is enabled, and gray when user status is disabled.
- In the **Status** column, the icon is green when user is online, and gray when offline.

Figure 3-46 User management



**Step 1** Click **Add**.

The **Add User** interface is displayed. See Figure 3-47.


Figure 3-47 Add user

**Step 2** Configure the parameters. See Table 3-18.



Parameters with \* are required.







Table 3-18 Configuration parameters of adding user

Parameter	Description
User	Enter the username for login.
Login Password	Enter the password for login. The password: <ul style="list-style-type: none"> <li>• Must be 8–16 characters.</li> <li>• Includes no space.</li> <li>• Contains both English letters and numbers.</li> </ul>
Confirm	Enter the login password again.
Password Expiry	Set the time that the password expires. Select the <b>Password Expiry</b> check box to enable the function, and then click  to set the date that the password expires.
User Status	Select <b>Enable</b> or <b>Disable</b> to enable or disable user and its rights.
Parking Right	Select the parking lot to be linked to the user.
System Right	Select the system rights of the user.

Parameter	Description
Central Payment Right	<ul style="list-style-type: none"> <li>When selecting <b>on</b>, center charge is enabled, and the center charge interface will be displayed when the user logs in to the PMS Cashier client.</li> <li>When selecting <b>off</b>, booth charge is enabled, and the booth charge interface will be displayed when the user logs in to the PMS Cashier client. It is <b>off</b> by default.</li> </ul>

**Step 3** Click **OK** to save the configuration.

You can delete and enable/disable user, or modify user information.

- Select , and then click  **Delete** to delete the selected user.
- Select  of the title line to select all the users, and then click  **Delete** to delete all of them.
-  means user is enabled. Click the icon, and the icon changes into , which means the user is disabled.
- Click  to edit user information. For details, see the steps of adding user.
- Click  to delete the user.

## 3.6.5 Service Management

You can view the details of services, such as name, status, and IP address.

Select **Basic Config > Server Config**. The **Server Config** interface is displayed. See Figure 3-48.

Figure 3-48 Server config

Device	Refresh								
	Code	Name	Type	Status	IP Address	Enabled Status	Master/Slave Server	License	Operation
Alarm Scheme	6008	CPDG(6008)	CPDG	Online	10.80.3.22	Enable	Master Server	-	
Organization	7101	MCD_GAT...	MCD_GATE	Online	10.80.3.22	Enable	Master Server	-	
User Config	7201	MCD_LED(...	MCD_LED	Online	10.80.3.22	Enable	Master Server	-	
<b>Server Config</b>	7301	MCD_DOOR...	MCD_DOOR	Online	10.80.3.22	Enable	Master Server	-	
Backup and Restore	9008	PK_PCS(9...	PK_PCS	Online	10.80.3.22	Enable	Master Server	-	
Reboot System	9101	PTS(9101)	PTS	Online	10.80.3.22	Enable	Master Server	License is not imported.	

In the **Enabled Status** column, the icon is green when the server is online (status changes to **Enable**), and gray when offline (status changes to **Disable**).

Master server and slave server are available. In the **Master/Slave Server** column, the icon is green when server is online, and gray when the server is frozen.

- Master server: Cannot be frozen or deleted.
- Slave server: Can be frozen or deleted.

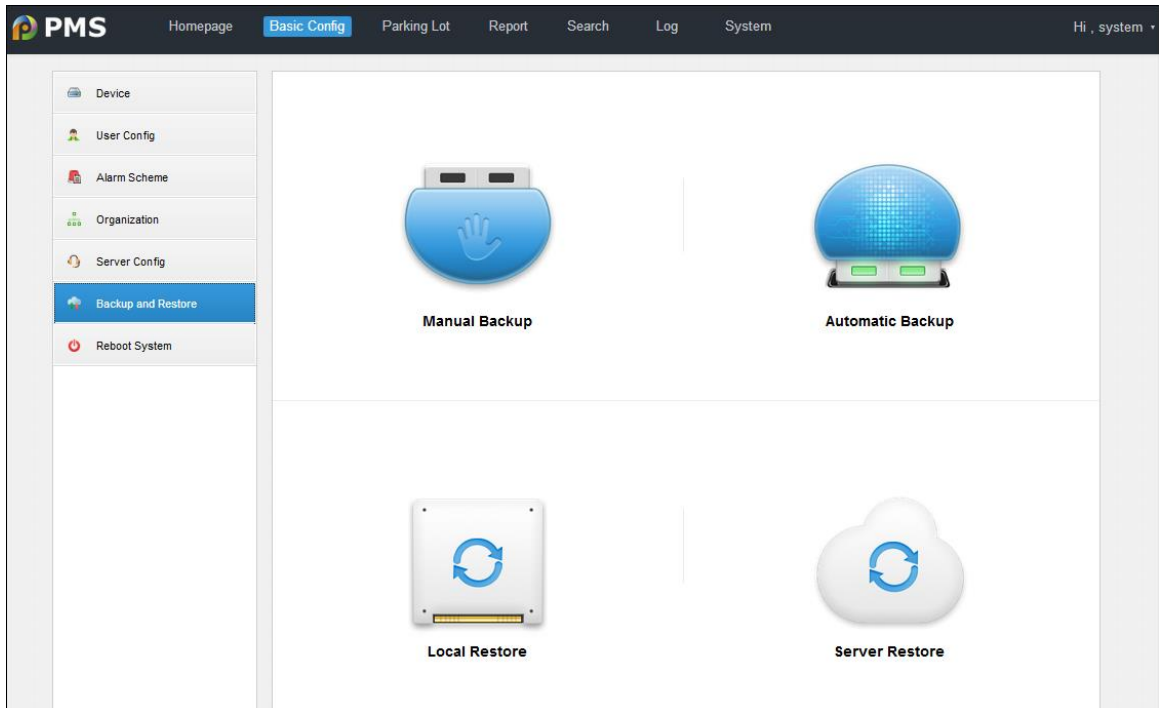
In the **License** column, you can view whether algorithm certificate is imported, and whether the certificate is successfully verified.

### 3.6.6 Backup and Restore

PMS supports backup and recovery manually, or automatically by the server.

Select **Basic Config > Backup and Restore**. The interface shown in Figure 3-49 is displayed.

Figure 3-49 Backup and restore

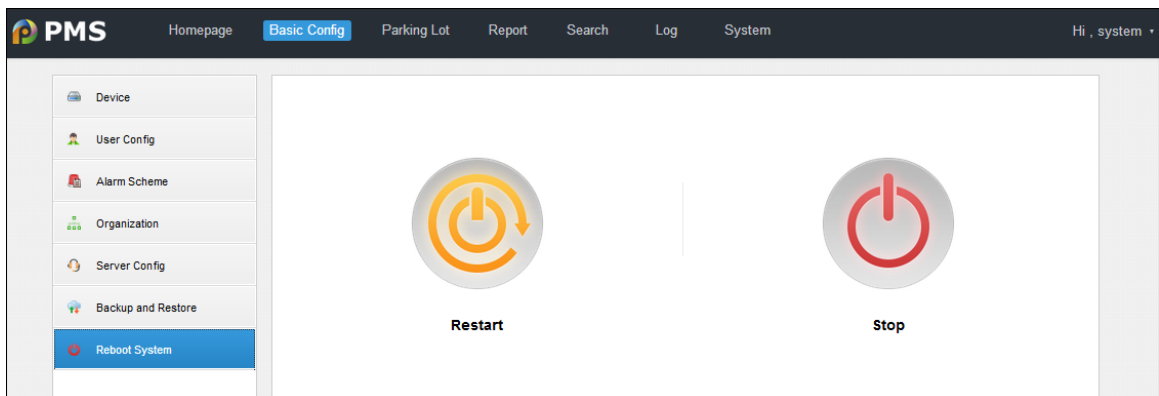




- Manual backup: Click **Manual Backup**, and then enter the **Login Password** and **Encrypted Password** to back up the files.
- Automatic backup: You can select whether to enable this function.
- Local restore: Select local file for restoring backup.
- Server restore: The system automatically search the backup file and restore backup.

### 3.6.7 Restarting System

Select **Basic Config > Reboot System**. The interface shown in Figure 3-50 is displayed.

Figure 3-50 Restart system






- Click  to restart PMS service.
- Click  to stop PMS service.

## 3.7 Configuring Parking Lot

For the parking lot, you need to configure and manage information such as the vehicle and its owner's details, parking space, charge rule of parking fees, coupon, and LED screen.

### 3.7.1 Parking Lot

You can add parking lot or modify its settings.

- Click  to add a new parking lot. For details, see "3.5.2.1 Adding Parking Lot."
- Click  to edit parking lot information. Refer to the steps of adding parking lot.
- Click  to delete parking lot.

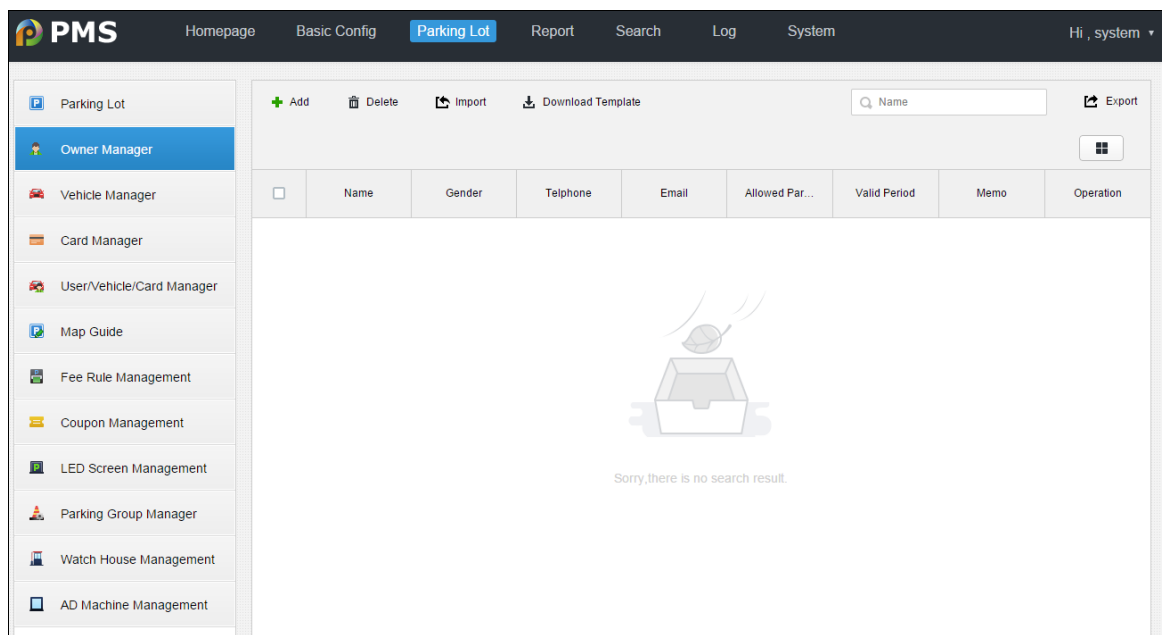
### 3.7.2 Vehicle Owner

You can add vehicle owner, modify or delete the added owner. You can also import owner information to the system by using the template.

Step 1 Select **Parking Lot > Owner Manager**.

The interface shown in Figure 3-51 is displayed.

Figure 3-51 Vehicle owner management



Step 2 Click **Add**.

The **Add** interface is displayed. See Figure 3-52.

Figure 3-52 Add vehicle owner

**Step 3** Configure the parameters. See Table 3-19.



Parameters with \* are required.

Table 3-19 Description of adding owner

Parameter	Description
Name	Enter the information according to your actual condition.
Gender	
Telephone	
Email	
Allowed Parking	The number of vehicles that the owner can park in the parking lot. Click ▲ or ▼ to increase or reduce the number.
Memo	Enter remarks or notes according to the actual condition.
Valid Period	Set the valid period of owner information.
User Type	Select <b>Whitelist</b> or <b>Blacklist</b> .

**Step 4** Click **OK**.

### Other Operations

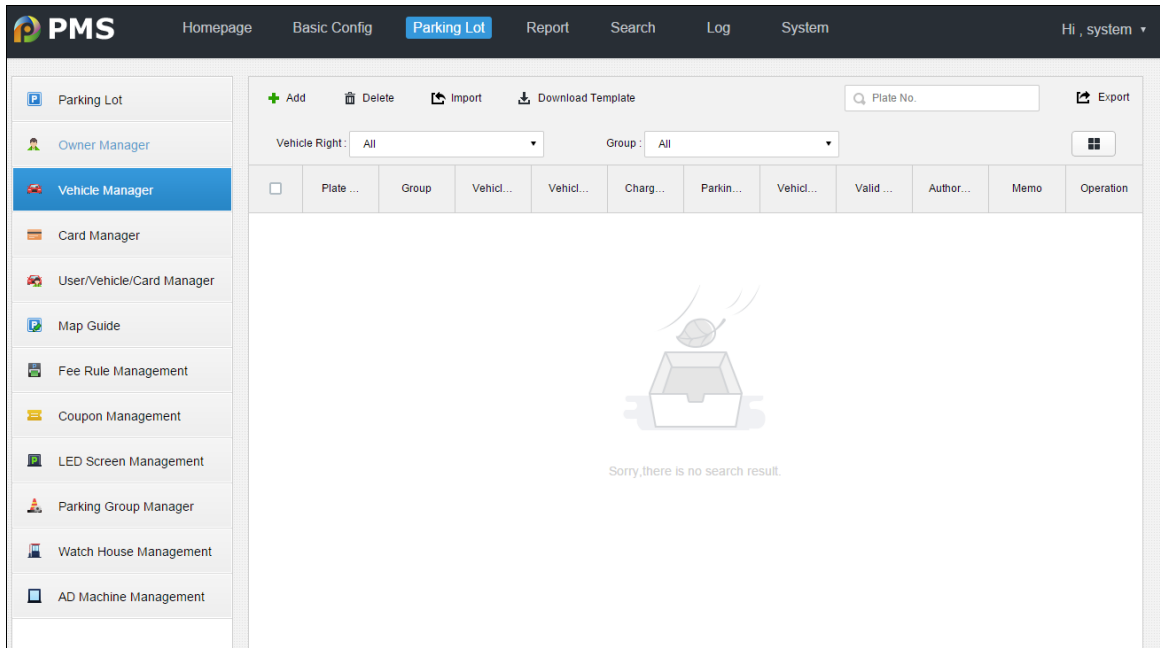
- Click , or Select  , and then click **Delete** to delete the selected owner.
- Select  on the title line to select all the owners, and then click **Delete** to delete all of them.
- Click to edit vehicle owner information.
- Click **Download Template** to download the template of owner information.
- After filling in the information in the template, click **Import** to import the template to the system.







- Enter the owner information in  , and then click  **Export** to export the information.

### 3.7.3 Vehicle Management

You can add vehicle, modify or delete vehicle details. You can also import vehicle information to the system by using the template. Select **Parking Lot > Vehicle Manager**. The interface shown in Figure 3-53 is displayed.

Figure 3-53 Vehicle configuration



- Click , or select , and then click  **Delete** to delete the selected vehicle.
- Select  on the title line to select all the vehicles.
- Click  to edit vehicle information.
- Click  **Download Template** to download the template of vehicle information.
- After filling in the information in the template, click  **Import** to import the template to the system.
- Enter the vehicle information in  , and then click  **Export** to export the information.

#### Adding Vehicle

Step 1 Click **Add**.

The **Add** interface is displayed. See Figure 3-54.



Figure 3-54 Add vehicle information

**Step 2** Click **Add**.

A row for adding vehicle information interface is displayed. See Figure 3-55.

Figure 3-55 Add vehicle information

**Step 3** Configure the parameters. See Table 3-20.



Parameters with are required. Click to delete vehicle information.

Table 3-20 Description of adding vehicle

Parameter	Description
Plate No.	Enter the license plate number of vehicle.
Group	Select the group that the vehicle belongs to, charge rule, vehicle brand, vehicle color, and the parking lot linked to the vehicle.
Charge Rule	
Vehicle Brand	
Vehicle Color	
Parking Right	
Valid Period	Click  to set the valid period of the vehicle plate.
Vehicle Right	Select from <b>Whitelist</b> or <b>Blacklist</b> to set the vehicle right. If <b>Blacklist</b> is selected, the <b>Group</b> and <b>Charge Rule</b> of the vehicle will not be editable.
Memo	Enter remarks or notes according to the actual condition.

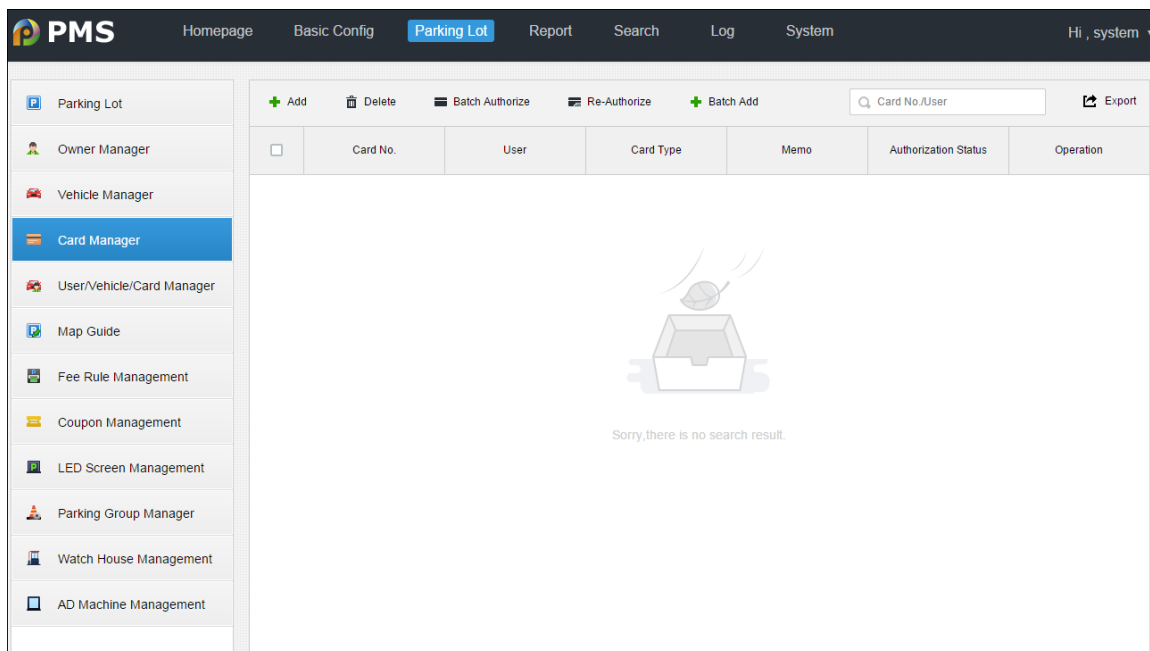
**Step 4** Select channel from the device tree.

**Step 5** Click **OK**.

### 3.7.4 Parking Card Management

You can add parking card linked to vehicle, and set permissions for the card. Select **Parking Lot > Card Manager**. The interface shown in Figure 3-56 is displayed.

Figure 3-56 Card management

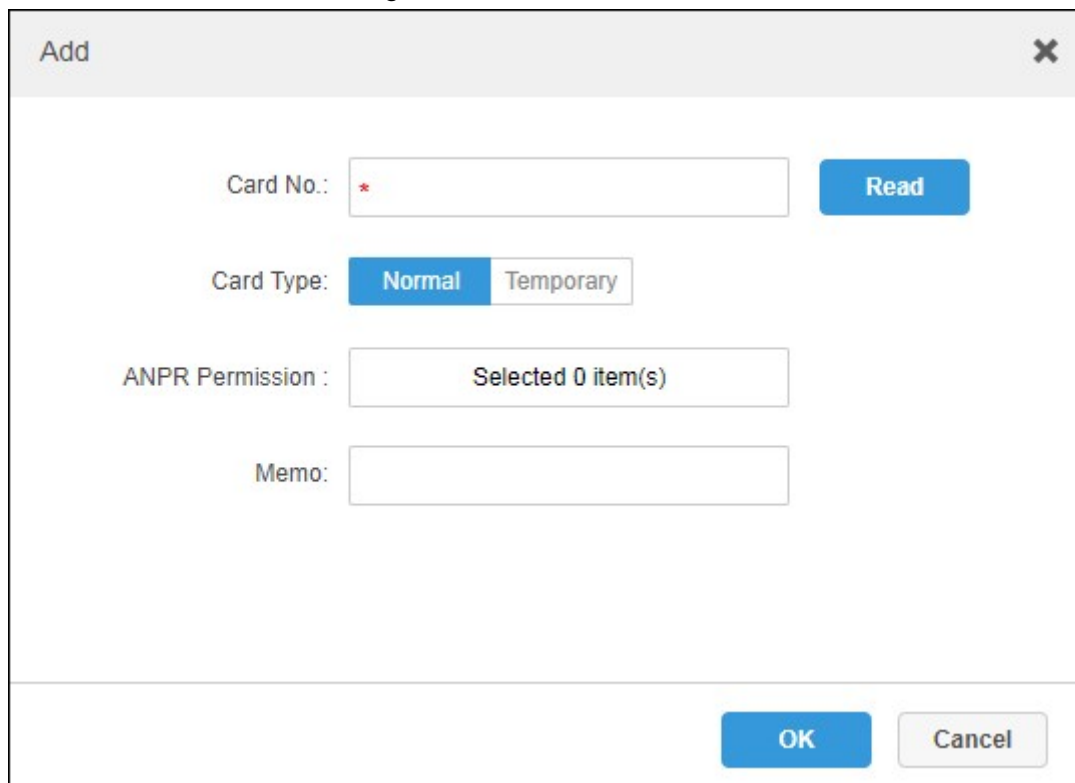


#### 3.7.4.1 Adding Single Card

Step 1 Click **Add**.

The **Add** interface is displayed. See Figure 3-57.

Figure 3-57 Add card



Step 2 Configure the parameters. See Table 3-21.



Parameters with \* are required.

Table 3-21 Description of adding card

Parameter	Description
Card No.	Enter card number manually, or click <b>Read</b> to read and recognize card information.
Card Type	You can select from <b>Normal</b> card or <b>Temporary</b> card. Normal card allows you to enter or leave the parking lot for multiple times, and for temporary card, you can enter or leave the parking lot for only once.
ANPR Permission	Click to select device channel.
Memo	Enter remarks or notes according to the actual condition.

Step 3 Click **OK**.

### 3.7.4.2 Adding Cards in Batches

You can add parking cards in batches through reading card by the system.

Step 1 Click **Batch Add**.

The **Add** interface is displayed. See Figure 3-58.

Figure 3-58 Add cards in batches

Step 2 Configure the parameters. See Table 3-22.



Parameters with \* are required.

Table 3-22 Description of adding card

Parameter	Description
Card No.	Enter the card number, and then press Enter key. The card number will be displayed on the right side.
Read	Read cards in batches, which will be displayed on the right side.
Card Type	You can select from <b>Normal</b> card or <b>Temporary</b> card. Normal card allows you to enter or leave the parking lot for multiple times, and for temporary card, you can enter or leave the parking lot for only once.
ANPR Permission	Click to select device channel.

Parameter	Description
Memo	Enter remarks or notes according to the actual condition.

**Step 3** Click **OK** to save the configuration.

### 3.7.4.3 Card Authorization

After adding card, you need to authorize the card, so the card can be used when charging parking fees.

**Step 1** Click **Batch Authorize**.

The **Batch Authorize** interface is displayed. See Figure 3-59.

Figure 3-59 Batch authorize

**Step 2** Click **Download Template** to download template.

**Step 3** After filling in the information in the template, click **Import** to import the template to the system.

**Step 4** You can select from one or more card(s), and set card type: **Normal** or **Temporary** card.

- **Normal** card: With this card, you can enter or leave the parking lot for multiple times.
- **Temporary** card: With this card, you can enter or leave the parking lot for only once.

**Step 5** Click the box next to **ANPR permission** to select ANPR camera.

**Step 6** Click **Authorize**, and the card is successfully authorized.

You can modify and delete owner information, as well as import and export information to or from system through template.

- Select , and then click **Delete** to delete the selected vehicle.

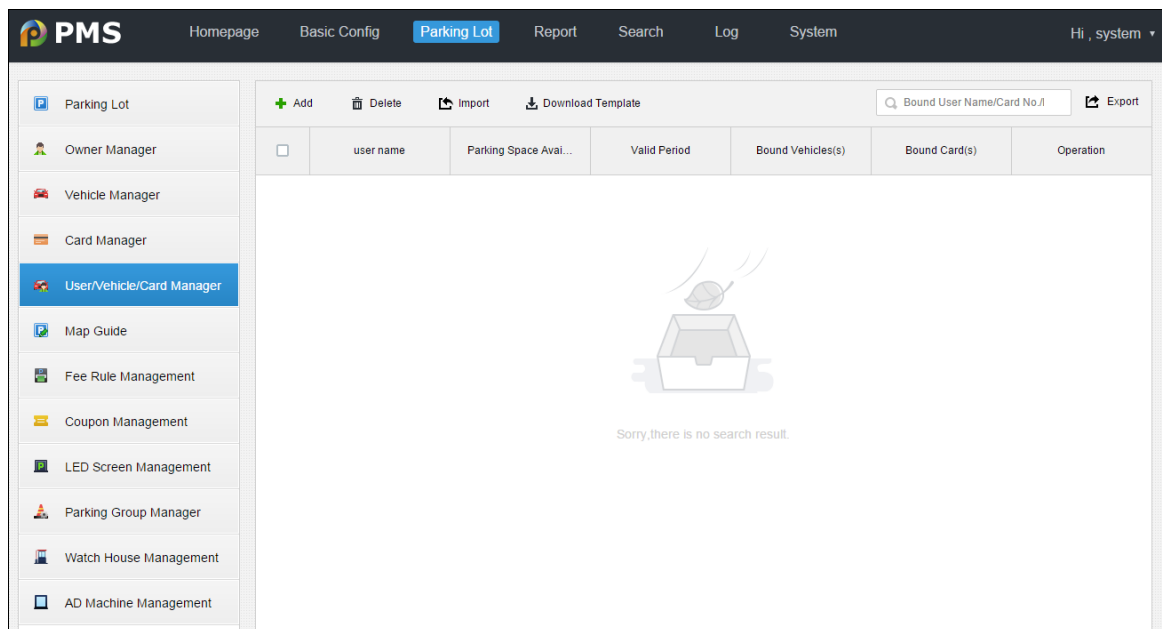
- Select  on the title line to select all the vehicles, and then click **Delete** to delete all of them.
- Select one or more cards, and then click **Re-Authorize** to authorize the card(s) again.
- Enter card number or owner information in , and then click **Export** to export the information.
- Click to modify card information. For details, see the steps of adding card.
- Click to delete card.

### 3.7.5 User/Vehicle/Card Management

Bind vehicle and card to user, so the system can calculate the parking fee according to the entry and exit time of the user's vehicle.

Select **Parking Lot > User/Vehicle/Card Manager**. The interface shown in Figure 3-60 is displayed.

Figure 3-60 User, vehicle, and card management



Step 1 Click or to bind user, vehicle, and card.

The **Bind User** interface is displayed. See Figure 3-61.

Figure 3-61 Binding user

<input type="checkbox"/>	Name	User Authority	Valid Period
<input type="checkbox"/>	45	Black List	2019-05-30 to 2019-05-30
<input type="checkbox"/>	411	White List	
<input type="checkbox"/>	111	White List	
<input type="checkbox"/>	4-1	White List	2019-05-30 to -
<input type="checkbox"/>	4	White List	2019-05-30 to 2019-06-08
<input type="checkbox"/>	1	White List	2019-05-29 to 2021-05-29

**Step 2** Click  to select user to be bound. You can search information in  to search user information.

**Step 3** Click .

The **Bind Vehicle** interface is displayed. See Figure 3-62.

Figure 3-62 Bind vehicle

<input type="checkbox"/>	Vehicle	User	Operation
<input type="checkbox"/>	267	--	
<input type="checkbox"/>	187	--	
<input type="checkbox"/>	186	--	
<input type="checkbox"/>	185	--	
<input type="checkbox"/>	184	--	
<input type="checkbox"/>	183	--	
<input type="checkbox"/>	182	--	
<input type="checkbox"/>	181	--	

- Select the  check boxes to select one or more vehicles that will be bound to the user. Click **Bind to User** to bind vehicle to user.
- Bound: You can view the bound vehicles of the current user. Select the  check boxes to select one or more vehicle plates to unbind the vehicles one by one or in batches. Click to unbind the selected vehicle to the user.
- Unbound: Click it to view all the unbound vehicle plates.

**Step 4** Click **Next**.

The **Bind Card** interface is displayed. See Figure 3-63.

Figure 3-63 Bind card



- Select  to select one or more cards that will be bound to the user. Click **Bind to User** to bind card to user.
- Bound: You can view the bound cards of the current user. Select  to select one or more cards to unbind the cards one by one or in batches. Click to unbind a card to the user.
- Unbound: Click it to view all the unbound cards.

**Step 5** Click **Complete**.

Other Operations

- Click to modify the corresponding information.
- Click to delete the corresponding information. Select  of multiple information, and then click **Delete** to delete multiple information at a time.
- Click **Import** to import the corresponding information to PMS.
- Click **Export** to export the corresponding information from PMS. You need to enter the login password and encryption password to open the exported Excel file.
- Click **Download Template** to download the template for importing corresponding information.

### 3.7.6 Map Guide

See "3.5.3 Configuring Map."



### 3.7.7 Charge Rule Management

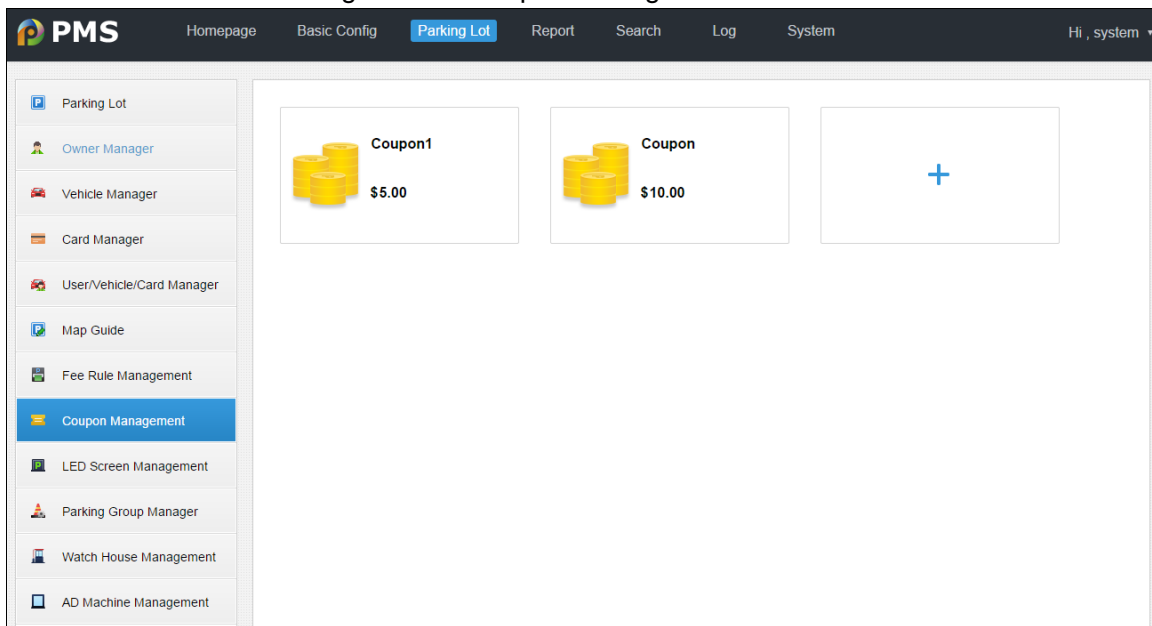
See "3.5.2.2 Charge Rule Management."

### 3.7.8 Coupon Management

You can set the type of coupon and the amount.

Select **Parking Lot > Coupon Management**. The interface shown in Figure 3-64 is displayed.

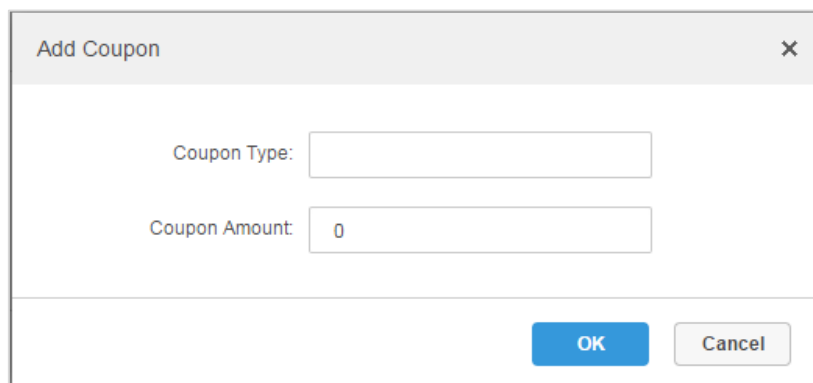
Figure 3-64 Coupon management



Step 1 Click  .

The **Add Coupon** interface is displayed. See Figure 3-65.

Figure 3-65 Add coupon



Step 2 Enter the coupon type and coupon amount.

Step 3 Click **OK**.

### 3.7.9 LED Screen Management

Bind parking space group to the LED screen, so the screen can acquire parking space data of the group and display the number of parking spaces.

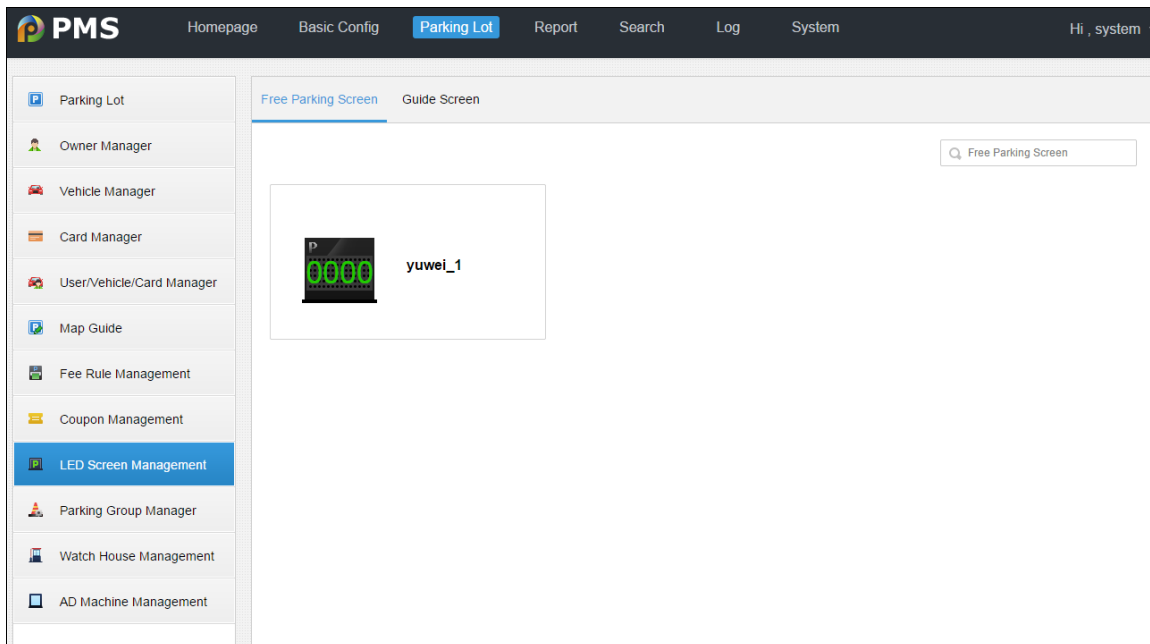
### 3.7.9.1 Parking Space Available Screen

Set the LED screen that displays remaining parking space in a parking lot.

**Step 1** Select **Parking Lot > LED Screen Management > Free Parking Screen**.

The **Free Parking Screen** interface is displayed. See Figure 3-66.

Figure 3-66 LED screen management



**Step 2** Click the LED screen on the interface.

The interface of setting LED screen is displayed.



You can click **Return** to go back to the **Free Parking Screen** interface.

**Step 3** Select the device linked to the LED screen.

You can select from **Entrance&Exit Device**, **Spot Detector Device**, and **Ultrasonic Parking Space Controller**. Entrance&exit device and ultrasonic parking space controller cannot be linked to an LED screen at the same time. You can simultaneously link entrance&exit device and spot detector device, or spot detector device and ultrasonic parking space to an LED screen.

- Entrance&Exit Device

1) Click **Entrance&Exit Device**.

The interface of configuring entrance&exit device is displayed. See Figure 3-67.

Figure 3-67 Entrance&exit device linkage

Return

Total Parking: 0 Remaining Parking: 0 Enter initial remaining parking

Correct Free Parking: off on

Entrance/Exit Device ON

Itc01\_1  itc02\_1

Entrance Device ( 1 )  When a vehicle passes, remaining quantity decrease by 1

ITC-IN\_1

Exit Device ( 1 )  When a vehicle passes, remaining quantity increase by 1

ITC-OUT\_1

2) Click  next to Entrance&Exit Device.

The icon turns into , meaning the entrance&exit device is linked to the LED screen.

3) Set parking space.

- ◇ Total Parking: The total parking spaces monitored by the LED screen.
- ◇ Remaining Parking: The remaining parking spaces monitored by the LED screen.
- ◇ Correct Free Parking: After running for a long time, there might be data deviation in respect of the remaining parking spaces. Enable **Correct Free Parking**, and set **Remaining Parking**. The system will correct the deviation.

4) Select the devices for parking lot entrance and exit according to your actual requirements.

5) Click **Save**.


- Spot Detector Device


1) Click **Spot Detector Device**.

The interface of configuring spot detector device is displayed. See Figure 3-68.

Figure 3-68 Parking space detector linkage


The screenshot shows a web interface for configuring parking space detector linkage. At the top, there is a 'Return' button. Below it are two dropdown menus for 'Total Parking' and 'Remaining Parking', both currently set to '0'. To the right of these is a refresh icon and the text 'Enter initial remaining parking'. The interface is divided into two sections for device status: 'Entrance/Exit Device' with a toggle set to 'OFF', and 'Spot Detector Device' with a toggle set to 'ON'. Below these is a list of parking spaces. The list has a search bar and two tabs: 'All' and '111\_A'. Under the 'All' tab, there are checkboxes for 'All', '1\_1\_002', '1\_1\_003', '8\_2\_3', and '2\_2\_3'. A 'Save' button is located at the bottom right of the interface.

- 2) Click  next to Spot Detector Device.

The icon turns to , meaning the spot detector device is linked to the LED screen.

- 3) Set parking space.
  - ◇ Total Parking: The total parking spaces monitored by the LED screen.
  - ◇ Remaining Parking: The parking spaces available monitored by the LED screen.



Click  to refresh the parking spaces available.

- 4) Select area and parking space.
- 5) Click **Save**.

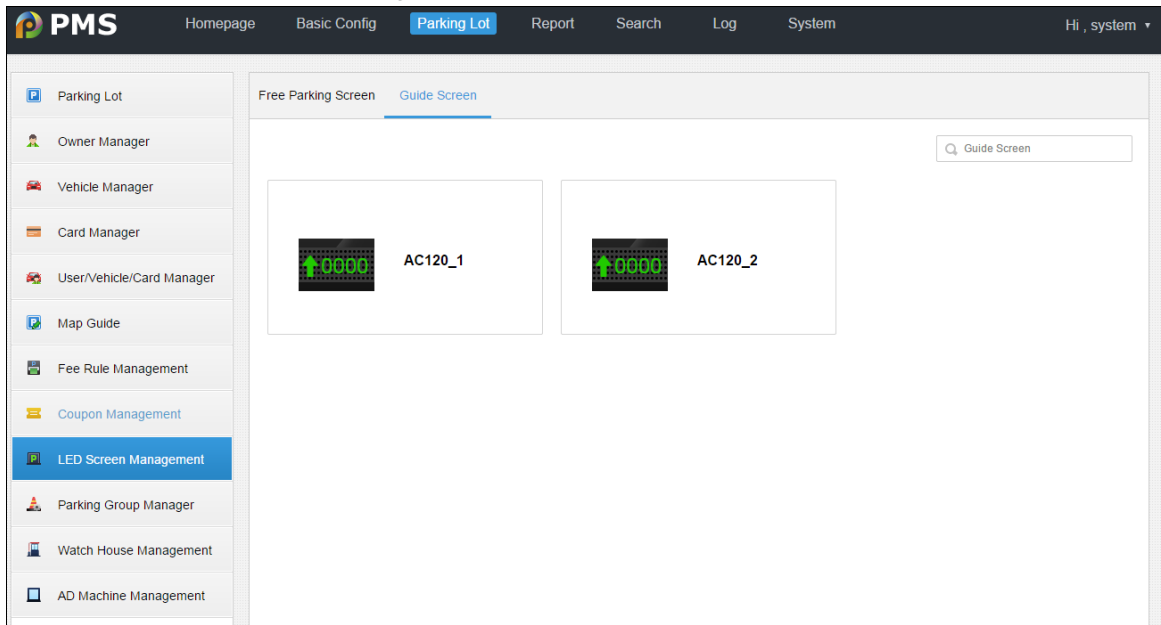
### 3.7.9.2 Guide Screen

Set the guide screen that relates to the parking spaces in the parking lot.

Step 1 Select **Parking Lot > LED Screen Management > Guide Screen**.

The **Guide Screen** interface is displayed. See Figure 3-69.

Figure 3-69 Guide screen



**Step 2** Click on the screen icon.

The interface of linking other devices to guide screen is displayed.



Click  to exit the interface.

**Step 3** Select the device that you want to link to the guide screen. You can select from **Entrance/Exit Device** (access ANPR camera) and **Spot Detector Device** (parking space detector). See Figure 3-70.

- Entrance/Exit Device

Figure 3-70 Link entrance/exit device

Return

Total Parking: 0 Remaining Parking: 0 Enter initial remaining parking

Correct Free Parking: off on

Entrance/Exit Device OFF

ITC\_25\_1  12\_1

Device added to entry Device added to exit

Entrance Device ( 0 ) Clear When a vehicle passes, remaining quantity decrease by 1

Exit Device ( 0 ) Clear When a vehicle passes, remaining quantity increase by 1

Spot Detector Device OFF

Save

- 1) Click  next to **Entrance/Exit Device**.

The icon changes to , meaning entrance/exit device is linked to the guide screen.

- 2) Set parking spaces.
  - ◇ Total Parking: Set the total parking spaces associated with the guide screen.
  - ◇ Remaining Parking: Set the current parking spaces available associated with the guide screen.
  - ◇ Correct Free Parking: There might be deviation regarding the parking spaces available after the guide screen runs for a long time. Enable **Correct Free Parking**, and set the number of parking spaces available, then it will correct the spaces available within the defined correction time (**System > Available Parking Refresh > Free Parking Correction**).
- 3) Select the cameras for entrance and exit respectively. Select a device from the **Entrance/Exit Device** list, and then click **Device added to entry** or **Device added to exit** to link the device to entrance or exit.
- 4) Click **Save** at the lower-right side.
  - Spot Detector Device
- 1) Click  next to **Spot Detector Device**.


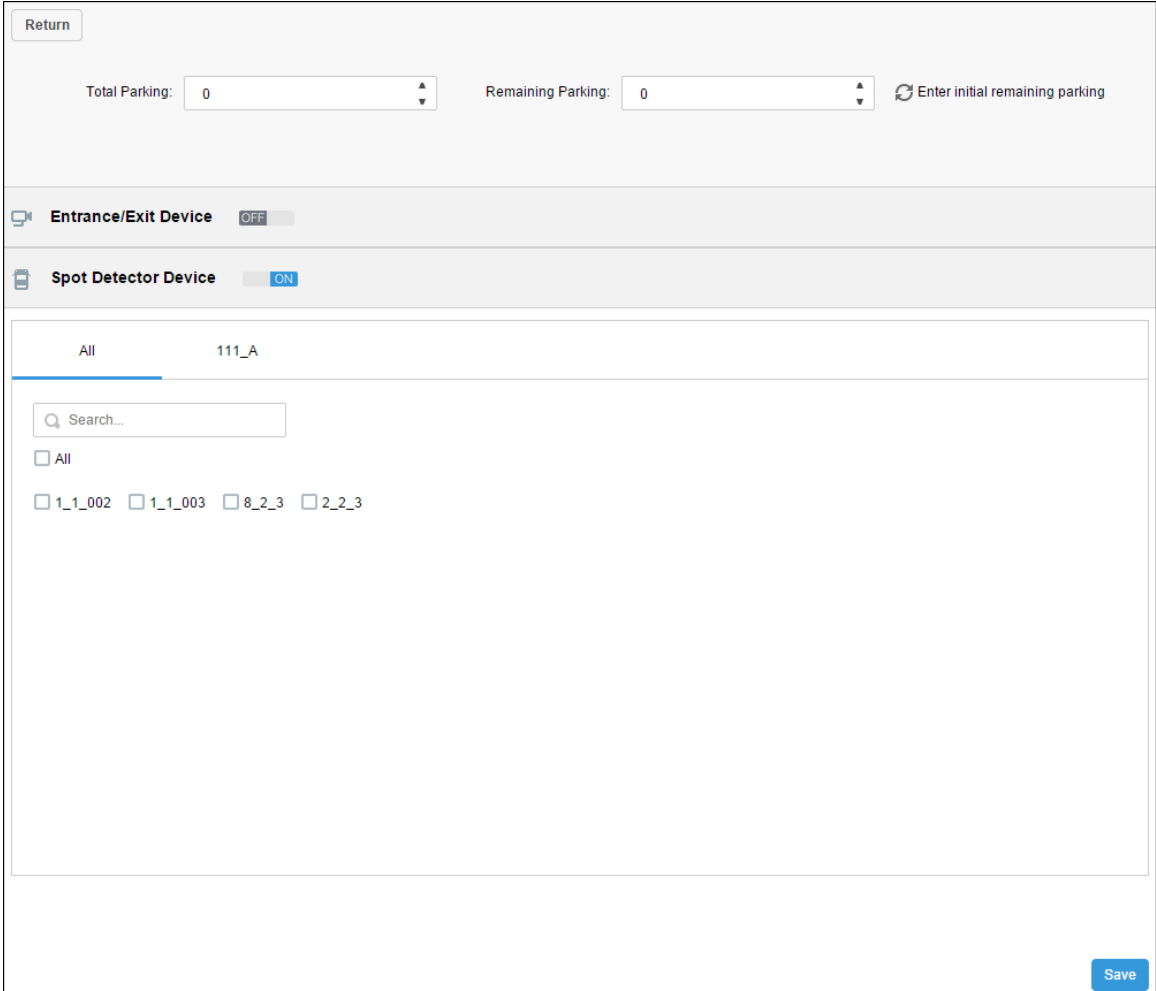
The icon changes to  , meaning the spot detector device (parking space detector) is linked to the guide screen. See Figure 3-71.

Figure 3-71 Link parking space detector



2) Set parking spaces.

- ◇ Total Parking: Set the total parking spaces associated with the guide screen.
- ◇ Remaining Parking: Set the current parking spaces available associated with the guide screen.



Click  to refresh the initial parking space available.

- 3) Select parking space and parking spaces.
- 4) Click **Save** at the lower-right side.

### 3.7.10 Parking Group Management

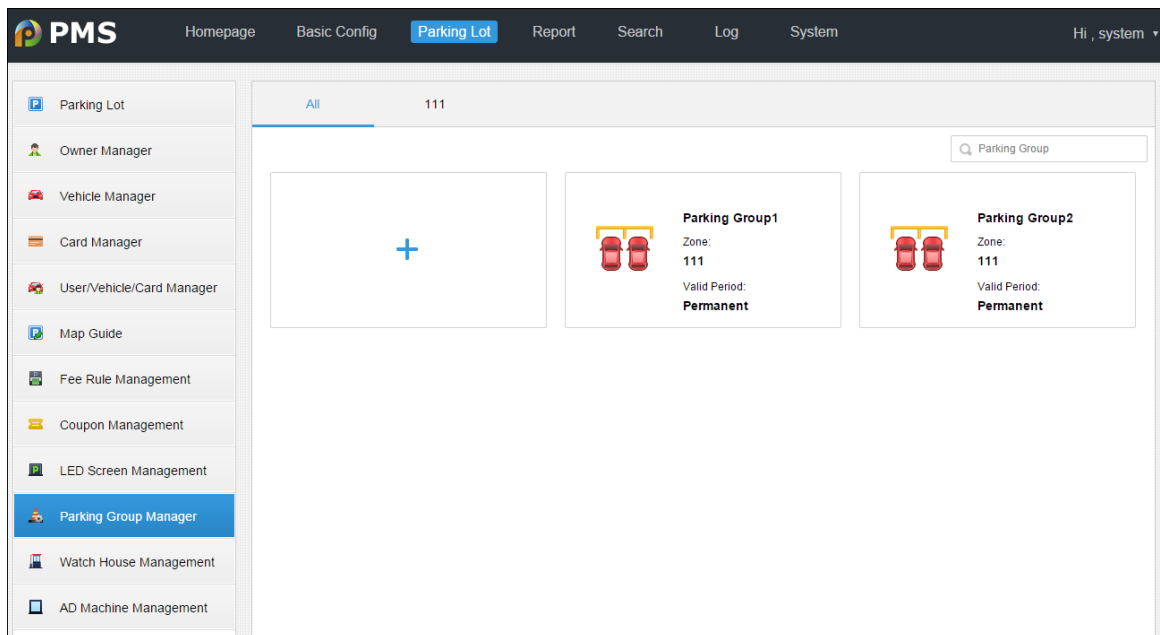
You can manage parking groups and vehicles through binding or unbinding vehicles to parking space.




Make sure that map is added to the parking space group. To add a map, see "3.5.3.1 Adding Map."


Select **Parking Lot > Parking Manager**. The interface shown in Figure 3-72 is displayed.

Figure 3-72 Parking group management



- Click , and the parking lots not shown on the current interface will be displayed.
- You can enter the name of parking space group in  to search for the group easily.


### 3.7.10.1 Adding Parking Space Group

Step 1 Click .

The **Add Parking Group** interface is displayed. See Figure 3-73.

Figure 3-73 Add parking group

Step 2 Enter the name of parking space group.

Step 3 Click  to select the parking lot that the parking space group belongs to.

Step 4 Set the validity period of parking space group.

off  on means the group is always valid. Click the icon, it changes to  off  on,

then you can set the validity period of the bound parking space group. See Figure 3-73.




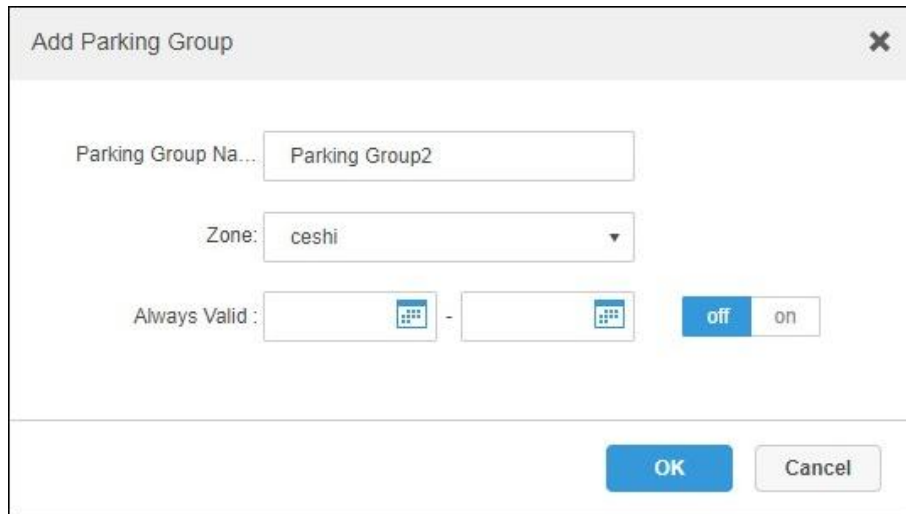
Click  to set the valid period of the binding relationship. When it expires, the group and the parking space will be unbound.

Figure 3-74 Add parking space group



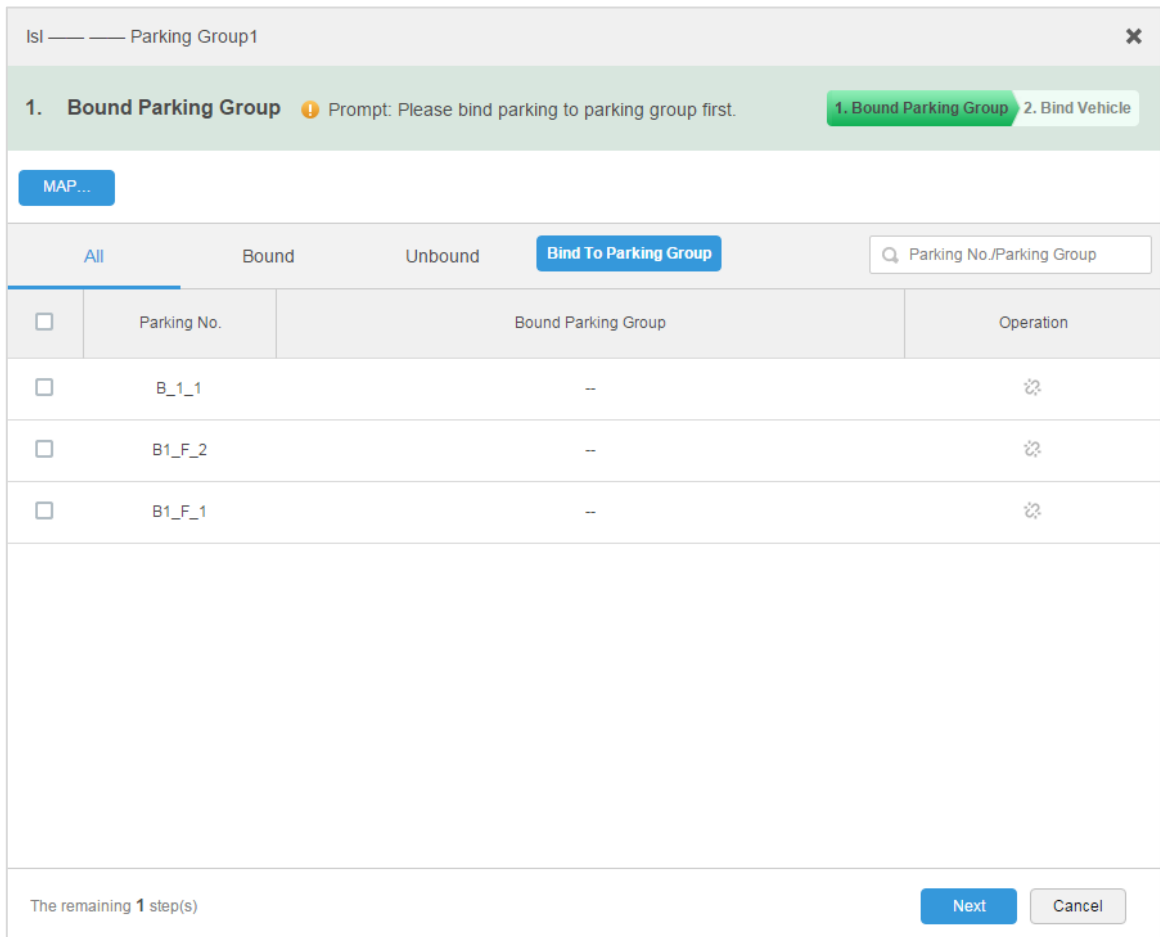
**Step 5** Click **OK**, and then you can start binding parking space group.  
See the section below.

### 3.7.10.2 Binding Parking Space Group

**Step 1** Click  at the upper-right side of a parking space group.


The **Bound Parking Group** interface is displayed. See Figure 3-75.

Figure 3-75 Bind parking space group



**Step 2** Select a parking space, and then click **Bind To Parking Group**.



- Click  to unbind the parking space and the group.
- Enter the name of parking space or group in  to search a parking space or a group easily.
- Click **Bound** or **Unbound** to view the parking space that has been bound or unbound.

**Step 3** Click **Next**.

The **Bind Vehicle** interface is displayed. See Figure 3-76.

Figure 3-76 Bind vehicle

ISI ——— Parking Group1


**2. Bind Vehicle** 🔔 Prompt: bind vehicle, you can freely park on bound parking. 1. Bound Parking Group 2. Bind Vehicle

Parking Count(1)

Parking No.	Layer
B1_F_2	MAP001

Bound Vehicle

+ Bind 🗑️ Delete

<input type="checkbox"/>	Vehicle	Operation
 Sorry, there is no search result.		

The remaining 0 step(s)

Previous Complete Cancel

**Step 4** Click +.

The vehicle list is displayed. See Figure 3-77.

Figure 3-77 Vehicle list

Bind Vehicle ✕

<input type="checkbox"/>	Plate No.	Vehicle Group	Owner	Vehicle Right
<input type="checkbox"/>	12344566	General Vehicle	--	White List

---

Total 1 record(s). ◀ 1 ▶ Go to page

**Step 5** Select vehicle, and then click **Bind**.

The interface of bound vehicle is displayed. See Figure 3-78.



You can select a vehicle and click  to delete the selected vehicle.

Figure 3-78 Bound vehicle

Parking No.	Layer
2_2_3	111_A

Vehicle	Operation
12344566	✕

**Step 6** Click **Complete**.

### 3.7.11 Configuring Guardhouse

Set guardhouse corresponding to the parking lot.

**Step 1** Select **Parking Lot > Watch House Management**, and then click **+**.

The **Add Watch House** interface is displayed.

**Step 2** Enter the name of guardhouse, select the parking lot that the guardhouse belongs to from the **Zone** drop-down list. See Figure 3-79.

Figure 3-79 Add guardhouse

Watch House Name: Watch House1

Zone: cx

**Step 3** Click **OK**.

The system goes back to the **Watch House Management** interface. See Figure 3-80.








You can also click  of the added guardhouse to go to the **Edit Watch House interface**.

Figure 3-80 Edit guardhouse

Watch House Name: \* TEST

Binding Channel	Selected Channel
<input checked="" type="checkbox"/>  777777_1	777777_1 
<input checked="" type="checkbox"/>  1111111_1	1111111_1 

OK Cancel

Step 4 Select the channel that you want to bind to the guardhouse.

Step 5 Click **OK**.

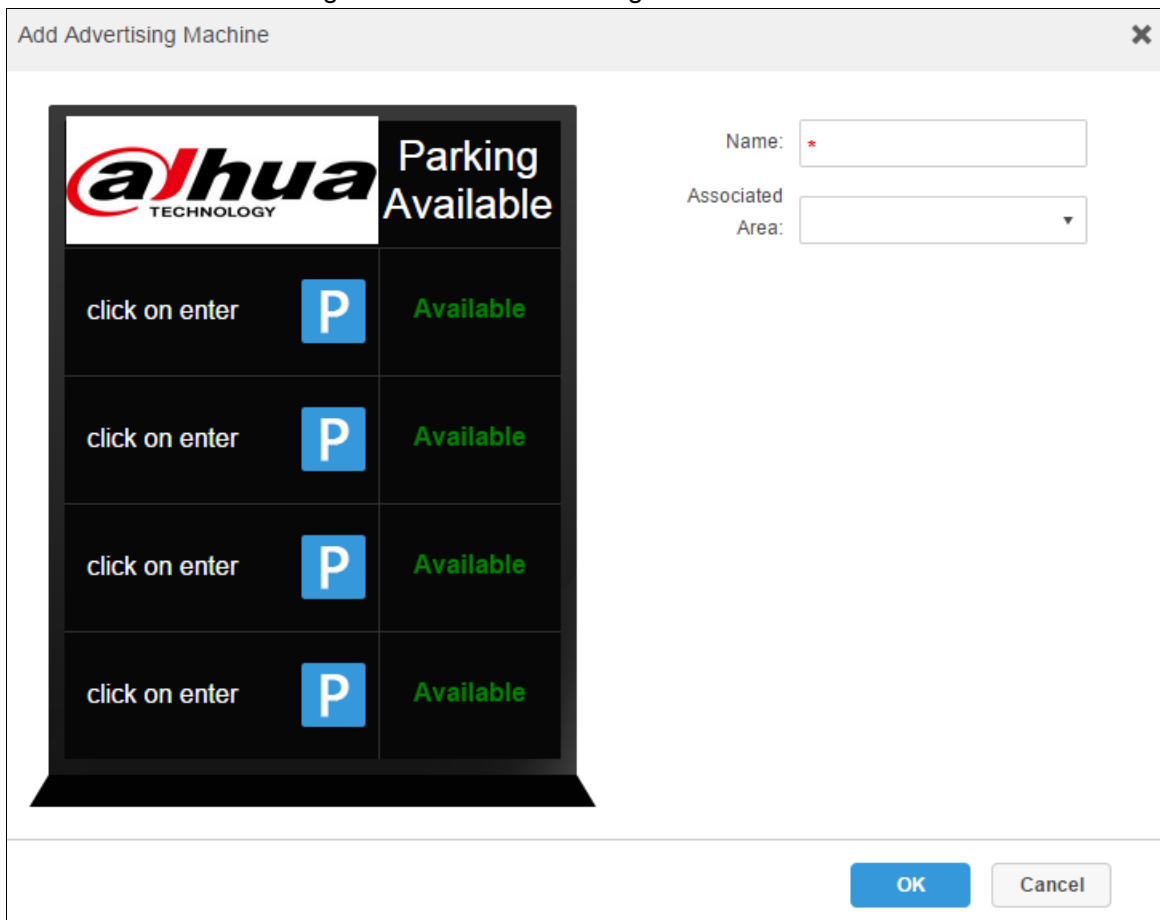
### 3.7.12 AD Machine Management

Add advertising machine to the parking lot, so it is possible to display the parking space information on the advertising machine.

Step 1 Select **Parking Lot > AD Machine Management**, and then click .

The **Add Advertising Machine** interface is displayed. See Figure 3-81.

Figure 3-81 Add advertising machine



Step 2 Enter the machine name and the **Associated Area** (associated parking lot).

Step 3 Click **click on enter** to define names for different parking lots.

Step 4 Click **P** to select from one of the pictures shown in Figure 3-82.

Figure 3-82 Logo



Step 5 Click **Available** to bind parking space group.

Step 6 Click **OK**.

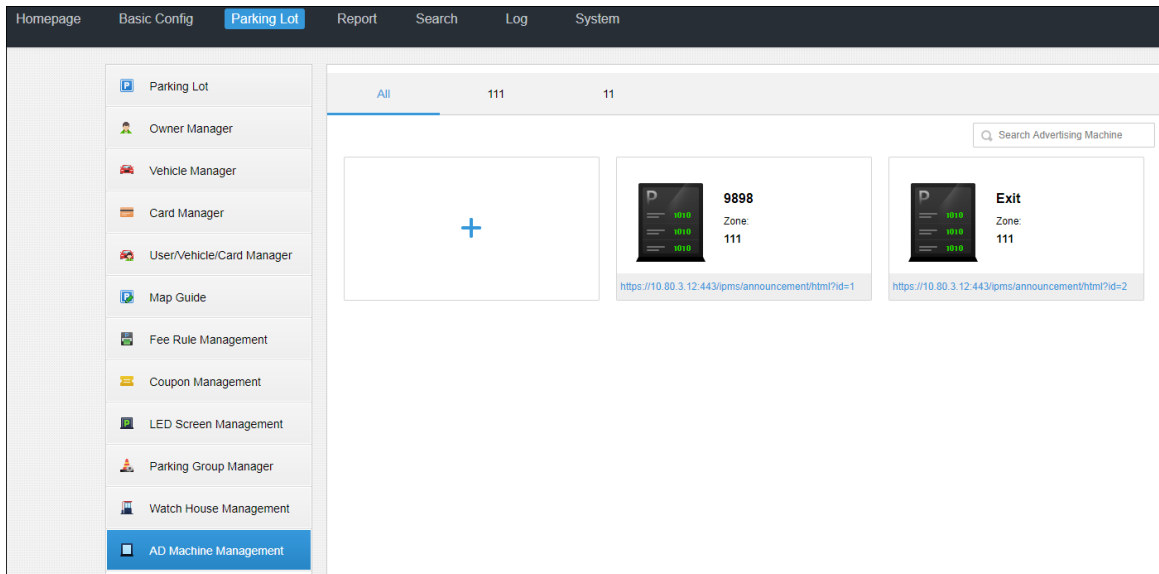
The advertising machine added is displayed on the **AD Machine Management** interface. See Figure 3-83.



Logo and title can be customized.

You can click the link to view the detailed information displayed on the advertising machine.

Figure 3-83 Advertising machine is added



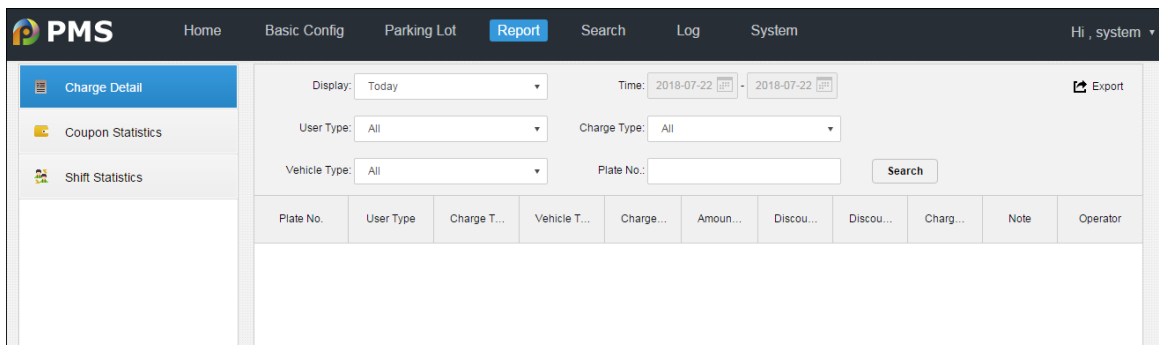
## 3.8 Report Statistics

PMS supports statistics of charging, coupons, and shift.

### 3.8.1 Charge Details

Select **Report > Charge Detail**. The interface shown in Figure 3-84 is displayed.

Figure 3-84 Charge details



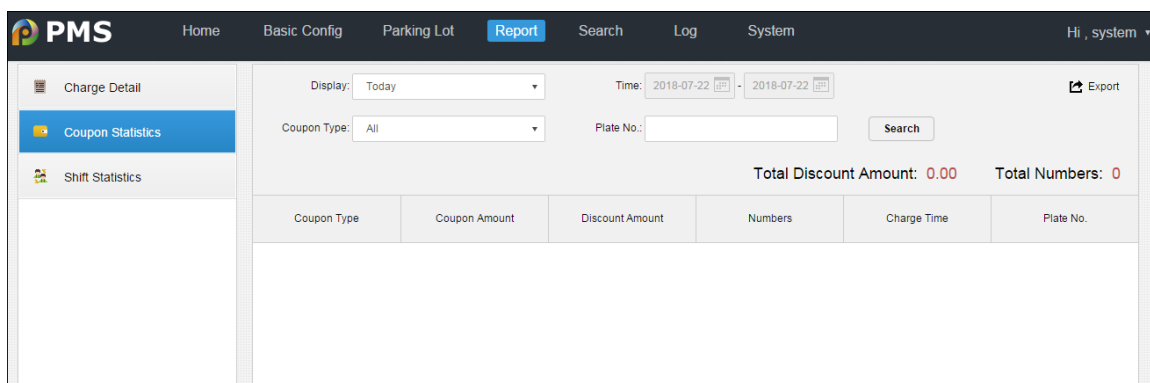
- You can search and view the charge details by day/week/month/year/customized period.
- Supports searching charge details according to Time, User Type, Charge Type, Vehicle Type, and Plate No.
- The details include information such as plate number, user type, charge type, vehicle type, charge amount, amount paid, discount amount, discount type, charge time, and operator.
- Supports exporting the search results in Excel.

### 3.8.2 Coupon Statistics

Select **Report > Coupon Statistics**. The interface shown in Figure 3-85 is displayed.



Figure 3-85 Coupon statistics

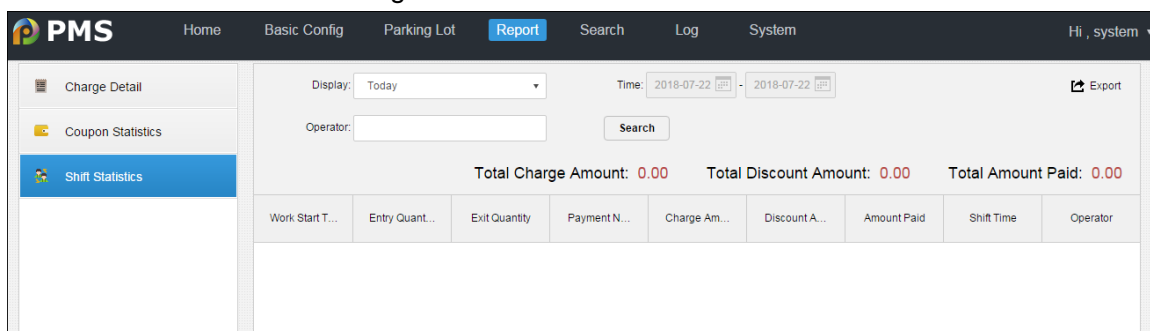


- You can search and view the coupon statistics by day/week/month/year/customized period.
- Supports searching coupon details according to Time, Coupon Type, and Plate No.
- Coupon statistics include information such as coupon type, coupon amount, discount amount, number of coupons, charge time, and plate number.
- Supports exporting the search results in Excel.

### 3.8.3 Shift Statistics

Select **Report > Shift Statistics**. The interface shown in Figure 3-86 is displayed.

Figure 3-86 Shift statistics



- You can search and view the shift statistics by day/week/month/year/customized period.
- Supports searching shift details according to Time, and Operator.
- Shift statistics include information such as work start time, vehicles that enter/leave the parking lot, charge times, charge amount, discount amount, amount paid, shift time, and operator.
- Supports exporting the search results in Excel.

## 3.9 Information Search

You can search information such as vehicles that enters/leaves the parking lot, vehicles in the parking lot, records of vehicles, records of chassis checks.

### 3.9.1 Vehicles that Enter/Leave

You can search the information of vehicles that enter or leave, and export the search results in Excel.

Select **Search > Vehicle Enter/Exit**. The interface shown in Figure 3-87 is displayed.





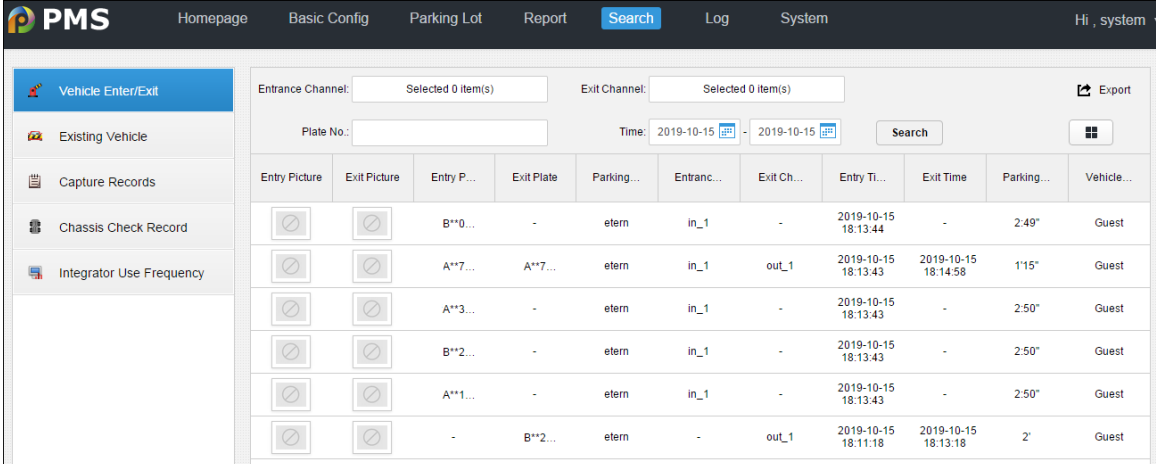


You can click  to select the vehicle information to be displayed on the interface.  means the item is selected.

Figure 3-87 Vehicle that enters/exits



The screenshot shows the PMS interface for 'Vehicle Enter/Exit'. The top navigation bar includes 'Homepage', 'Basic Config', 'Parking Lot', 'Report', 'Search', 'Log', and 'System'. The left sidebar has options: 'Vehicle Enter/Exit', 'Existing Vehicle', 'Capture Records', 'Chassis Check Record', and 'Integrator Use Frequency'. The main area has search filters for 'Entrance Channel' and 'Exit Channel' (both set to 'Selected 0 Item(s)'), a 'Plate No.' field, and a 'Time' range from '2019-10-15' to '2019-10-15'. An 'Export' button is in the top right. Below the filters is a table with columns: 'Entry Picture', 'Exit Picture', 'Entry P...', 'Exit Plate', 'Parking...', 'Entranc...', 'Exit Ch...', 'Entry Ti...', 'Exit Time', 'Parking...', and 'Vehicle...'. The table contains six rows of vehicle records.

Entry Picture	Exit Picture	Entry P...	Exit Plate	Parking...	Entranc...	Exit Ch...	Entry Ti...	Exit Time	Parking...	Vehicle...
		B**0...	-	etern	in_1	-	2019-10-15 18:13:44	-	2:49"	Guest
		A**7...	A**7...	etern	in_1	out_1	2019-10-15 18:13:43	2019-10-15 18:14:58	1'15"	Guest
		A**3...	-	etern	in_1	-	2019-10-15 18:13:43	-	2:50"	Guest
		B**2...	-	etern	in_1	-	2019-10-15 18:13:43	-	2:50"	Guest
		A**1...	-	etern	in_1	-	2019-10-15 18:13:43	-	2:50"	Guest
		-	B**2...	etern	-	out_1	2019-10-15 18:11:18	2019-10-15 18:13:18	2'	Guest

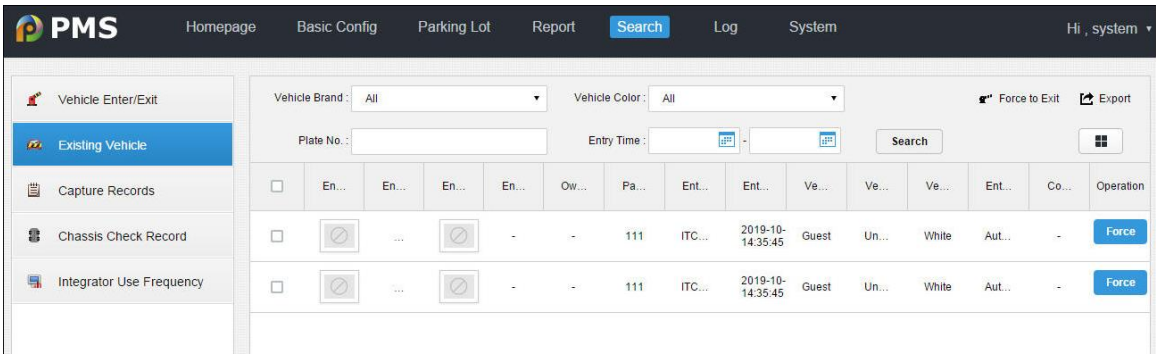
- Click **Entrance Channel/Exit Channel** to select device that detects vehicles.
- Click  to set time period.
- Click **Search** to search the records of vehicles that enter or leave.
- Click  **Export** to export the search results.

### 3.9.2 Vehicles in Parking Lot

You can search vehicles in the parking lot according to vehicle plate number and the time that the vehicle enters the parking lot. You can also export the search results in Excel. For vehicle that has left the parking lot but its information is still displayed on the interface, click **Force to Exit**, and the vehicle information will be cleared.



Select **Search > Existing Vehicle**. The interface shown in Figure 3-88 is displayed.

Figure 3-88 Vehicles in the parking lot



The screenshot shows the PMS interface for 'Existing Vehicle'. The top navigation bar includes 'Homepage', 'Basic Config', 'Parking Lot', 'Report', 'Search', 'Log', and 'System'. The left sidebar has options: 'Vehicle Enter/Exit', 'Existing Vehicle', 'Capture Records', 'Chassis Check Record', and 'Integrator Use Frequency'. The main area has search filters for 'Vehicle Brand' (set to 'All'), 'Vehicle Color' (set to 'All'), a 'Plate No.' field, and an 'Entry Time' range from '2019-10-14 14:35:45' to '2019-10-14 14:35:45'. There are 'Force to Exit' and 'Export' buttons in the top right. Below the filters is a table with columns: 'En...', 'En...', 'En...', 'En...', 'Ow...', 'Pa...', 'Ent...', 'Ent...', 'Ve...', 'Ve...', 'Ve...', 'Ent...', 'Co...', and 'Operation'. The table contains two rows of vehicle records.

En...	En...	En...	En...	Ow...	Pa...	Ent...	Ent...	Ve...	Ve...	Ve...	Ent...	Co...	Operation	
<input type="checkbox"/>		...		-	-	111	ITC...	2019-10-14 14:35:45	Guest	Un...	White	Aut...	-	<b>Force</b>
<input type="checkbox"/>		...		-	-	111	ITC...	2019-10-14 14:35:45	Guest	Un...	White	Aut...	-	<b>Force</b>

- Enter plate number in the **Plate No.** box.
- Click  to set time period.
- Click **Search** to search the vehicles in the parking lot within the defined time period.
- Click  **Export** to export the search results.

- Click **Force to Exit** , and the vehicle will be cleared from the parking lot.

### 3.9.3 Snapshot Record

Snapshot record provides information of vehicles detected by the ANPR camera within defined time period, and you can export the snapshot records in Excel.

Select **Search > Capture Records**. The interface shown in Figure 3-89 is displayed.

Figure 3-89 Snapshot record

The screenshot shows the PMS web interface with the 'Search' menu selected. The 'Capture Records' section is active, displaying a search form and a table of results. The search form includes fields for ANPR Channel (Selected 0 item(s)), Direction (All), Plate No. Recogn... (All), Plate No., Vehicle Brand (All), Vehicle Color (All), and Time (2019-05-30 to 2019-05-30). A 'Search' button and 'Export Picture'/'Export' links are also visible. The table below shows the search results.

Snapshot	Plate No.	Parking Lot	ANPR C...	Time	Vehicle T...	Vehicle B...	Vehicle C...	Direction	Country
		zxhTest	64-2-出_1	2019-05-30 17:39:04	Guest	Unknown	Black	Exit	-
		zxhTest	64-2-出_1	2019-05-30 17:37:34	Guest	Unknown	Black	Exit	-
		zxhTest	64-2-出_1	2019-05-30 17:36:27	Guest	Unknown	Black	Exit	-
		zxhTest	64-1-出_1	2019-05-30 17:36:04	Guest	Unknown	Red	Exit	-
		zxhTest	64-2-出_1	2019-05-30 17:35:03	Guest	Unknown	Black	Exit	-
		zxhTest	64-1-出_1	2019-05-30 17:34:53	Guest	Unknown	Black	Exit	-
		zxhTest	64-1-出_1	2019-05-30 17:34:46	Guest	Unknown	Red	Exit	-
		zxhTest	64-1-进_1	2019-05-30 17:32:59	Guest	Unknown	Black	Enter	-
		zxhTest	64-1-进_1	2019-05-30 17:32:57	Guest	Unknown	Black	Enter	-
		zxhTest	64-1-进_1	2019-05-30 17:32:53	Guest	Unknown	Black	Enter	-

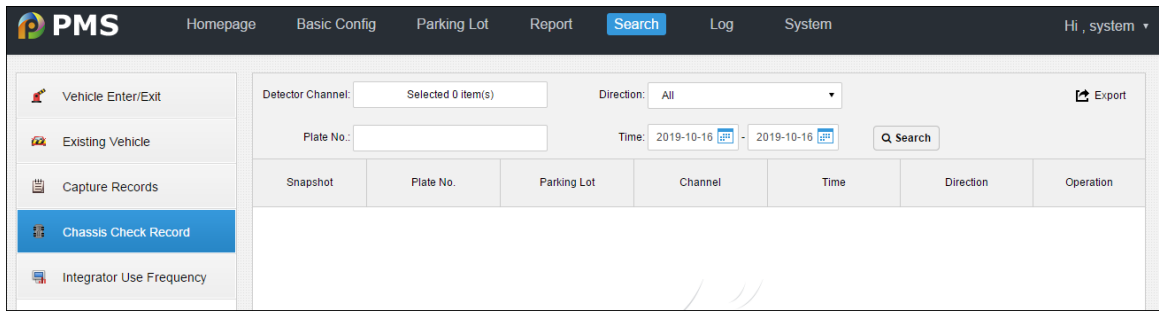
- Click the **ANPR Channel** box to select ANPR camera in the parking lot.
- Click ▼ to select the direction of vehicle, including **All**, **Enter**, and **Exit**.
- Enter plate number in the **Plate No.** box.
- Click to set time period.
- Click **Search** to search snapshot records of vehicles.
- Click **Export** to export the search results.



### 3.9.4 Chassis Check Record

Chassis detector is mainly used for scanning and detecting any dangerous items on the chassis of vehicle. Supports searching chassis detection records according to Detector Channel, Direction, Plate No., and Time. You can also export the search results in Excel.

Select **Search > Chassis Check Record**. The interface shown in Figure 3-90 is displayed.

Figure 3-90 Chassis check record



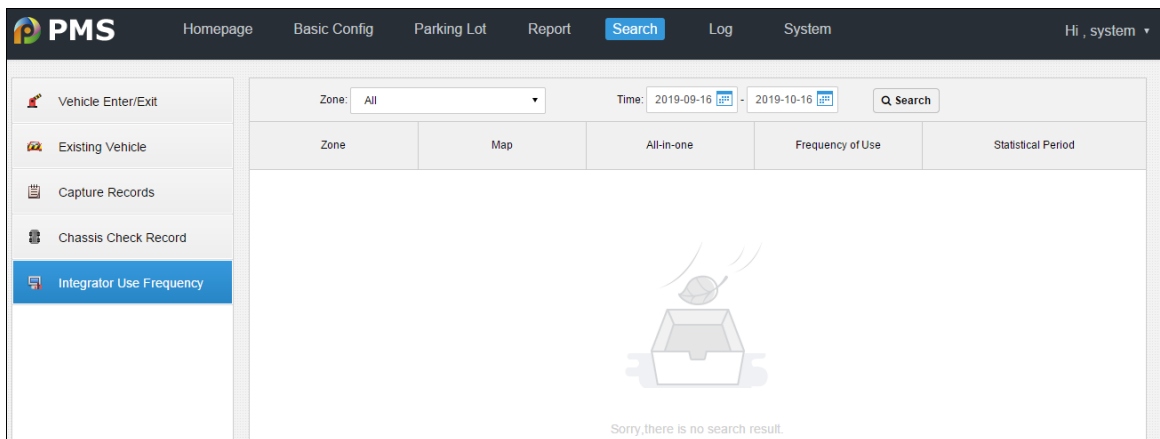
- Click the **Detector Channel** box to select the device that detects the chassis.
- Click ▼ to select the direction of vehicle, including **All**, **Enter**, and **Exit**.
- Enter plate number in the **Plate No.** box.
- Click  to set time period.
- Click **Search** to search chassis detection results.
- Click  **Export** to export the search results.
- Click the snapshot to download the pictures captured by the detector channel.



### 3.9.5 All-in-one Reverse Vehicle Search

The system supports statistics of the use frequency of all-in-one reverse vehicle search device (hereinafter referred to as "All-in-one Device"). Supports searching use frequency of the All-in-one Device according to the parking lot and time. You can also export the search results in Excel.

Select **Search > Integrator Use Frequency**. The interface shown in Figure 3-90 is displayed.

Figure 3-91 Add all-in-one device



- Click ▼ to select the parking lot linked to the **All-in-one Device**.
- Click  to set time period.
- Click **Search** to search use frequency results of the device.
- Click  **Export** to export the search results.

## 3.10 Log

You can search and view logs of device, alarm, management, system, and parking alarm.

### 3.10.1 Device Log

You can view device information such as online and offline status, IP address, and device type. Select **Log > Device Log**. The interface shown in Figure 3-92 is displayed.

Figure 3-92 Device log

Time	Name	Status	IP/Domain	Device Type
2018-07-22 14:18:39	87itc2	Offline		ANPR Device
2018-07-22 14:18:39		Offline		ANPR Device
2018-07-22 14:18:39		Offline		ANPR Device
2018-07-22 14:18:39		Offline		ANPR Device
2018-07-22 14:18:09		Offline		ANPR Device
2018-07-22 14:18:09		Offline		ANPR Device

- Click to select device type.
- Click to set time period.
- Click **Search** to view the information of selected devices within the defined time period.
- Click **Export** to export the search results.

### 3.10.2 Alarm Log

You can view the alarm records. Select **Log > Alarm Log**. The interface shown in Figure 3-93 is displayed.

Figure 3-93 Alarm log

Alarm Type	Alarm Time	Device	Channel
------------	------------	--------	---------

- Click to select alarm type.
- Click the **Device** box to select device type.
- Click to set time period.
- Click **Search** to search and view alarm log.
- Click **Export** to export the search results.

### 3.10.3 Management Log

You can view the operation information of users. Select **Log > Management Log**. The interface shown in Figure 3-94 is displayed. Enter the user name in the **User** box to search and view the operation details in respect of the user.

Figure 3-94 Management log

Time	Operation User	Operation Event
2018-07-22 14:11:41	system	Add Parking Group : Parking Group1
2018-07-22 14:08:23	system	Modify Zone Setup : Isl
2018-07-22 14:08:23	system	Add Zone Setup
2018-07-22 14:08:22	system	Modify Zone Setup : Isl

- Click of the **Module** list to select the operations of module that you want to search.
- Click to set the time period.
- Click to set time period.
- Click **Search** to view the information of selected device(s) within the defined time period.
- Click **Export** to export the search results.

### 3.10.4 System Log

The system log displays the information of system events. Select **Log > System Log**. The interface shown in Figure 3-95 is displayed.

Figure 3-95 System log

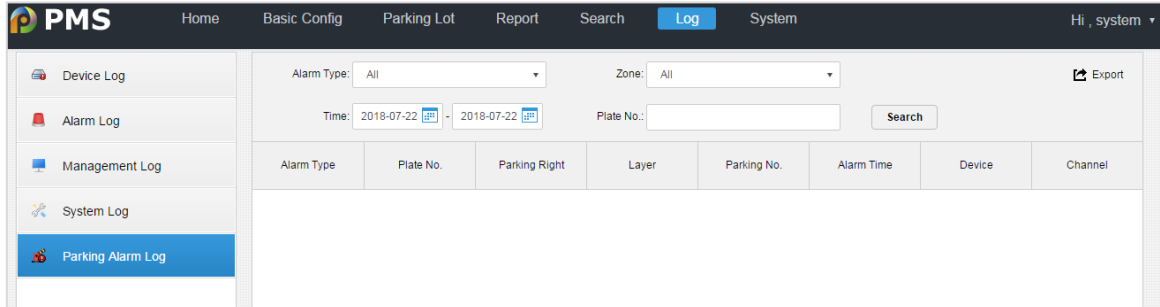
Time	Event
2018-07-22 09:17:51	Server Online(MCD_LED: [redacted])
2018-07-22 09:16:28	Server Offline(MCD_LED: [redacted])
2018-07-22 09:15:50	Successfully registered server([redacted])
2018-07-22 09:15:38	Server Offline([redacted])
2018-07-22 09:15:35	Successfully registered server([redacted])
2018-07-22 09:15:33	Server Offline([redacted])
2018-07-22 09:15:17	Server Online([redacted])
2018-07-22 09:15:17	Server Online([redacted])



- Click to set time period.
- Click **Search** to view the information of selected device(s) within the defined time period.
- Click **Export** to export the search results.

## 3.10.5 Parking Lot Alarm Log

The parking lot alarm log mainly displays the overtime alarm logs of the parking lots. Select **Log > Parking Alarm Log**. The interface shown in Figure 3-96 is displayed. Enter plate number in the **Plate No.** box to search and view the alarm lot of the corresponding vehicle.

Figure 3-96 Parking lot alarm log



- Click **▼** in the **Alarm Type** list to select the alarm type you want to search.
- Click **▼** in the **Zone** drop-down list to select the parking lot.
- Click  to set time period.
- Click **Search** to search and view alarm log.
- Click  **Export** to export the search results.

## 3.11 System

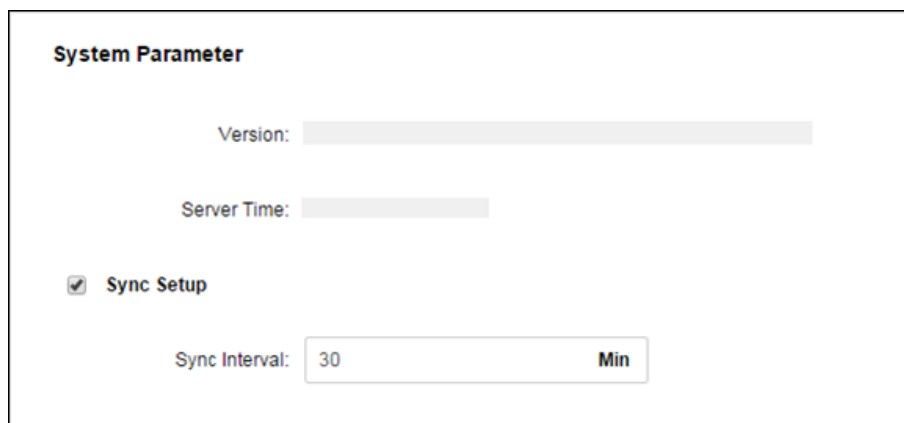


System parameters are designed with default value. If you modified the default value, click **Save** to make the configurations take effect.

### 3.11.1 System Parameter

You can view system information including version and server time, and set the interval of synchronizing time. Select **System > System Parameter**. The interface shown in Figure 3-97 is displayed.

Figure 3-97 System parameter

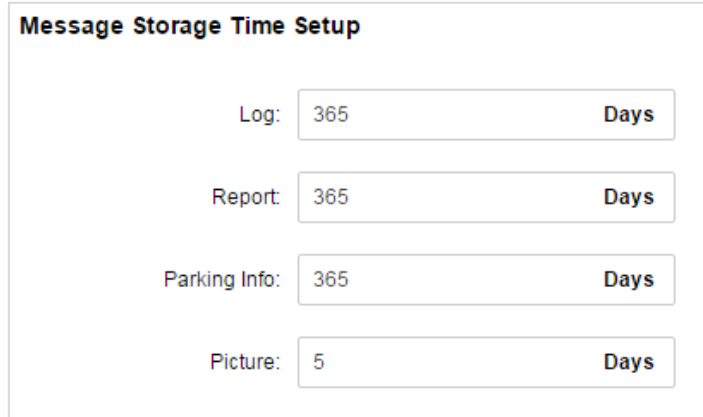


Select the **Sync Setup** check box, and then enter the interval of synchronization.

### 3.11.2 Message Storage Time

Set the time that the logs, reports, parking information, and snapshots will be saved on the server. Select **System > Message Storage Time**. The interface shown in Figure 3-98 is displayed.

Figure 3-98 Message storage time



**Message Storage Time Setup**

Log: 365 Days

Report: 365 Days

Parking Info: 365 Days

Picture: 5 Days

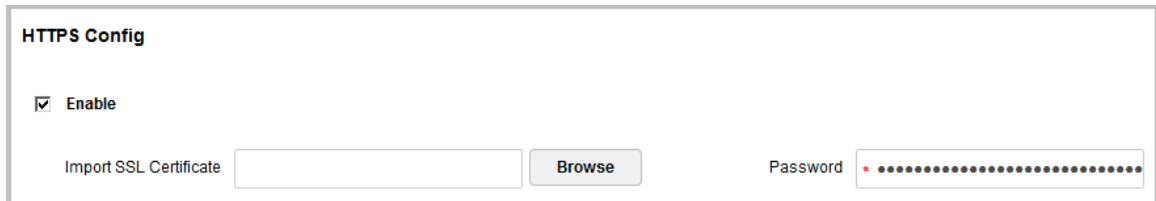
Enter the days that you want to save the information.

### 3.11.3 HTTPS Configuration

Enable the HTTPS protocol of system to ensure system security.

Select **System > HTTPS**. The interface shown in Figure 3-99 is displayed.

Figure 3-99 HTTPS configuration



**HTTPS Config**

Enable

Import SSL Certificate

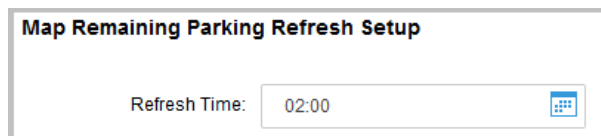
Password \*

Select the **Enable** check box, click **Browse** to select SSL certificate, and enter the password.

### 3.11.4 Remaining Parking Space Refresh

Set the refresh time of remaining parking space on the map. Select **Map Parameter > Map Remaining Parking Refresh Setup**. The interface shown in Figure 3-100 is displayed.

Figure 3-100 Remaining parking space refresh setup



**Map Remaining Parking Refresh Setup**

Refresh Time: 02:00

Set the refresh time (24-hour system).



### 3.11.5 Guide Screen Threshold

Set the number of parking space. No vehicle will be allowed to enter when the remaining parking space in the parking lot reaches the defined number. Select **Map Parameter > Guide Screen Threshold**. The interface shown in Figure 3-101 is displayed.

Figure 3-101 Remaining parking space setup



**Guide Screen Free Parking Setup**

Guide Screen Free Parking:

*i* Free parking=0, red; 0<free parking<=N, yellow; free parking>N, customized color.

Enter the remaining parking space in the **Guide Screen Free Parking** box.

### 3.11.6 Record Configuration

Set the duration of playing back video records. Select **System > Record Config**. The interface shown in Figure 3-102 is displayed.

Figure 3-102 Record configuration



**Record Config**

Playback Time:  s

Enable NVR Binding:  off  on

*i* When the switch is turned on, the nvr channel can be bound to the car detector.

Enter the duration in the **Playback Time** box.

### 3.11.7 Vehicle Information Statistics

Set the source of vehicle information statistics. Select **System > Vehicle Info Statistics**. The interface shown in Figure 3-103 is displayed.

Figure 3-103 Vehicle information statistics

#### Vehicle Info Statistics Source



Vehicle Info Statistics Source:  Entrance/Exit Channels  Spot Detector Channels

*i* After source of vehicle info statistics is switched, you shall reboot the client

You can select entrance/exit channels or parking space detector as the source. It is **Entrance/Exit Channel** by default.



After changing the source, you need to restart the client to make the configuration take effect.

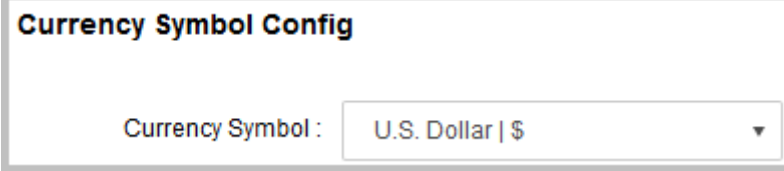
### 3.11.8 Currency Setting

Set the currency that will be displayed on the system when charging parking fees.

Step 1 Select **System > Currency Setting**.

The interface shown in Figure 3-104 is displayed.

Figure 3-104 Currency setting



The screenshot shows a web interface titled "Currency Symbol Config". Below the title, there is a label "Currency Symbol:" followed by a dropdown menu. The dropdown menu is currently open, showing "U.S. Dollar | \$" as the selected option. There is a small downward arrow on the right side of the dropdown box.

Step 2 Click ▾ to select the currency.

If the currency is not included in the list, click + to add the currency that you want to use.

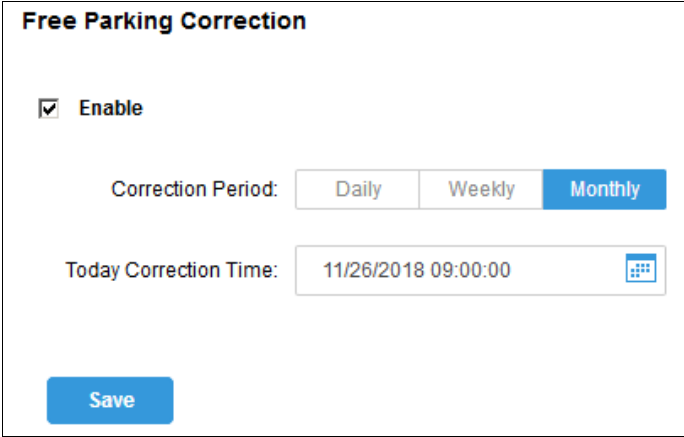
### 3.11.9 Available Parking Space Refresh

Set the period and time that the system refreshes the available parking space.

Step 1 Select **System > Available Parking Refresh**.

The interface shown in Figure 3-105 is displayed.

Figure 3-105 Available parking space refresh



The screenshot shows a web interface titled "Free Parking Correction". It features a checked checkbox labeled "Enable". Below this, there is a "Correction Period:" label followed by three buttons: "Daily", "Weekly", and "Monthly". The "Monthly" button is highlighted in blue. Underneath, there is a "Today Correction Time:" label followed by a text input field containing "11/26/2018 09:00:00" and a calendar icon. At the bottom left, there is a blue "Save" button.

Step 2 Select the **Enable** check box, and then set the period and time that the system refreshes the available parking space.

Step 3 Click **Save**.

### 3.11.10 Public Network IP Configuration

Set the WAN IP address of system, so you can access the system when it is connected to network through this WAN.

Step 1 Select **System > Public Network IP Setup**.

The interface shown in Figure 3-105 is displayed.

Figure 3-106 Public network IP configuration

**Public Network IP Setup**

**Enable**

**Public Network IP:**

Step 2 Select the **Enable** check box, and then configure IP address.

Step 3 Click **Save**.

### 3.11.11 Clearing Vehicle Information

Vehicle information will be cleared automatically after exceeding the defined days.

Step 1 Select **System > Clear Presence Car**.

The **Clear Vehicle Config** interface is displayed. See Figure 3-105.

Figure 3-107 Clear vehicle information

**Clear Vehicle Config**

Interval:  Days

Timed Clear:  off  on

**i** Interval starts from entry time of the vehicle. Vehicle info will be cleared automatically after exceeding the configured days.

Step 2 Click **on** corresponding to **Timed Clear**, and then set the interval of clearing vehicle information. Click **off** to disable this function.

Step 3 Click **Save**.

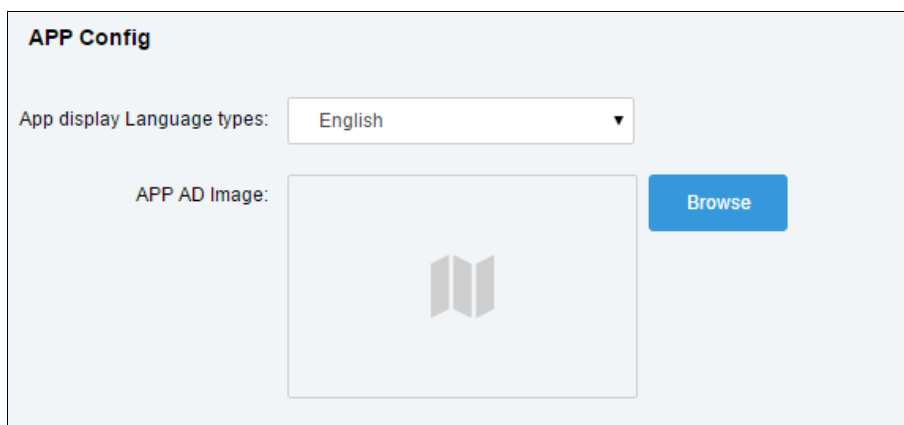
### 3.11.12 APP Configuration

You can set the display language of the reverse vehicle search app and app advertisement picture. If there is no operation within 30 s, the screen saver picture will be displayed. Click any position of the screen to return to the operation status.

Step 1 Select **System > APP Config**.

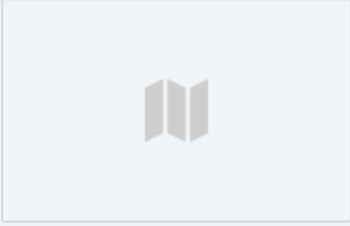
The **APP Config** interface is displayed. See Figure 3-105.

Figure 3-108 App display type configuration



**APP Config**

App display Language types: English

APP AD Image:  [Browse](#)

**Step 2** Select app display language. Currently, it supports English, French, Dutch, Italian, Spanish, German, and Portuguese.

**Step 3** Click **Browse** to import the app advertisement picture.

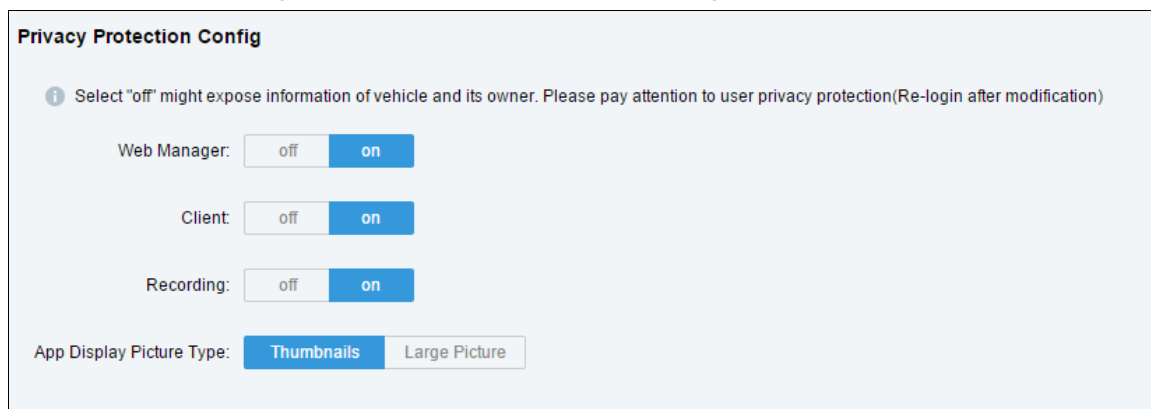
### 3.11.13 Privacy Protection Configuration

You can select turning on or off privacy protection of web manager, client, and recording. In addition, you can select displaying the pictures on the reverse vehicle search app in thumbnails (license plate picture) or large picture (the entire vehicle).

**Step 1** Select **System > Privacy Policy Switch**.

The **Privacy Protection Config** interface is displayed. See Figure 3-109.

Figure 3-109 Privacy protection configuration



**Privacy Protection Config**

Select "off" might expose information of vehicle and its owner. Please pay attention to user privacy protection(Re-login after modification)

Web Manager:  off  on

Client:  off  on

Recording:  off  on

App Display Picture Type:  Thumbnails  Large Picture

**Step 2** Turn **On** or **Off** privacy protection.



Privacy protection is turned on by default. If turned off, information of vehicle and its owner might be exposed. Please operate with care.

When privacy protection is turned on, some part of your information will not be displayed to protect your privacy. See Table 3-23.

Table 3-23 Privacy protection

Name	Description
Web Manager	After being turned on (default), the 3rd and 4th digits of the license plate, and the 4 digits in the middle of a phone number will not be displayed. In addition, the vehicle picture and frequency of the vehicle entering or leaving the parking lot ( <b>Search &gt; Vehicle Enter/Exit</b> ) will not be displayed. For vehicle owner, only the 1 <sup>st</sup> and the last characters of the name will be displayed (other characters are displayed as *). For email address, characters before "@" are displayed as *.
Client	After being turned on (default), the 3rd and 4th digits of the license plate will not be displayed. Vehicle snapshots will not be displayed on Web Manager and PMS Client, but will be displayed in vehicle plate thumbnails on PMS Cashier. For central charge, you need to enter at least 3 characters of the plate number to search for the target plate on PMS Cashier client.
Recording	After being turned on (default), <b>Playback</b> and <b>Download Center</b> menus will not be displayed on the PMS Client, and the icon of viewing videos in <b>Event Center, Map</b> , and <b>Search &gt; Snapshot Record</b> on the PMS Client will not be displayed.
Add Display Picture Type	Select displaying the pictures on the reverse vehicle search app in <b>Thumbnails</b> (license plate picture) or <b>Large Picture</b> (picture of the entire vehicle). It is <b>Thumbnails</b> by default.

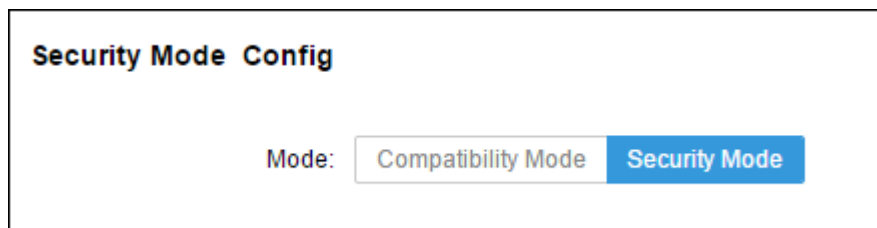
### 3.11.14 Security Mode Config

Set the security mode of the system.

**Step 1** Select **System > Security Mode Config**.

The **Security Mode Config** interface is displayed. See Figure 3-110.

Figure 3-110 Security mode configuration



**Step 2** Select **Compatibility Mode** or **Security Mode**.

We recommend selecting security mode. Compatibility mode might make your system expose to potential security risk.

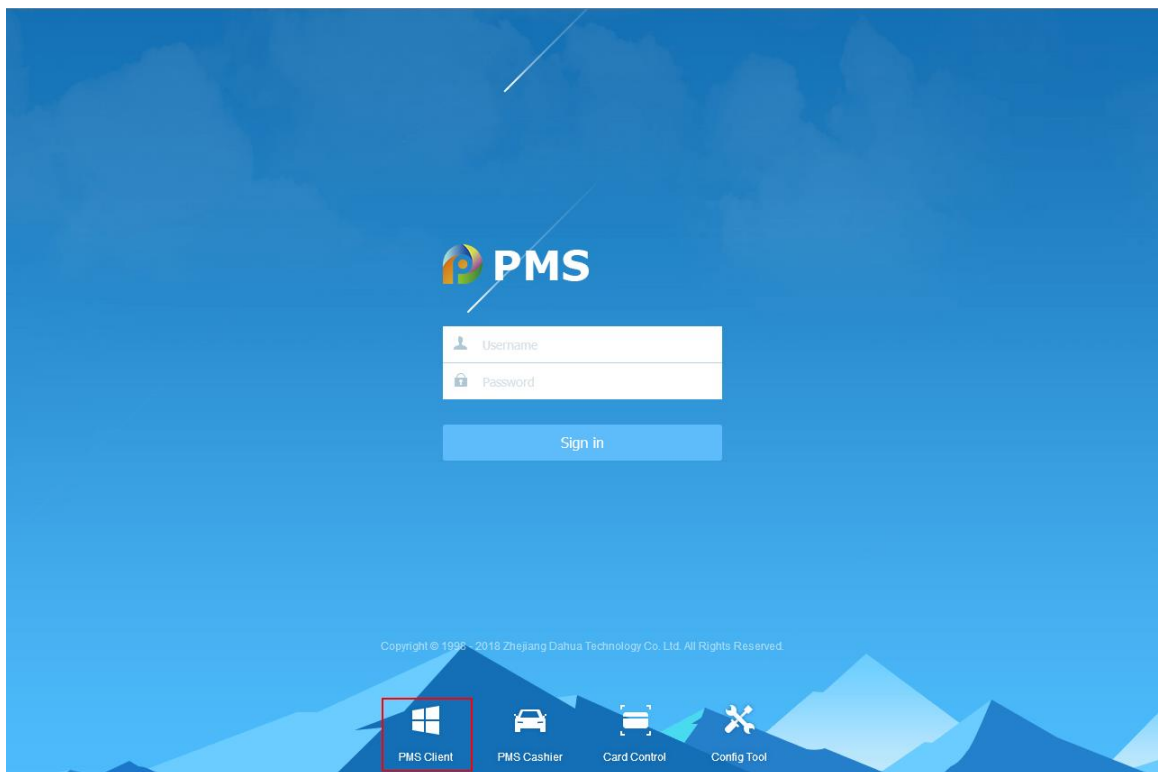
# 4 PMS Client

## 4.1 Install and Uninstall

### 4.1.1 Installing Client

You can install PMS client on the web interface of PMS. See Figure 4-1.

Figure 4-1 Web login



**Step 1** Click .

A dialog box that prompts file download is displayed.

**Step 2** Click **Save**, and download and save the PMS client to your PC.

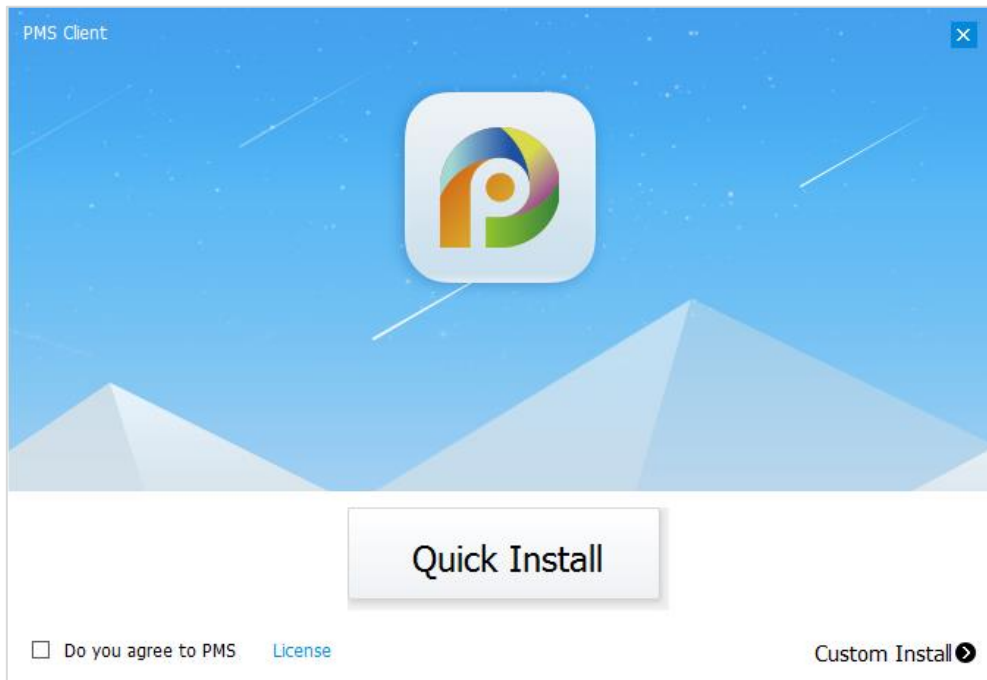
**Step 3** Double-click "General\_PMS\_Professional\_Control\_Client\_Eng\_V1.01.000.exe."

The **Quick Install** interface is displayed. See Figure 4-2.



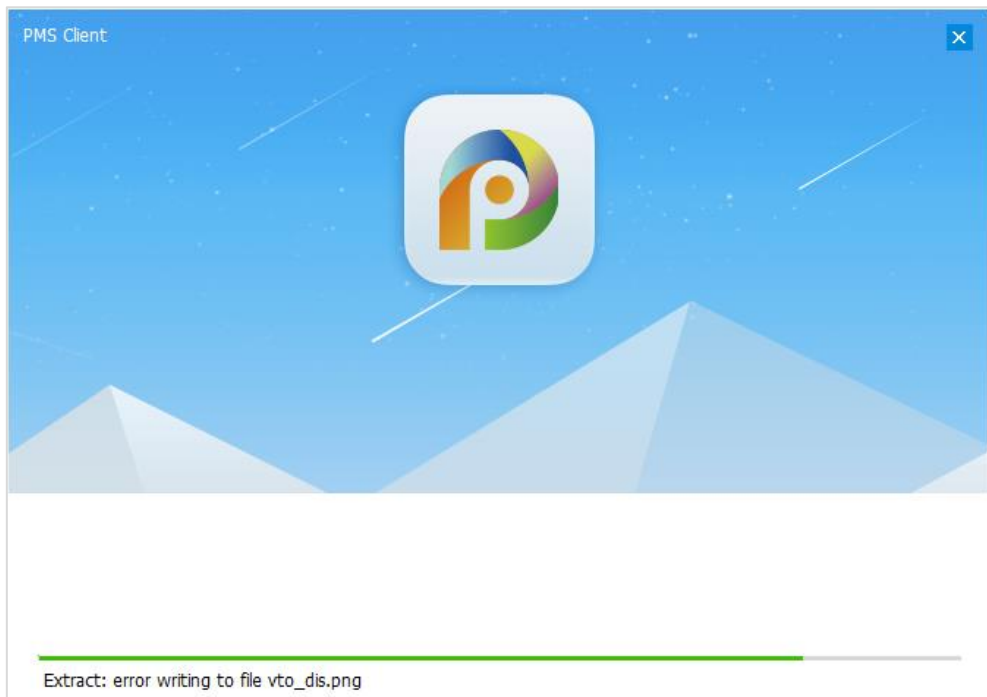
The name of installation package might vary depending on the software version, and the actual package shall prevail.

Figure 4-2 Quick install



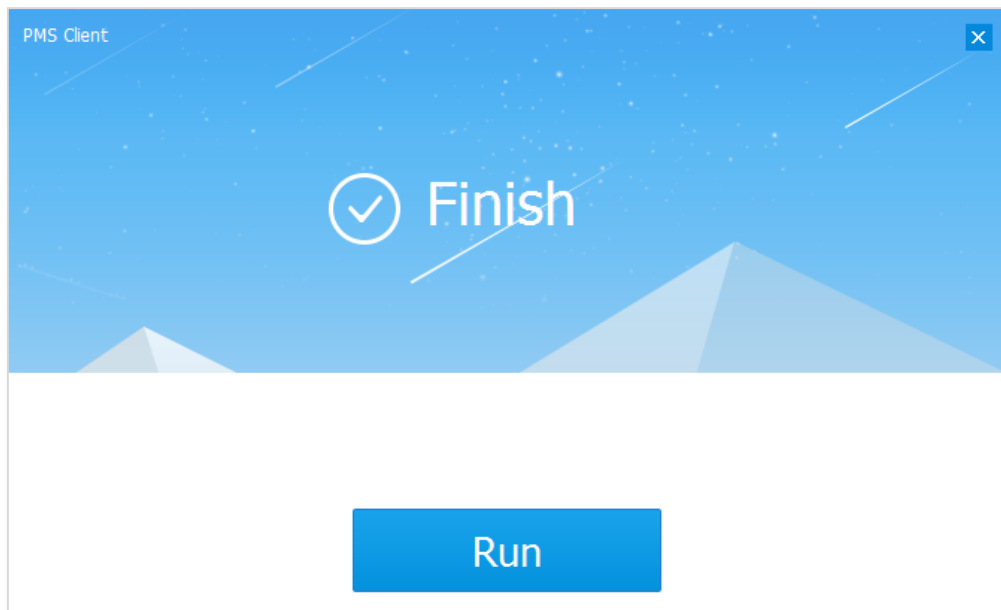
**Step 4** Click **License** to read the agreement. After reading and understanding the agreement, select the **Do you agree to PMS License** check box, and click **Quick Install**. You can also click **Custom Install** to select the installation path before installation starts. The installation progress interface is displayed. See Figure 4-3.

Figure 4-3 Installation progress



After installation, the interface shown in Figure 4-4 is displayed.

Figure 4-4 Installation completed

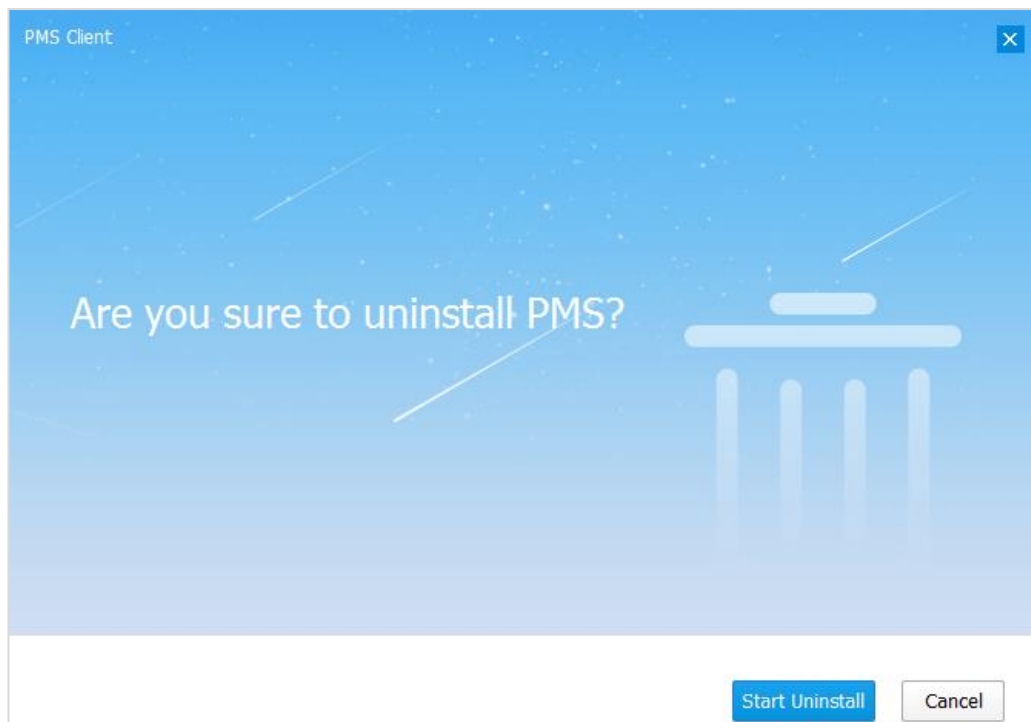


## 4.1.2 Uninstalling Client

Step 1 Click **All Programs** from your PC start menu to find the PMS Client folder, and then click **Uninstall PMS Client**. The interface shown in Figure 4-5 is displayed.

Step 2 Click **Start Uninstall** to uninstall the PMS client.

Figure 4-5 Uninstall



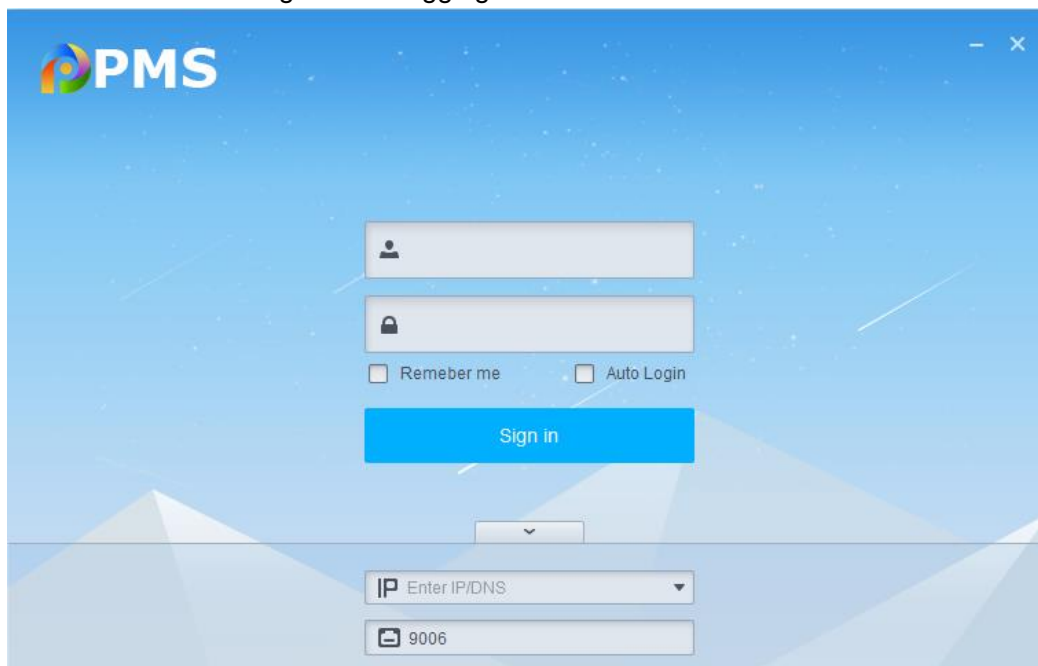


## 4.2 Functions

### 4.2.1 Logging in to Client

Double-click the shortcut of PMS Client on your desktop. The **Sign in** interface is displayed. See Figure 4-6.

Figure 4-6 Logging in to PMS client



**Step 1** Enter the username and password.

**Step 2** Click  to enter server IP address and port.

The server IP address is the same IP for logging in PMS web interface. In respect of port, it is 9006 by default.

**Step 3** Click **Sign in**.

The **Home** interface is displayed. See Figure 4-7. For details, see Table 4-1.

Figure 4-7 Home page

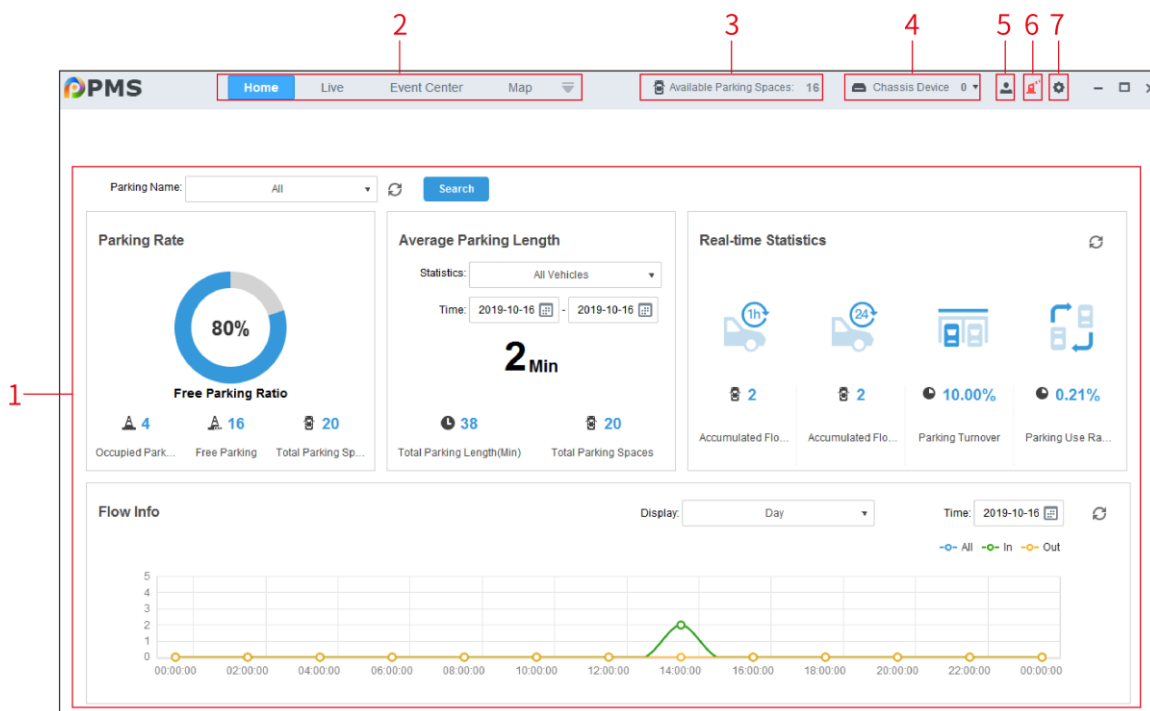






Table 4-1 Home page description

No.	Description
1	Main interface. See "3.2 Homepage."
2	Function bar. You can click different tabs to realize functions such as viewing real-time videos, playing back and downloading video records, viewing events, vehicle information, and chassis check reports, and setting map.
3	Displays the parking space available.
4	You can set chassis check device. Click  next to <b>Chassis Device</b> , and the interface for setting chassis device is displayed. Select chassis device, click <b>Apply</b> , and then <b>OK</b> .
5	Click  to log out and obtain the help document.
6	In emergency situation, click  to open or close the barrier.
7	Click  to configure parking lot information and basic information of client. <ul style="list-style-type: none"> <li>Select <b>Entrance/Exit</b>, and then select the parking lot linked to the guardhouse. Click <b>Apply</b> or <b>OK</b>, and you need to log in to the client again to make the configuration take effective.</li> <li>Select <b>Basic Setup</b> to set the language of client and storage path of file.</li> </ul>

## 4.2.2 Live View

Click **Live**, and the **Live** interface is displayed. Double-click channel from the device tree at the left side, or drag the channel to the video window, then you can view the real-time video of the channel. See Figure 4-8. For details, see Table 4-2.

Figure 4-8 Live

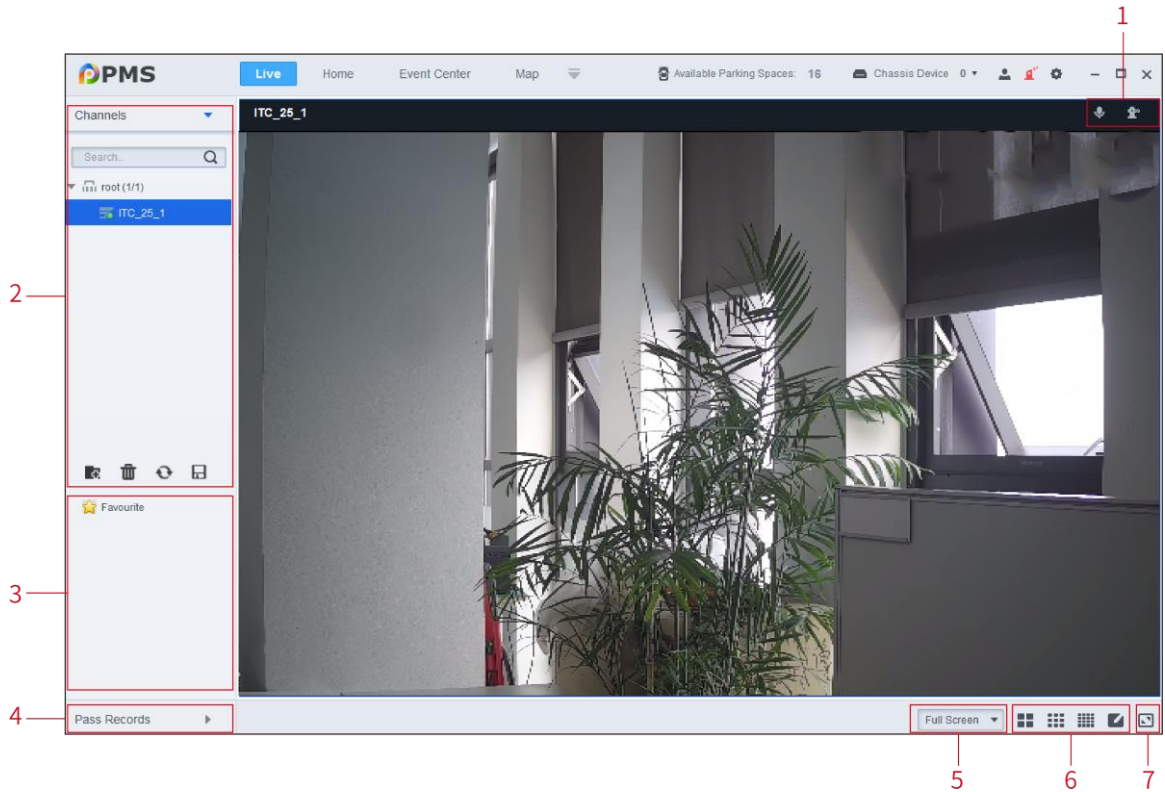









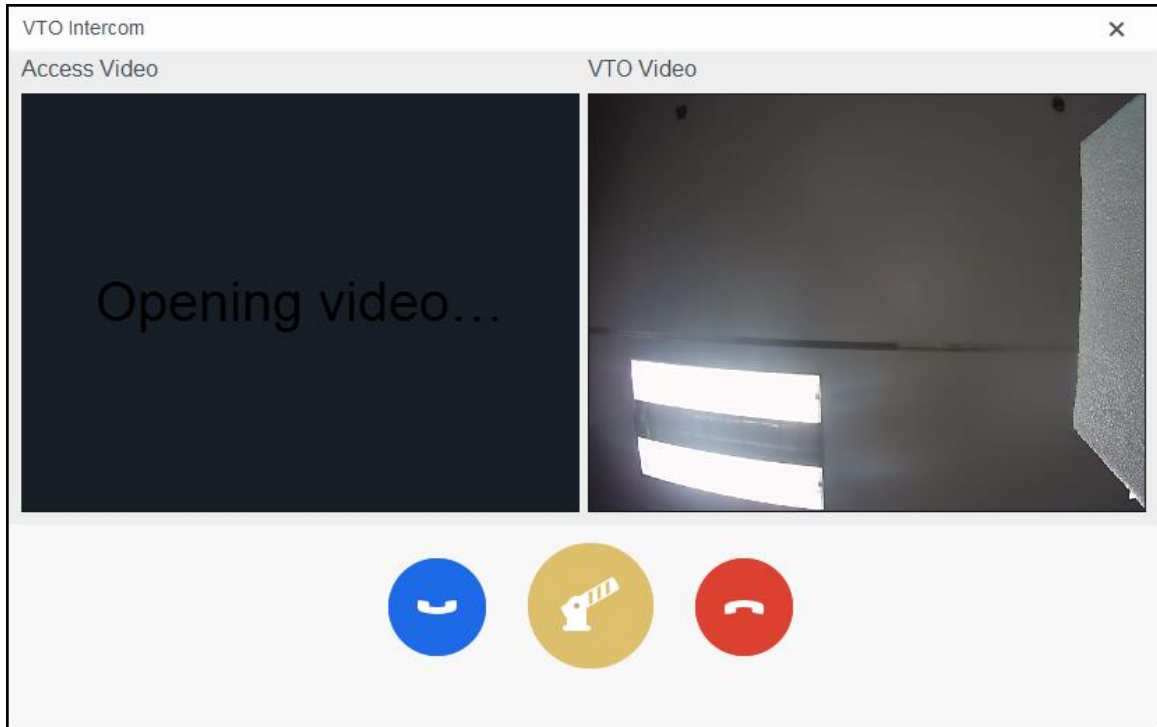
Table 4-2 Description of live interface

No.	Description
1	<ul style="list-style-type: none"> <li>: Click it to start call with VTO (outdoor intercom). During remote call, only videos of channels that have been bound to VTO will be played.</li> <li>: Click it to remotely open the barrier. It is available when barrier is connected to the camera.</li> </ul>
2	<p>Device tree that displays channels.</p> <ul style="list-style-type: none"> <li>: Device channel is abnormal.</li> <li>: Device channel is normal, but no video is played.</li> <li>: Video is played.</li> </ul>
3	<p>Favorites: Right-click a channel, and then click <b>Add to Favorites</b> to add the channel to your favorites.</p>
4	<p>Pass records: Records of vehicles that pass the entrance/exit. Supports comparing snapshots of passing vehicles and license plate. You can also view the video when the vehicle passes.</p>
5	<p>Screen display: Select a window, and then select <b>Full Screen</b> or <b>Original</b>.</p>
6	<p>Window split: Select the number of windows that display the video image. You can select 4, 9, or 16 windows, or click  to select custom mode.</p>

No.	Description
7	Full screen: Click  to enter full screen mode. To exit full screen, press Esc key, or right-click <b>Exit Full Screen</b> .

If a call is made from device, the system displays a message box shown in Figure 4-9. You can view video image, answer or hang up the call, and open the barrier. After opening the barrier, you can enter the records according to system message.

Figure 4-9 Live



## 4.2.3 Playback



Playback tab will not be displayed on the client unless privacy protection of **Recording** is turned **Off** from **System > Privacy Protection Config** on the web manager.

Click **Playback**, select video channel from the device tree at the left side, set the time period and stream, and then click **Search**. The video playback interface is shown as Figure 4-10. For description of the icons, see Table 4-3.

Figure 4-10 Playback

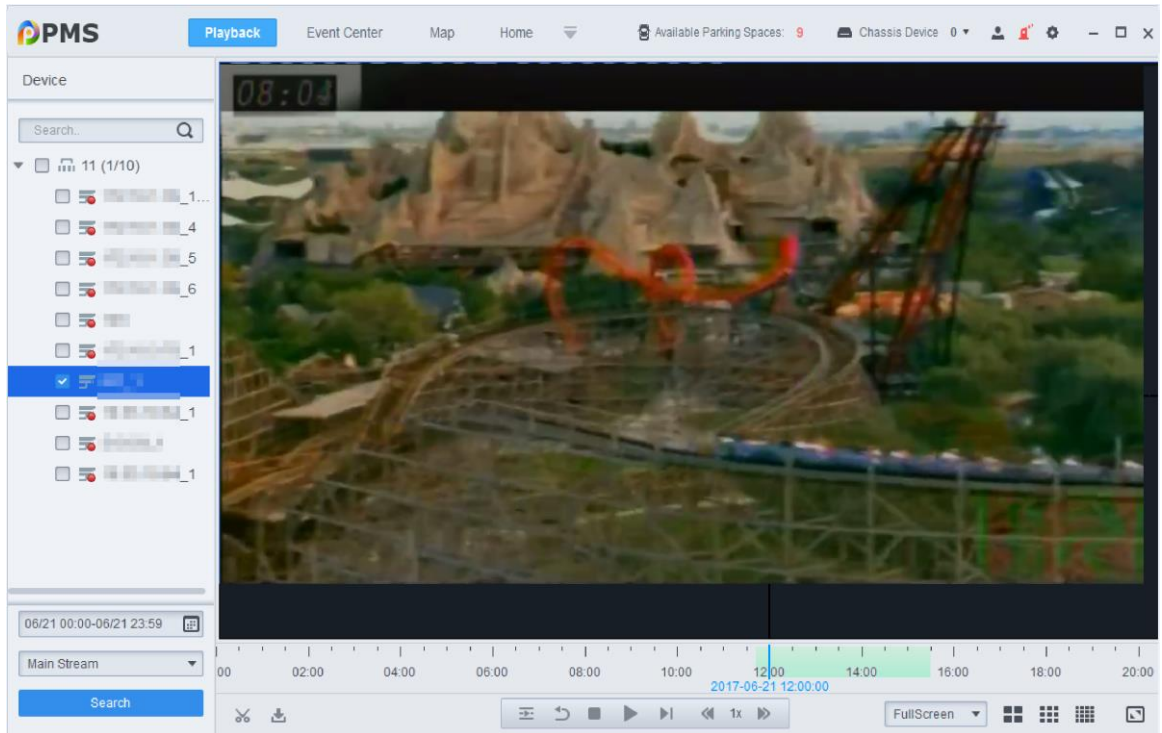


Table 4-3 Icon description


Icon	Description	Icon	Description
	Video clip		Download
	Sync play		Play video in reverse
	Single-frame play		Stop
	Speed up playing at 2x, 4x, 8x		Play/Pause
	Slow down playing at 1/2x, 1/4x, 1/8x	—	—

## 4.2.4 Download Center



The **Download Center** tab will not be displayed on the client unless privacy protection of **Recording** is turned **Off** from **System > Privacy Protection Config** on the web manager.

**Step 1** Click **Download Center** tab, and then the **Download Center** interface is displayed. See Figure 4-11.

**Step 2** Select channel from the device tree at the left side, click , set time period, and then click **Search** to view video records within the selected time period.

**Step 3** Select the video record you want to download, and the system start downloading.



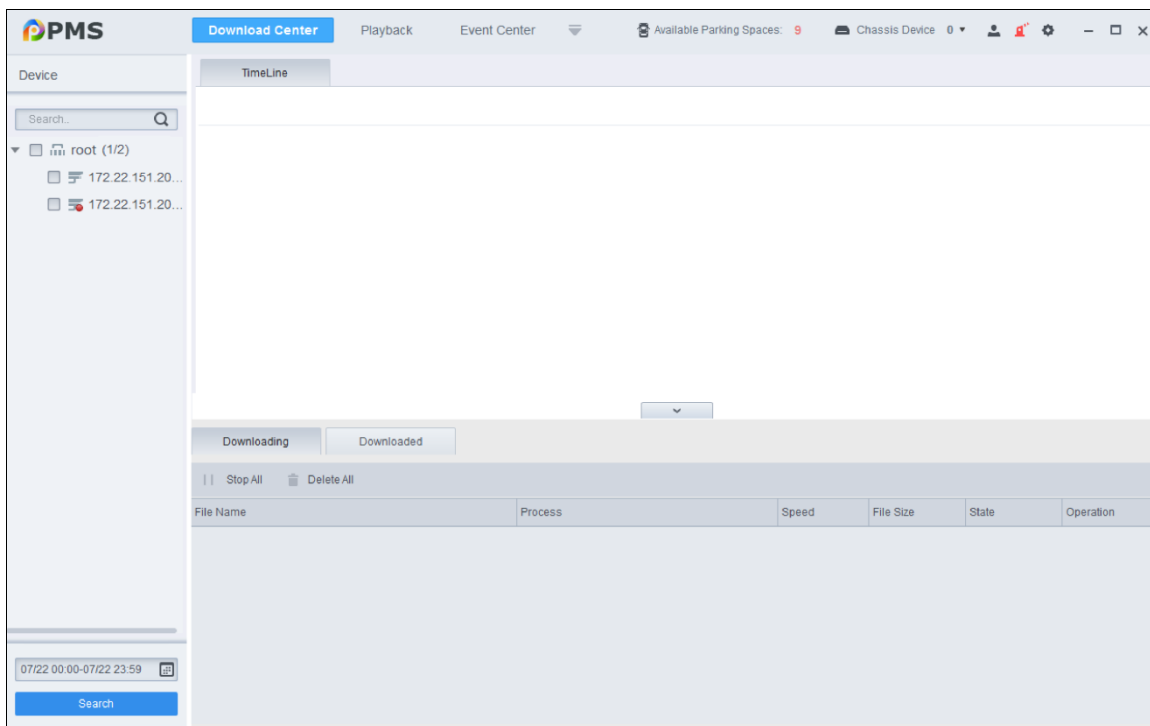
Click  **Stop All** to stop downloading all download tasks, and click  **Delete All** to delete all the tasks.

Figure 4-11 Download center



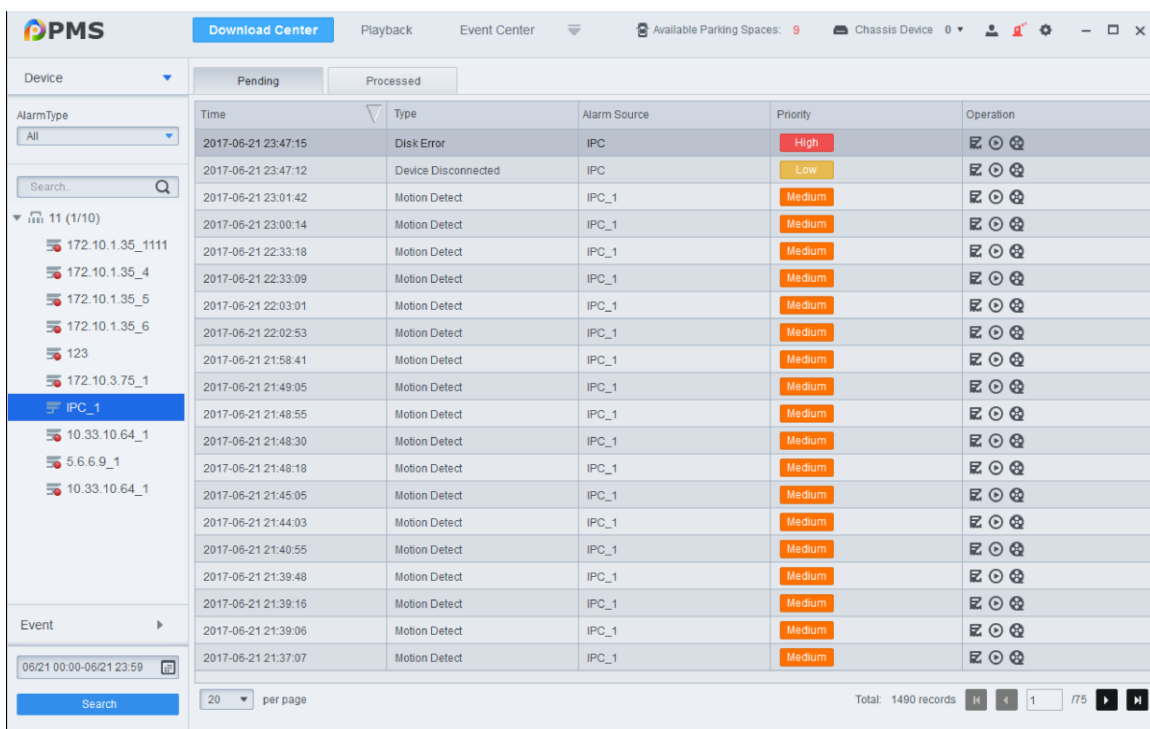
## 4.2.5 Event Center

**Step 1** Click , and then select **Event Center** from the list.

**Step 2** Select **Alarm Type**, video channel, and set time period, then click **Search**.

The search results are displayed. See Figure 4-12.

Figure 4-12 Alarm search



**Step 3** You can process the alarm events, play real-time video, and play back video records.

- Click  to process the alarm events.


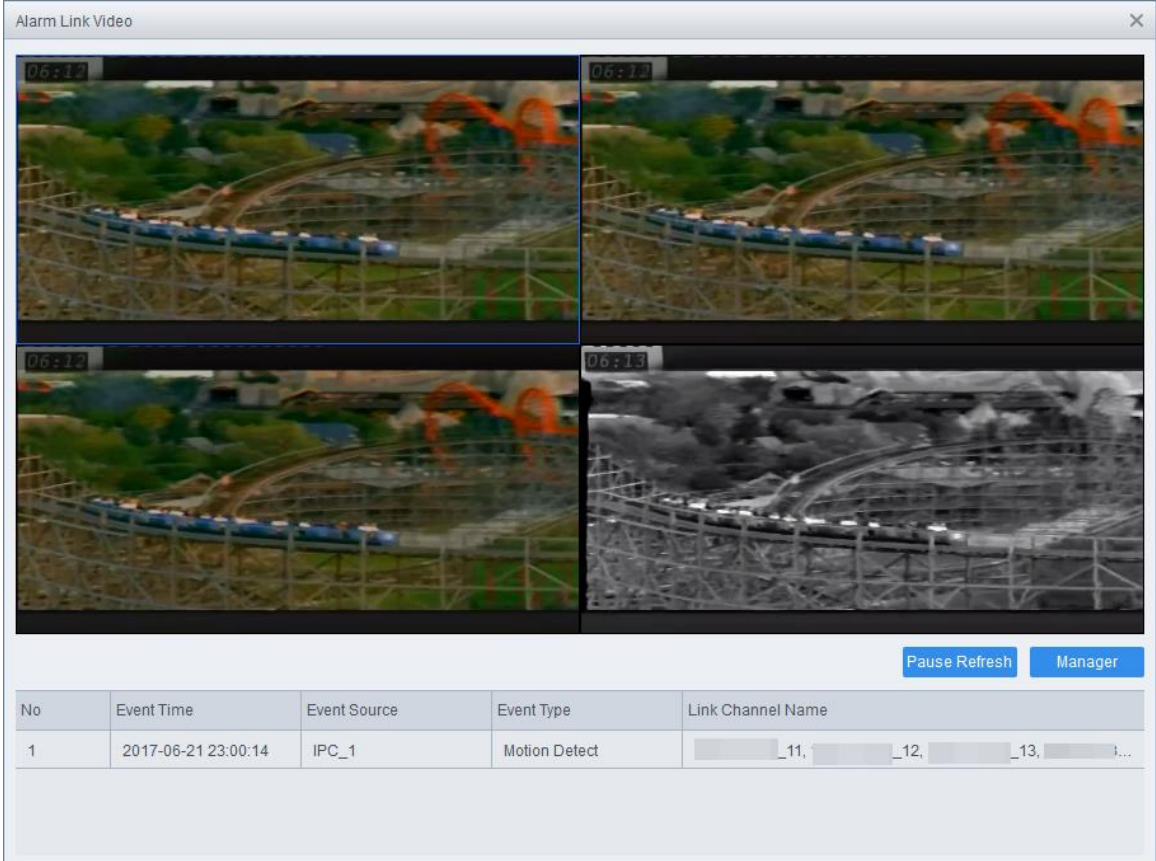
- Click  to play real-time video. See Figure 4-13.

Figure 4-13 Real-time video



No	Event Time	Event Source	Event Type	Link Channel Name
1	2017-06-21 23:00:14	IPC_1	Motion Detect	_____11, _____12, _____13, _____1...


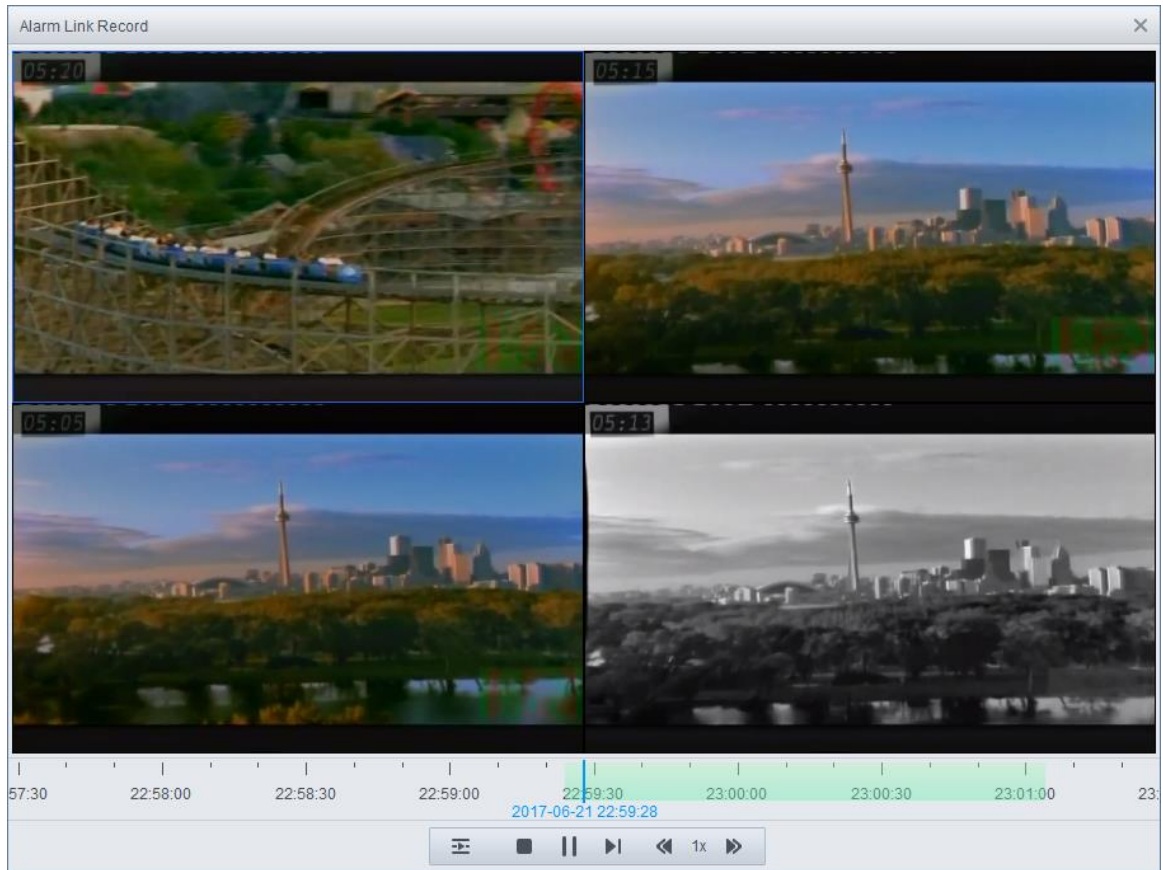
- Click  to play back video record linked to alarm event. See Figure 4-14. Alarm events that have been processed are displayed in the **Processed** tab.



Figure 4-14 Play back video record



**Step 4** Click **Event** at the lower left side, and then select **Parking Timeout** from **Alarm Type**.

**Step 5** Set the time period, and then click **Search**.

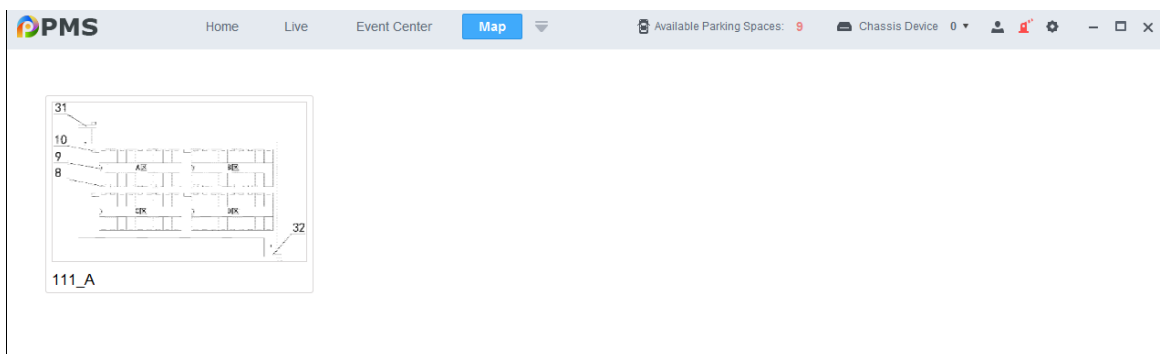
You can view information such as the entry time, parking duration, plate number, and vehicle owner, process the alarm, and view the map.

## 4.2.6 Map

**Step 1** Click , and then select **Map** from the list.

The interface of bound map is displayed. See Figure 4-15.

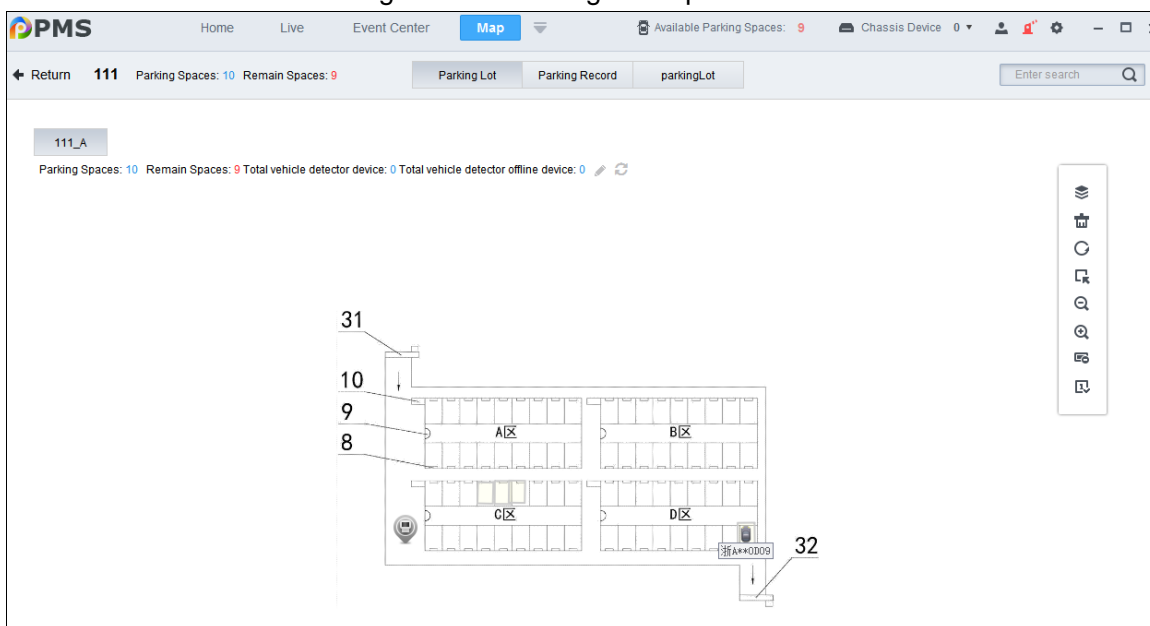
Figure 4-15 Map



**Step 2** Click a map, and the interface shown in Figure 4-16 is displayed.



Figure 4-16 Parking lot map



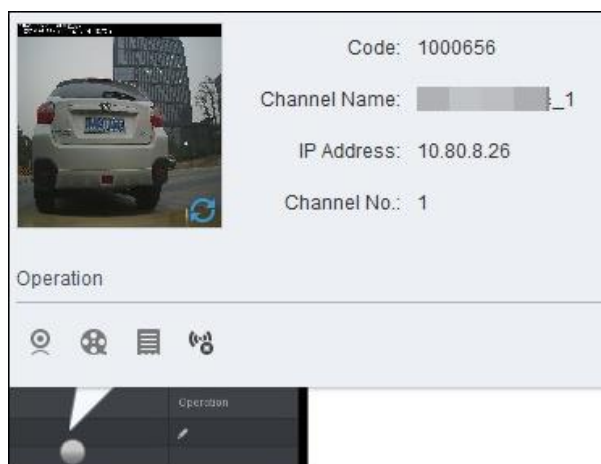
- View parking lot information.
  - 1) Click the **Parking Lot** tab, and then you can view the parking lot name, total and remaining parking spaces. For icon description, see Table 4-4.

Table 4-4 Map icon description

Icon	Description	Icon	Description
	Layer		Zoom out
	Clear traces on the map		Zoom in
	Refresh		Click it to display on the map the plate number recognized by the parking space detector
	Select		Click it to display on the map the parking space available

- 2) Click a parking space detector on the map, and the detector information is displayed. See Figure 4-18.

Figure 4-17 Parking space detector information



- ◇ Click to view real-time video.






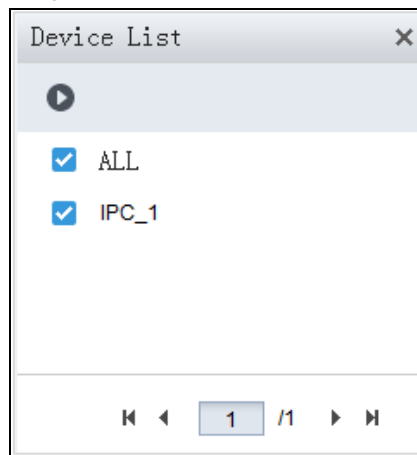
- ◇ Click  to view video playback.
  - ◇ Click  to view snapshots.
  - ◇ Click  to enable parking space detector. Click , then the detector will be disabled.
- 3) Click device channel on the map, and the channel name and IP address are displayed.
  - 4) Click , select online devices, and then **Device List** interface is displayed. See Figure 4-18.

Figure 4-18 Device list




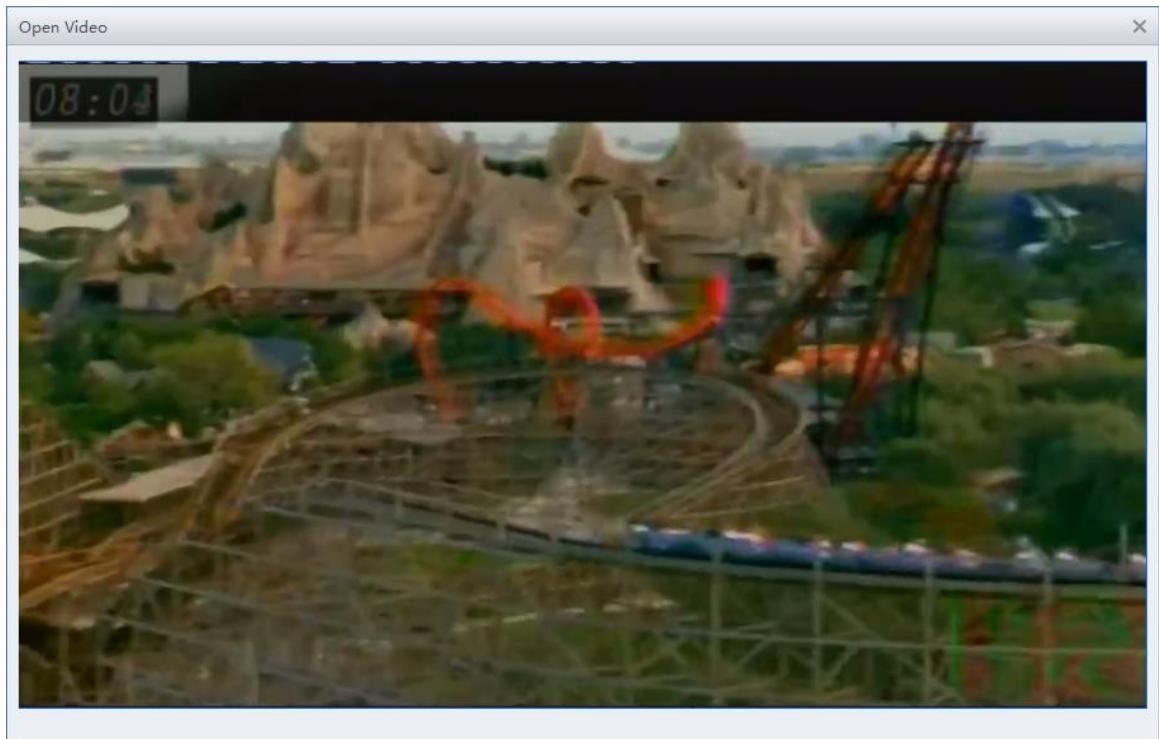
- 5) Click  to play real-time video. See Figure 4-19.

Figure 4-19 Play real-time video



- View parking information.
- 1) Click the **Parking Record** tab.

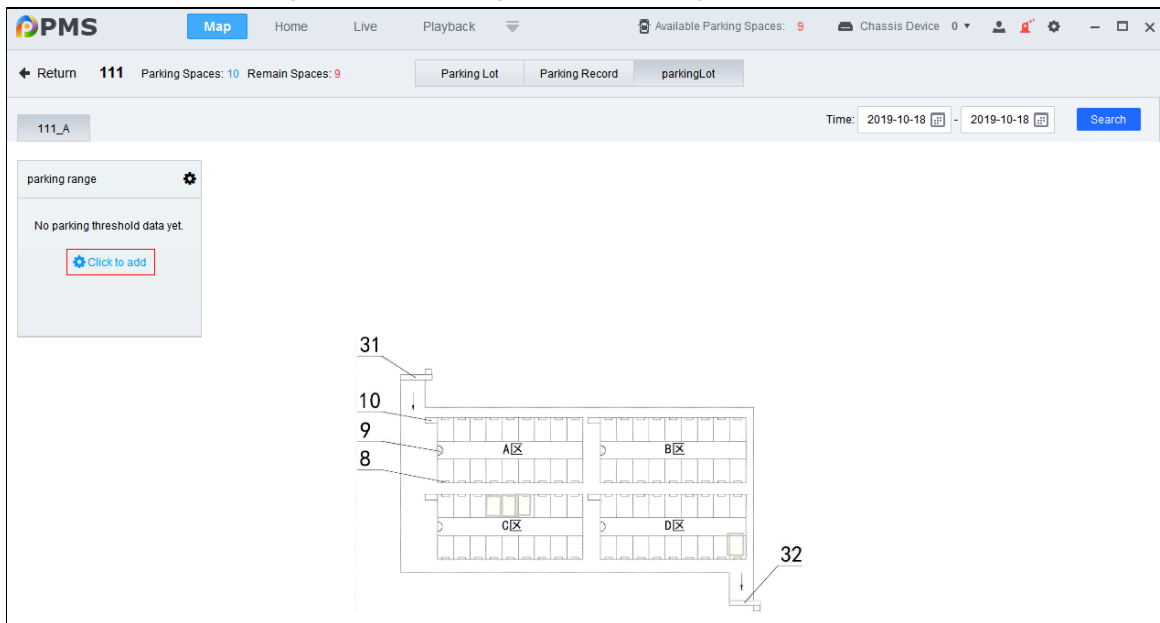
- 2) Set time period, enter plate number or parking space, and then click **Search**. The interface shown in Figure 4-20 is displayed.

Figure 4-20 Parking record

Entry Picture	Exit Picture	Plate No.	Entry Time	Exit Time	Parking	Operation
			2018-07-22 07:02:54	2018-07-12 13:12:33	A_1_1	
			2018-07-22 06:24:28	2018-07-22 09:19:41	A_1_2	
		-	2018-07-22 06:28:30	2018-07-22 06:29:14	A_1_1	
		-	2018-07-22 06:24:19	2018-07-22 06:24:24	A_1_2	

- 3) Click the picture of vehicle plate to view the large picture. You can also view information such as parking duration, parking space number, and vehicle color.
- 4) View video.
  - ◇ Click to view videos of vehicles entering the parking space.
  - ◇ Click to view videos of vehicles leaving the parking space.
  - ◇ Click to view videos of vehicles entering and leaving the parking space.
- View parking heatmap.
- 1) Click the **parkingLot** tab. The interface shown in Figure 4-21 is displayed.

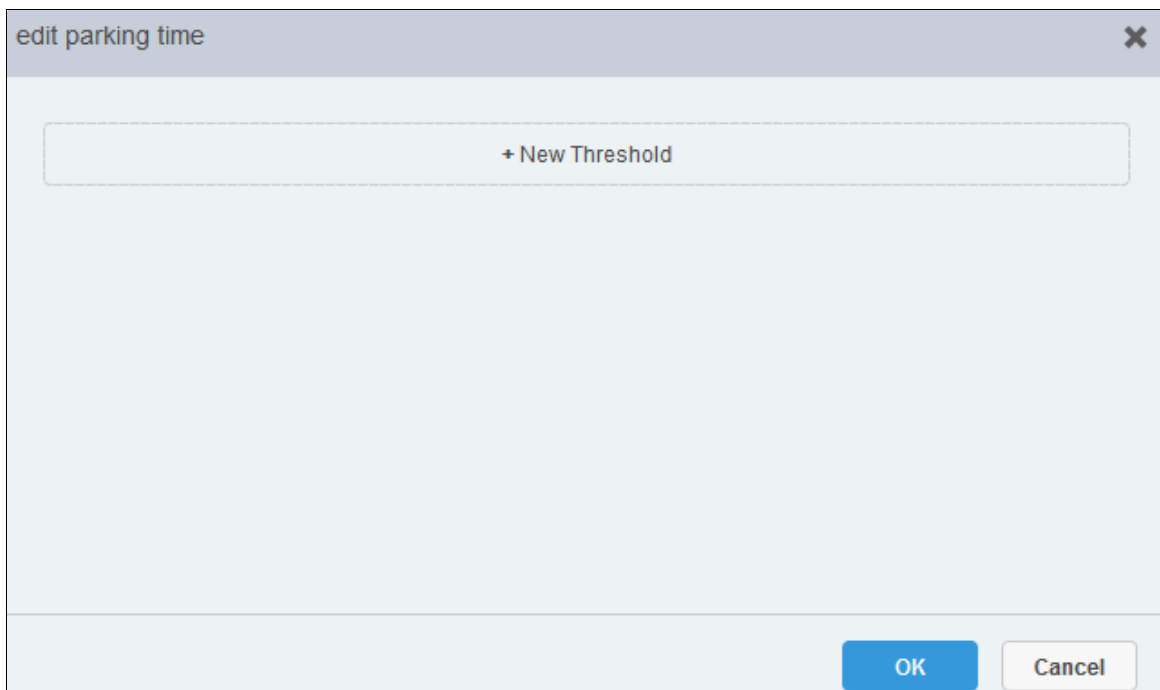
Figure 4-21 Parking heatmap configuration



- 2) Click [Click to add](#).

The **edit parking time** interface is displayed. See Figure 4-22.

Figure 4-22 Edit parking time



- 3) Click [+ New Threshold](#), and then you can configure different colors for different parking durations. See Figure 4-23.

Figure 4-23 Configure parking duration

Threshold	Color	Operator	Value	Unit	Duration Range	Action
threshold1	gray	less than...	1	Ho...	0 ~ 1Hour(s)	🗑️
threshold2	green	less than...	2	Ho...	1Hour(s) ~ 2Hour(s)	🗑️
threshold3	blue	less than...	3	Ho...	2Hour(s) ~ 3Hour(s)	🗑️
threshold4	gray	less than...	*	Ho...	3Hour(s) ~ Hour(s)	🗑️

+ New Threshold

OK Cancel

- 4) Click **OK** to save the configurations.  
You can view the parking heatmap for different parking durations.

## 4.2.7 Search

### 4.2.7.1 Vehicles in the Parking Lot

You can search vehicles in the parking lot according to vehicle plate number and the time that the vehicle enters the parking lot. You can also export the search results in Excel. For vehicle that has left the parking lot but its information is still displayed on the interface, click **Force to Exit**, and the vehicle information will be cleared.

Click , select **Search** > . The interface shown in Figure 4-24 is displayed.

Figure 4-24 Vehicles in the parking lot

<input type="checkbox"/>	Entry Picture	Entry Plate	Owner	Parking Lot	Entrance Channel	Entry Time	Type	Entry Method	Vehicle Right	Operation
<input type="checkbox"/>		苏A5046F	xiaolangh	dahua	kakou1_1	2018-12-03 09:10:53	No Group	Auto Recognition	Guest WhiteList Blacklist	
<input type="checkbox"/>		苏A5046F	xiaolangh	Isl	Itc01_1	2018-12-02 14:51:57	No Group	Auto Recognition	Guest WhiteList Blacklist	
<input type="checkbox"/>		苏A44	-	youmai	-	2018-11-30 11:37:45	Guest	Backup Record	Guest WhiteList Blacklist	
<input type="checkbox"/>		苏A02110	ZHANSAN	youmai	ITC-IN_1	2018-11-29 10:52:24	No Group	Auto Recognition	Guest WhiteList Blacklist	

Total 4 record(s).

- Click the vehicle picture to view a large picture.
- Click , or select multiple vehicles, and then click Force to Exit to clear the vehicle information from the system.

#### 4.2.7.2 Records of Passing Vehicles

You can search the information of vehicles that enter or leave the parking lot, such as entrance channel, exit channel, plate number, and time. Click , select **Search** > . The interface shown in Figure 4-25 is displayed.

Figure 4-25 Records of passing vehicles

Entry Picture	Exit Picture	Entry Plate	Exit Plate	Parking Lot	Entrance Channel	Exit Channel	Entry Time	Exit Time	Vehicle Type
		京A12345	-	dahua	kakou11_1	-	2018-12-03 09:10:53	-	No Group

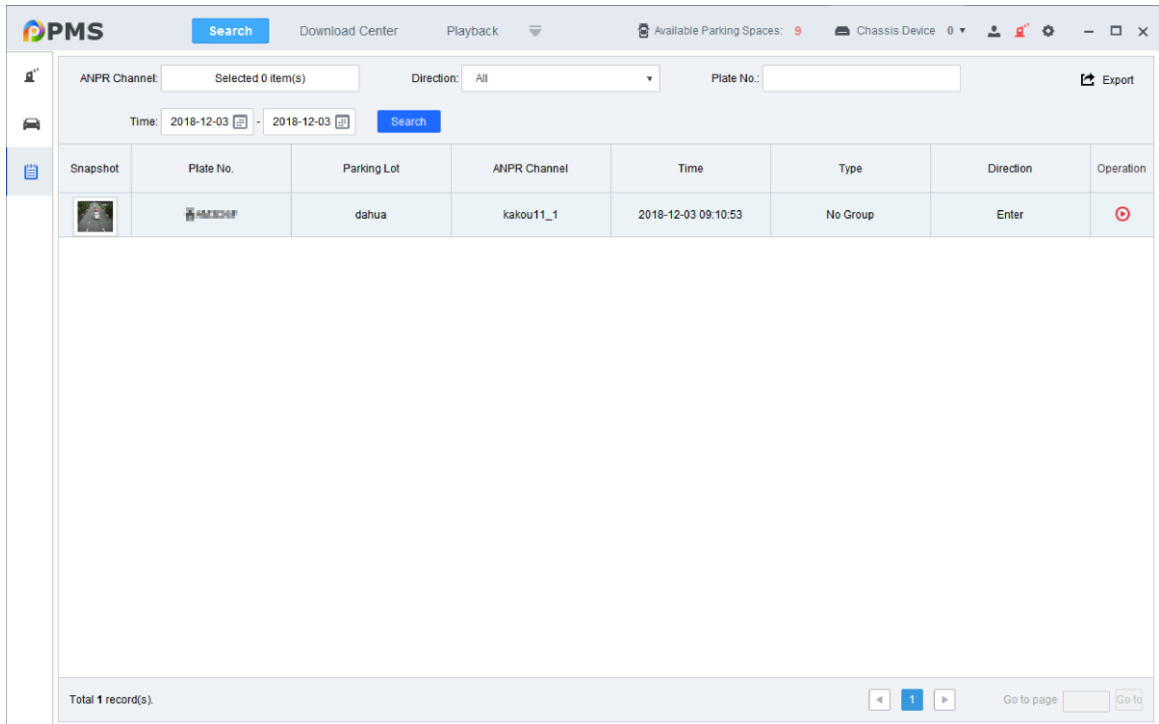
- Click the vehicle snapshot to view the large picture.
- Click to view video image of linked video channel.

### 4.2.7.3 Snapshot Record

You can search the snapshots captured by ANPR channel, and also view the information such as plate number, parking lot, and time that a vehicle enter or leaves.

Click , select **Search** > . The interface shown in Figure 4-26 is displayed.

Figure 4-26 Snapshot record



## 4.2.8 Chassis Check

You can view the snapshots of chassis and vehicle taken by ANPR channel, and also the vehicle plate information.

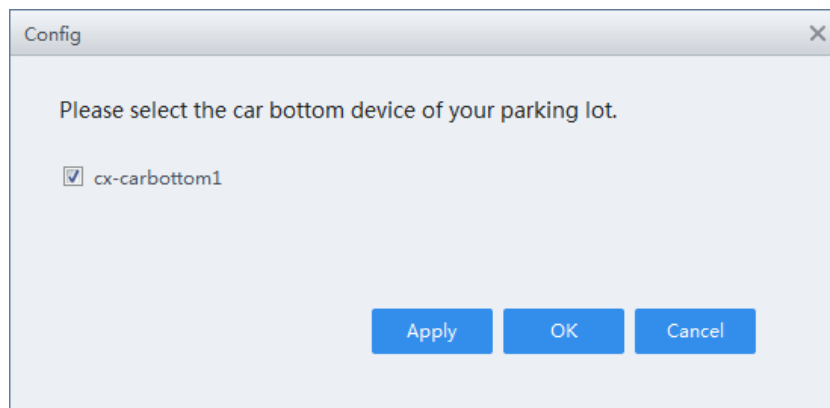
**Step 1** Click , and then select the **Chassis Check** tab.

The **Chassis Check** interface is displayed.

**Step 2** Click next to **Car Bottom Device** at the upper-right side.

The **Config** interface is displayed. See Figure 4-27.

Figure 4-27 Configuration

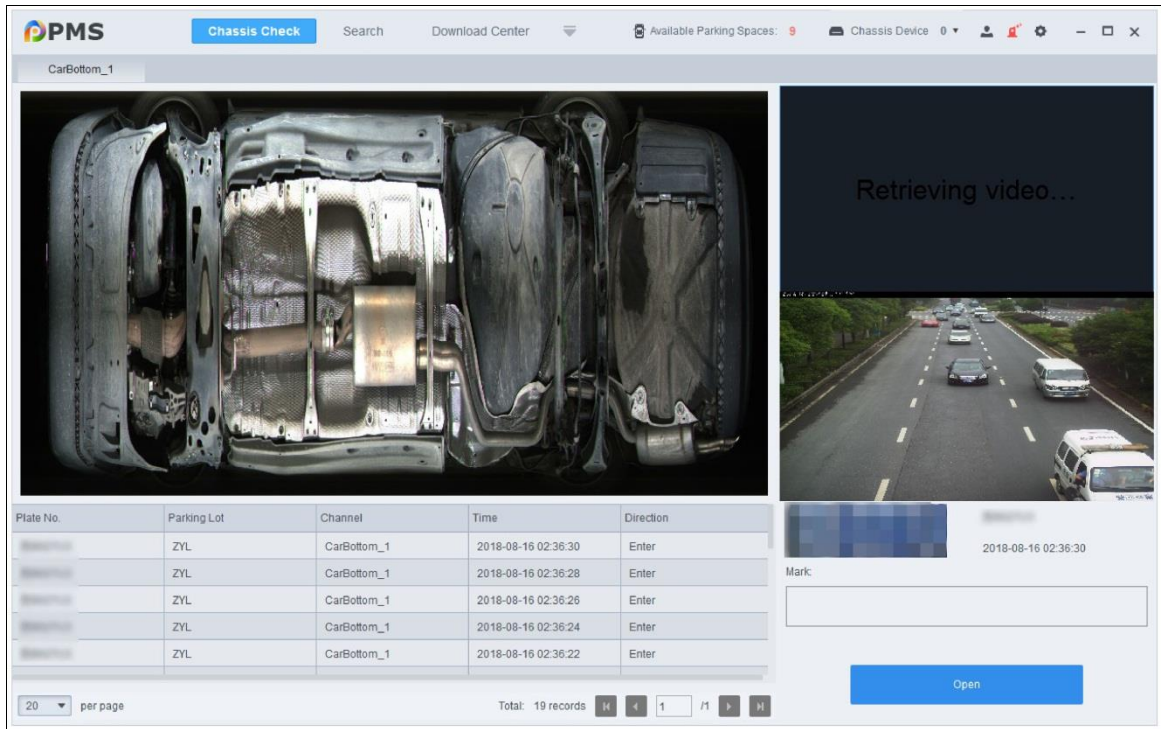


**Step 3** Select the device for checking the chassis of vehicle, and then click **OK**.

The system starts detecting the dangerous item (if any), and displays the chassis and vehicle snapshots, and plate information on the screen. See Figure 4-28.



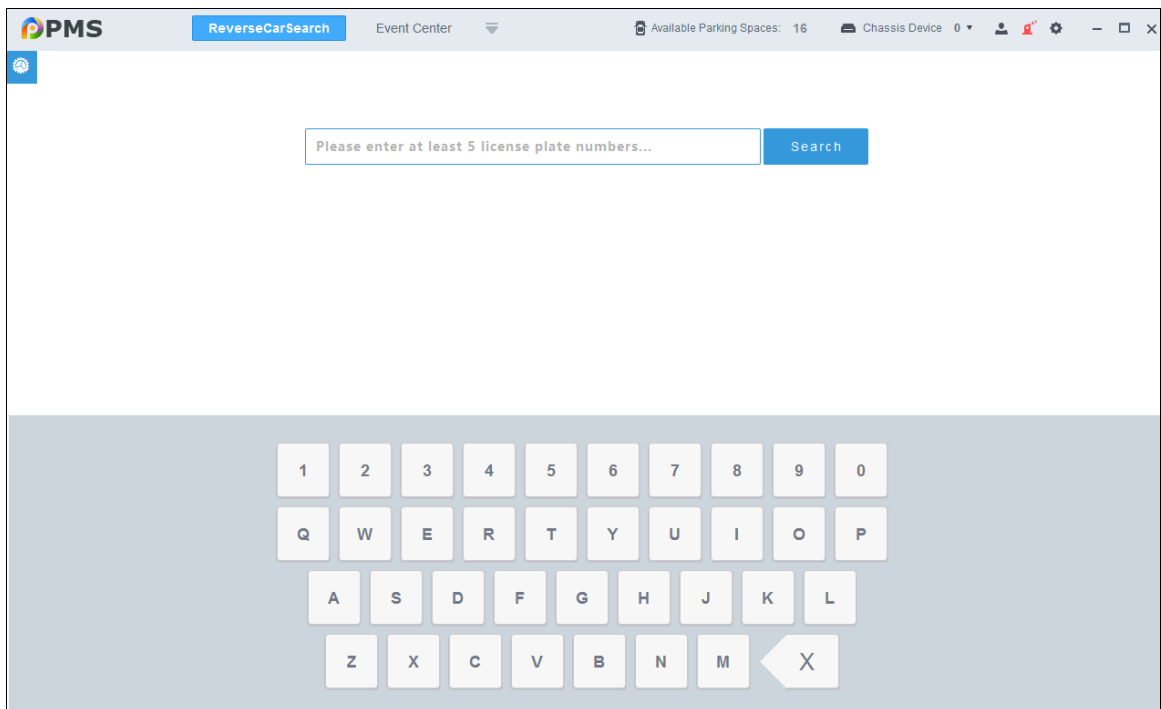
Figure 4-28 Chassis check interface



## 4.2.9 Reverse Vehicle Search

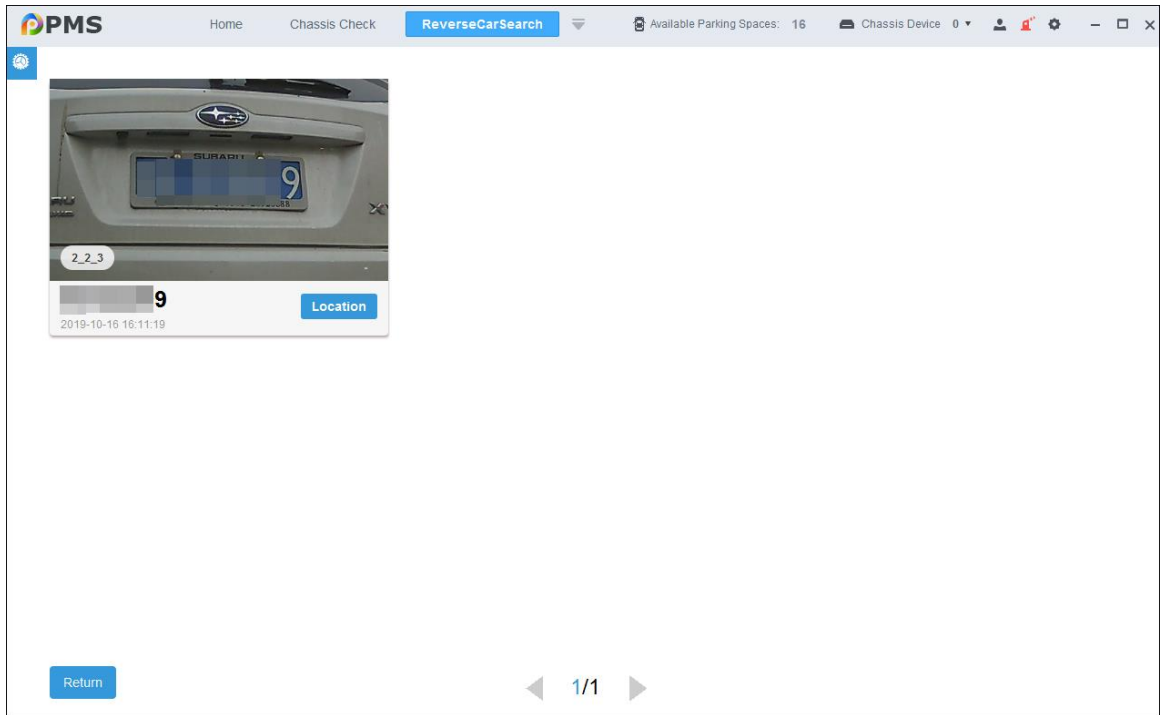
You can search the route of finding your vehicle with all-in-one reverse vehicle search device or by entering your plate number. See Figure 4-29. You need to search your parking record first.

Figure 4-29 Search parking record



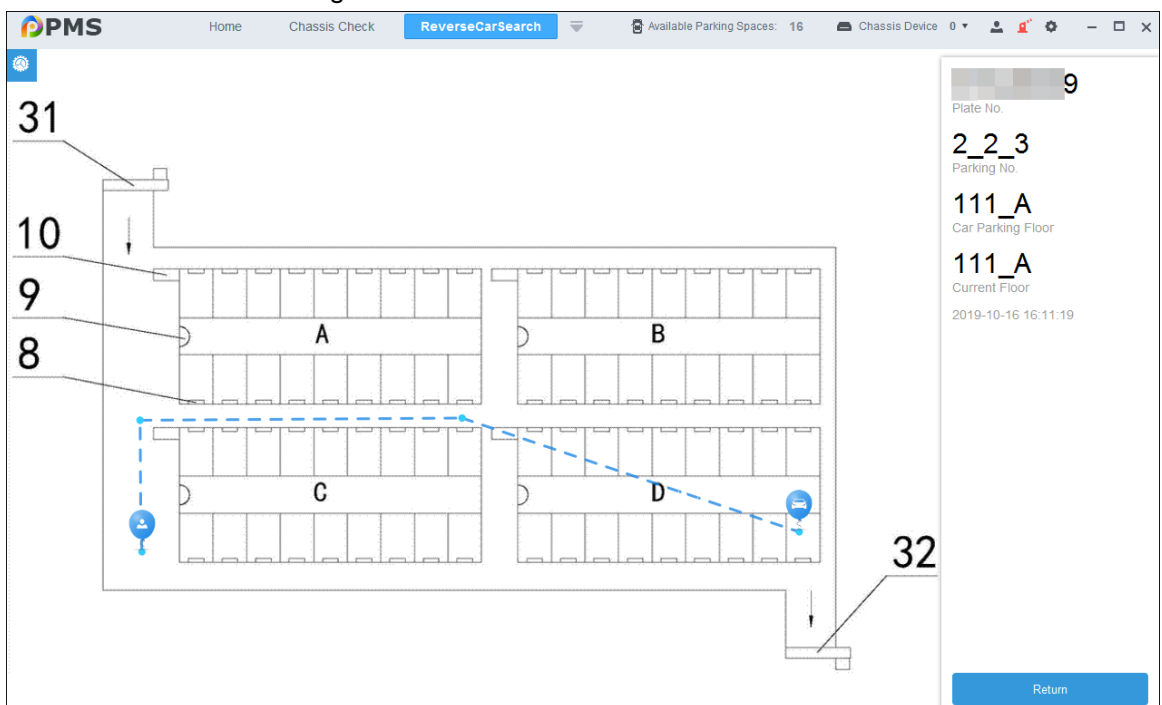
- Click **Search** to search for the parking records. See Figure 4-30.

Figure 4-30 Reverse vehicle search



- Click **Vehicle Search** to view the route of finding your vehicle. See Figure 4-31.

Figure 4-31 Reverse vehicle search



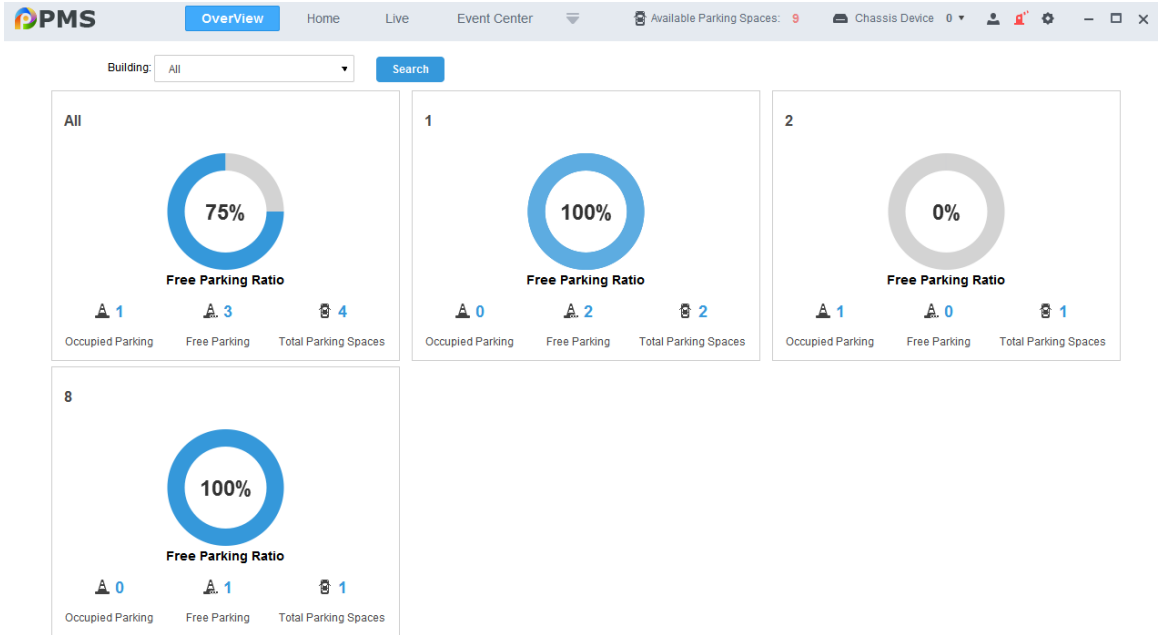
## 4.2.10 Parking Lot Overview

You can view the parking details of each parking lot. See Figure 4-32.



System user and users created by system have the permission of viewing parking lot overview.

Figure 4-32 Parking lot overview



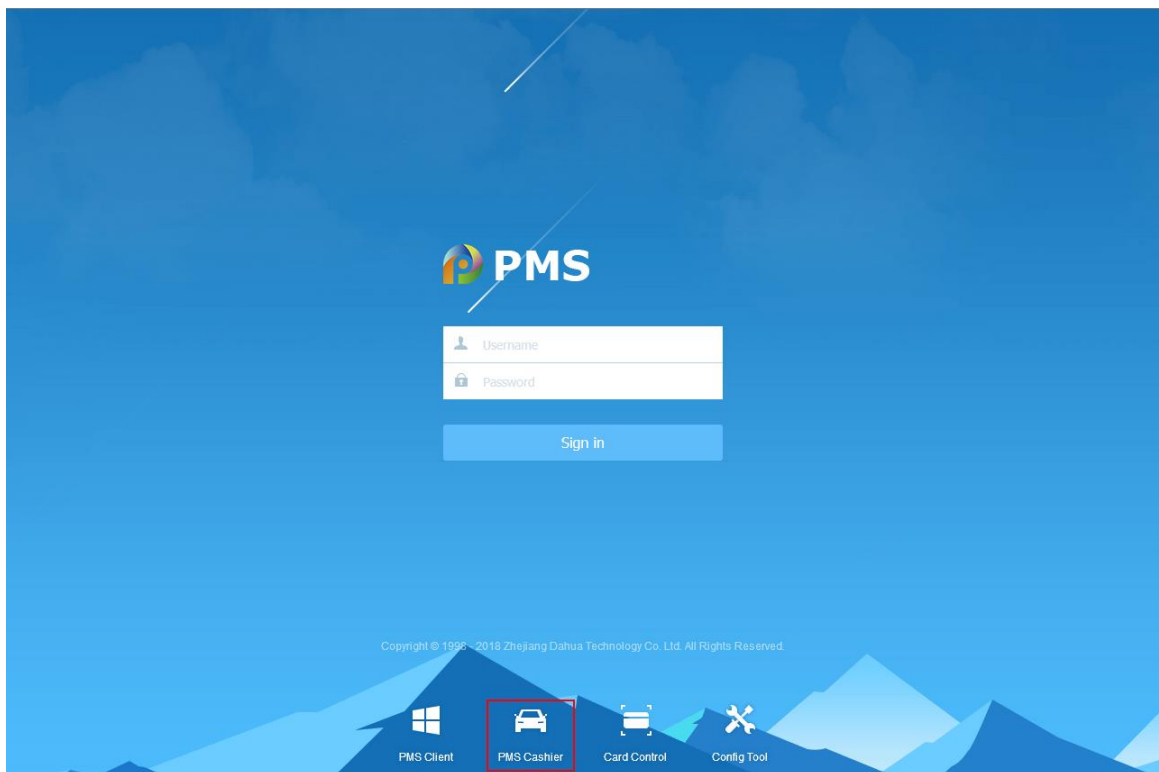
# 5 PMS Cashier

## 5.1 Install and Uninstall

### 5.1.1 Installing Client

You can install PMS Cashier client on the web interface of PMS. See Figure 5-1.

Figure 5-1 Web login



**Step 1** Click  to download PMS Cashier client.

A dialog box that prompts file download is displayed.

**Step 2** Click **Save**, and download and save the client to your PC.

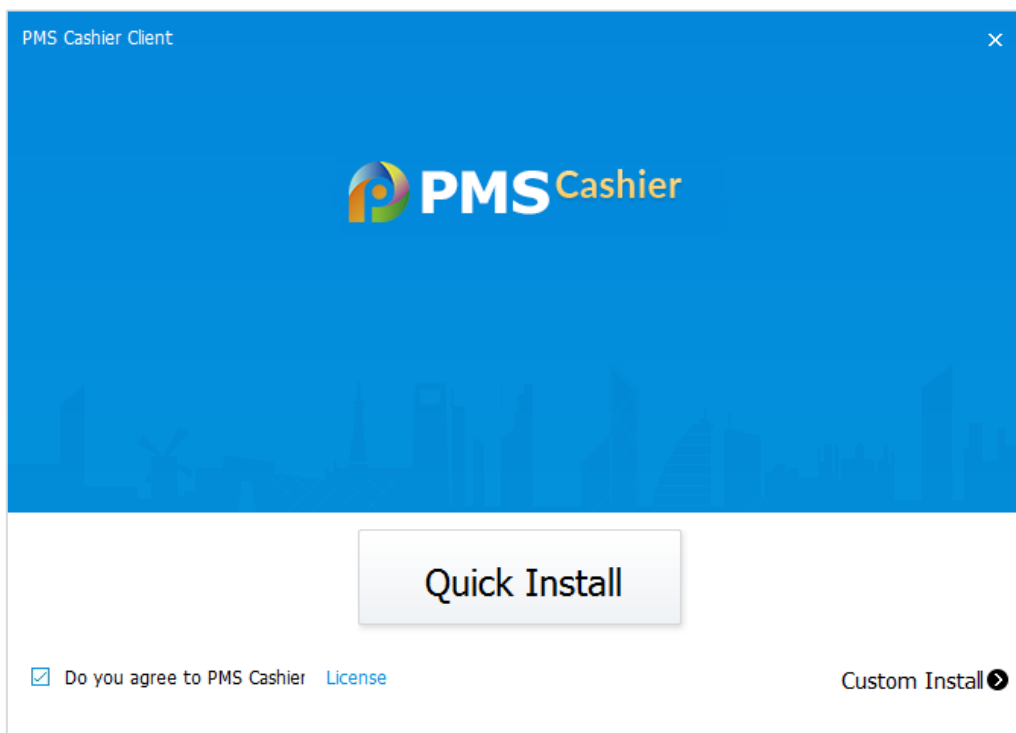
**Step 3** Double-click "General\_PMS\_Professional\_Control\_Cashier \_Eng\_V1.01.000.exe."

The Quick Install interface is displayed. See Figure 5-2.



The name of installation package might vary depending on the software version, and the actual package shall prevail.

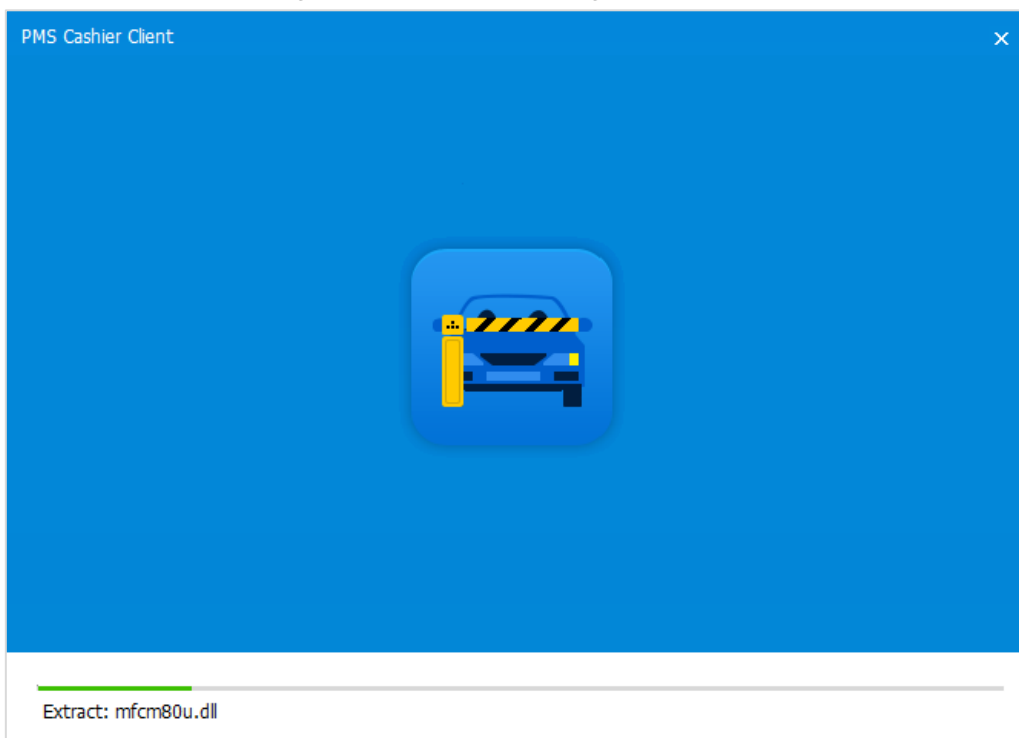
Figure 5-2 Quick install



**Step 4** Click **License** to read the agreement. After reading and understanding the agreement, select the check box before **Do you agree to PMS License**, and click **Quick Install**. You can also click **Custom Install** to select the installation path before installation starts.

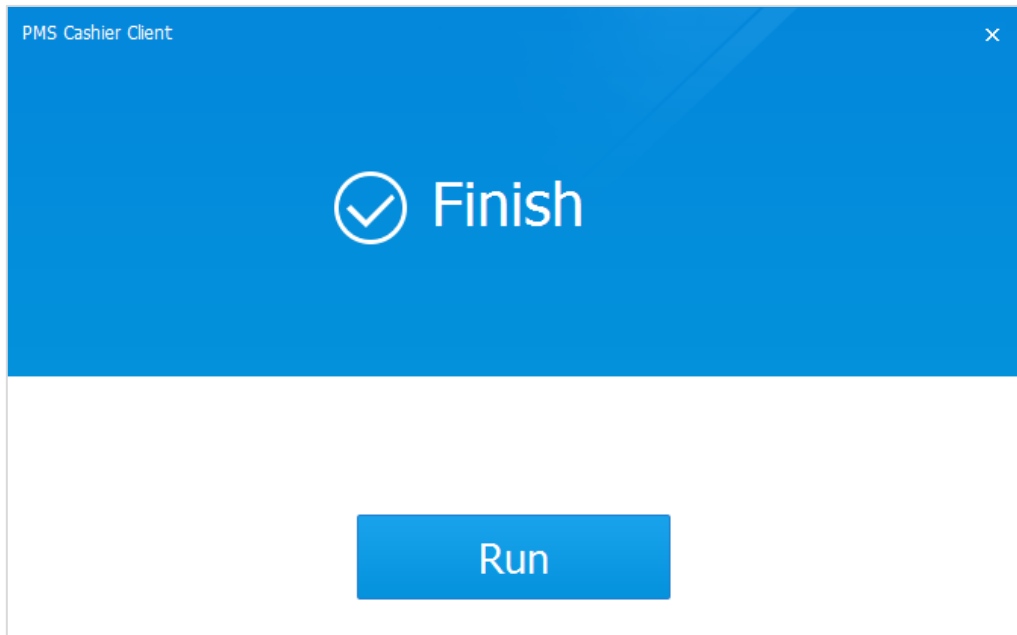
The installation progress interface is displayed. See Figure 5-3.

Figure 5-3 Installation progress



After installation, the interface shown in Figure 5-4 is displayed.

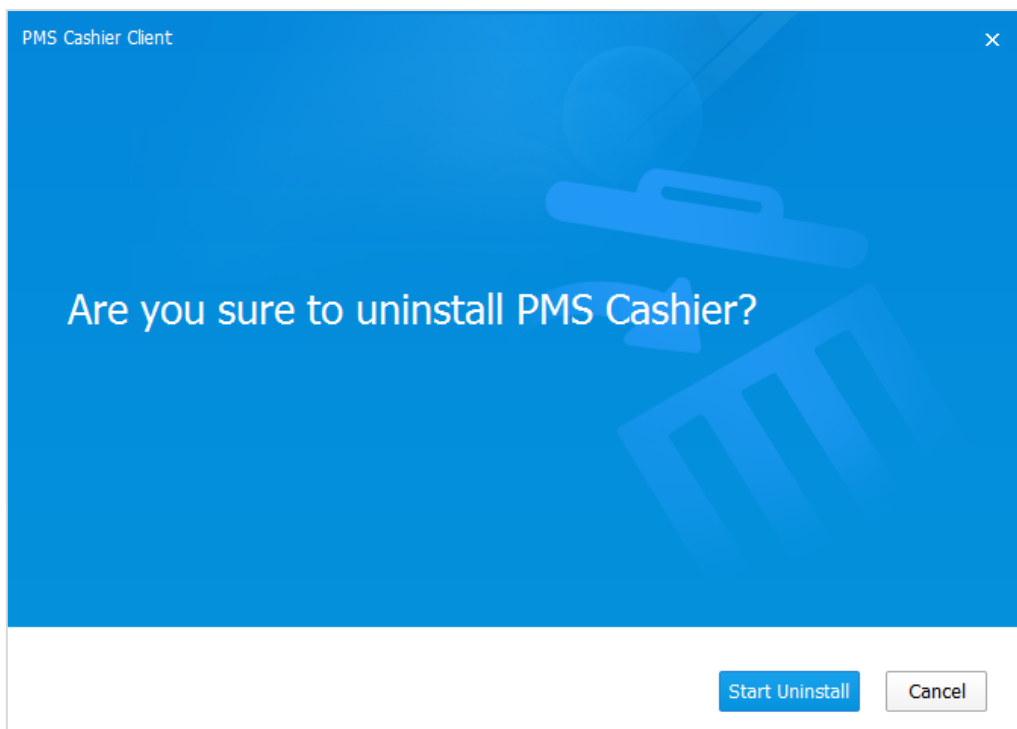
Figure 5-4 Installation completed



## 5.1.2 Uninstalling Client

Click **All Programs** from your PC's start menu to find the PMS Cashier client folder, and then click **Uninstall PMS Cashier Client**. The interface shown in Figure 5-5 is displayed.

Figure 5-5 Uninstall

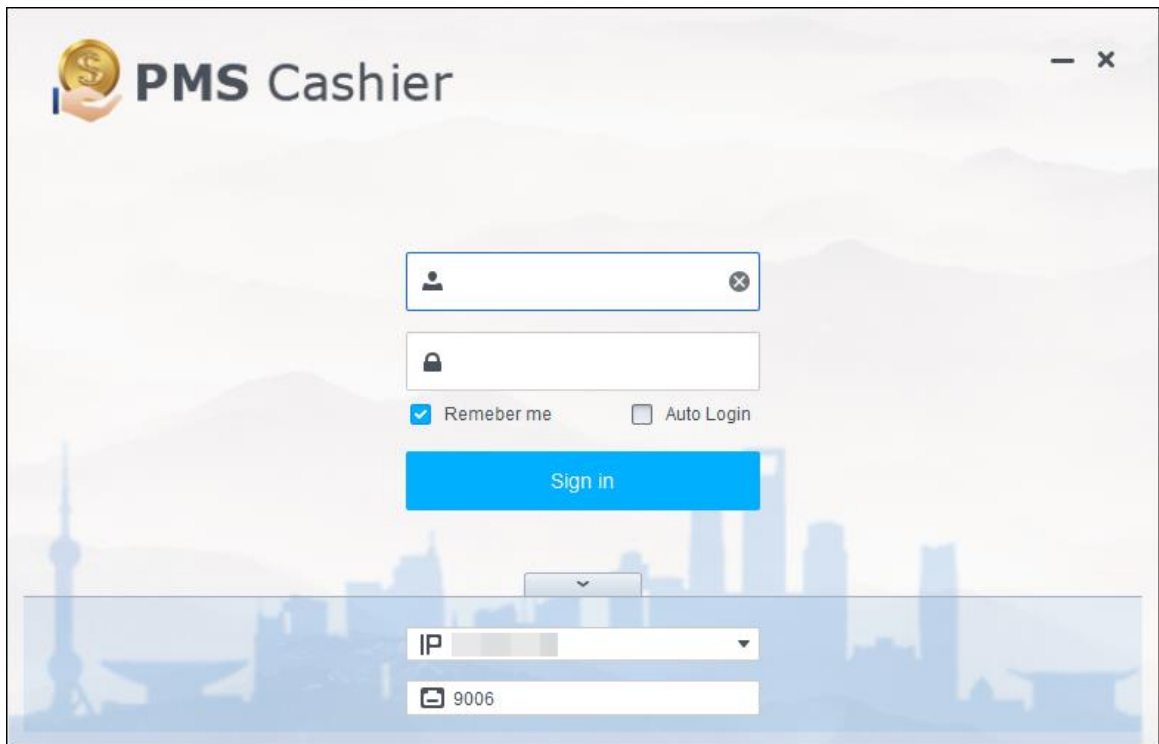


Click **Start Uninstall** to uninstall the PMS Cashier client.


## 5.2 First-time Login

Step 1 Double-click the shortcut of PMS Cashier client on your desktop.  
The **Sign in** interface is displayed. See Figure 5-6.

Figure 5-6 Log in to PMS Cashier client



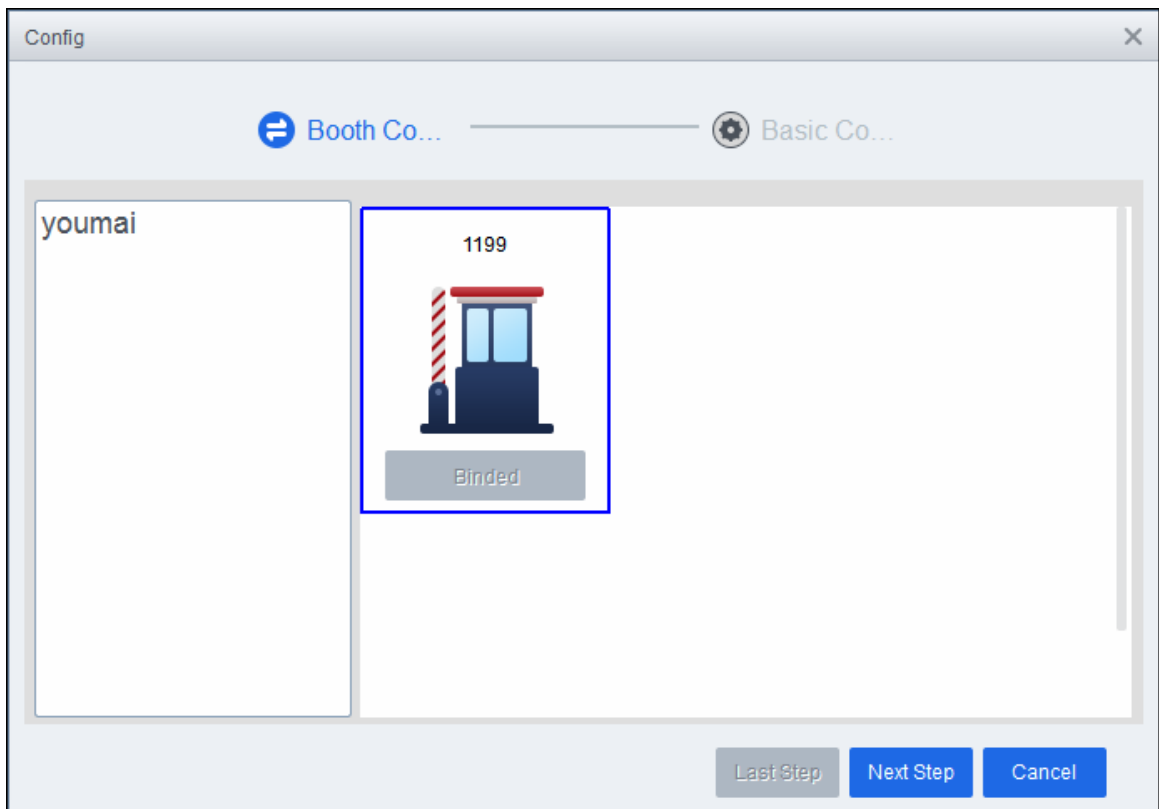
**Step 2** Enter the username and password.

**Step 3** Click , and enter the IP address, which is the same as the one for logging in web interface of PMS, and port (9006 by default).

**Step 4** Click **Sign in**.

The **Config** interface is displayed. See Figure 5-7.

Figure 5-7 Bind guard booth



**Step 5** Configure parameters



You can also click  at the upper-right side to configure the parameters.

- Booth charge configuration
- 1) Select the booth, and click **Bind** to bind it, then click **Next Step**.  
The **Basic Config** interface is displayed. See Figure 5-8 and Table 5-1.


Figure 5-8 Basic configuration

Table 5-1 Basic configuration description

Parameter	Description
Language	Set the language of the client.
POS Title	Set the title of POS text, generally, the name of the parking lot.
Display Picture of Autopass Car	Set whether display snapshots on the client interface when charging parking fees at <b>Entry</b> or <b>Exit</b> .
Stream Type	Select the stream of the charging interface. Mainstream provides smoother video image but requires higher bandwidth. If no sufficient bandwidth, select substream.
VTO Ring Tone	Select <b>Open</b> or <b>Close</b> to enable or disable ring tone when receiving call from VTO (outdoor intercom).

- 2) Click **Confirm**.
  - Central charge  
Configure the parameters. See Figure 5-8 and Table 5-1. After configuration, click **Confirm** to finish basic configuration.



Click  at the upper-right side to view the user's manual.



## 5.3 Charge Rule Management

### 5.3.1 Central Charge

Search for the vehicle plate on the **Center Charge** interface, and then confirm whether charge the vehicle according to the parking conditions of the vehicle.

Step 1 Log in to PMS Cashier client.

Step 2 Enter the plate number, and then click **Search**.

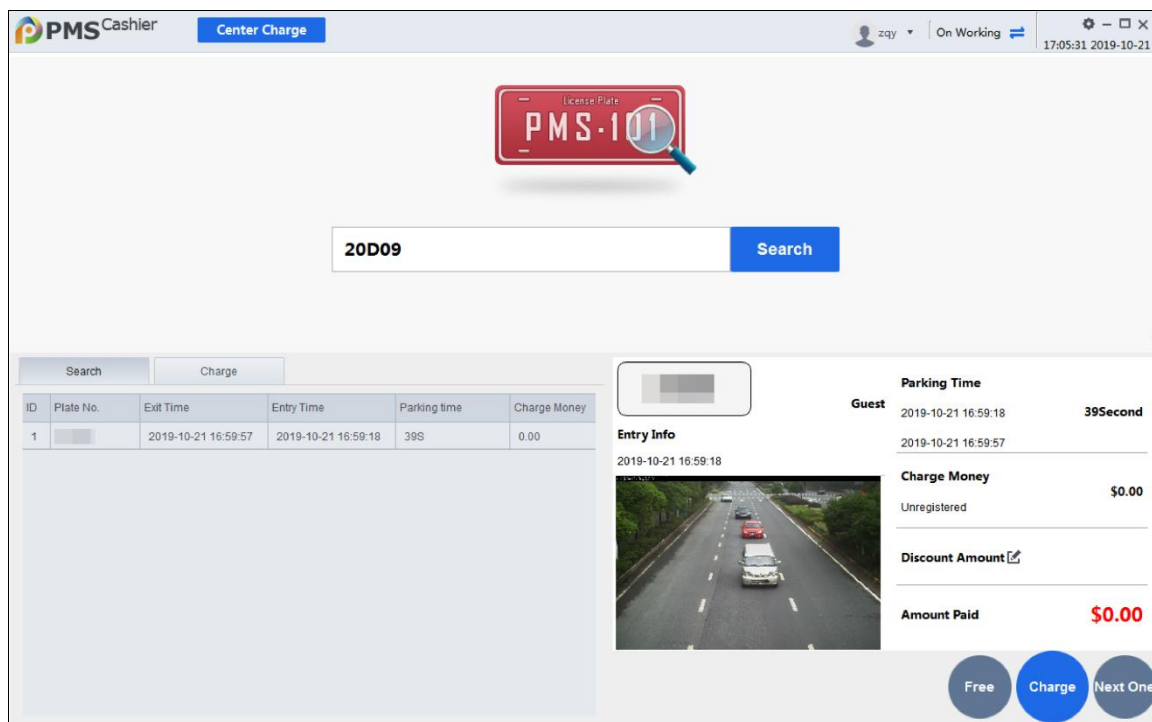
The parking and charge details of the vehicle is displayed. See Figure 5-10.

Step 3 Confirm the parking fee.

- If parking fee needs to be paid, click **Charge** to take the parking fee.
- If no parking fee needs to be paid, click **Free**.

After clicking Charge to take parking fee, or clicking Free, no parking fee will be charged within the defined parking time, and when the vehicle comes to the guard booth, the barrier will automatically open.

Figure 5-9 Center charge



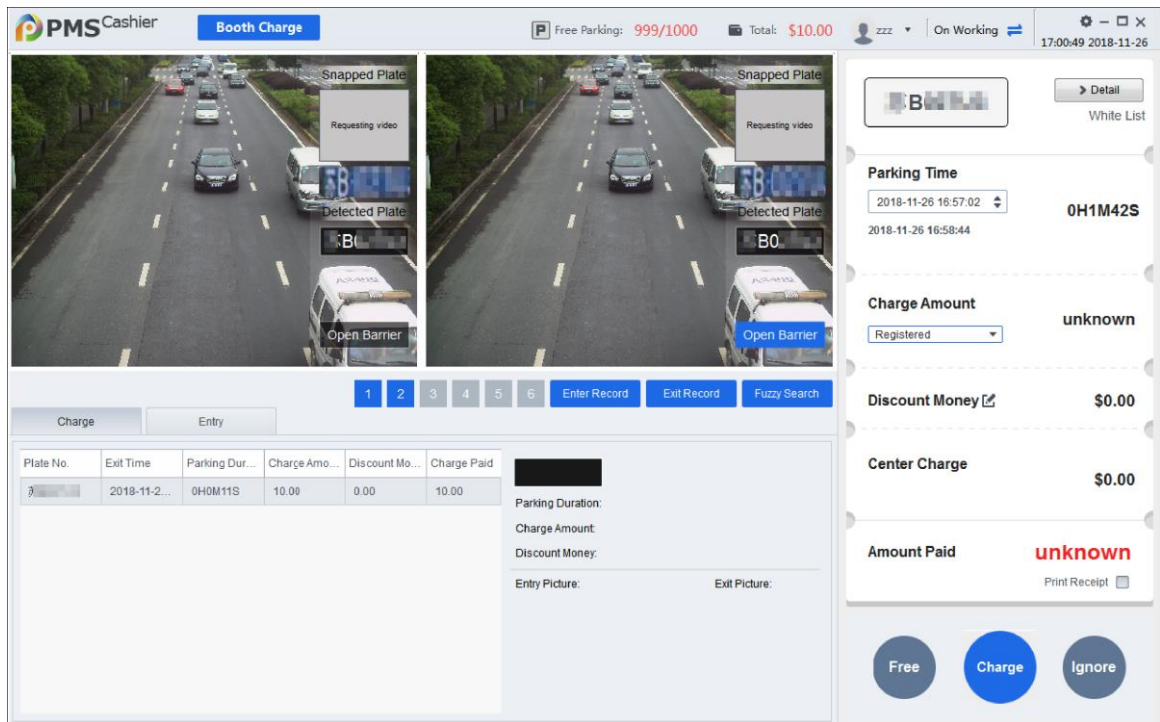
### 5.3.2 Booth Charge

On the **Booth Charge** interface, you can open the barrier, view enter record and exit record of vehicles, do fuzzy search, and process the parking fee.

Step 1 Log in to PMS Cashier client.

The entrance/exit and the parking details are displayed. See Figure 5-10.

Figure 5-10 Booth charge



**Step 2** Click numbers of 1–6 below the video window to select corresponding video channel.

**Step 3** More operations.

- Open barrier.

If the barrier does not open when vehicle passes the entrance/exit, click **Open Barrier**, and the barrier opens.

- View charge details.

Click the **Charge** tab, and the details of parking processing are displayed, which include the snapshots when the vehicle enters/leaves, plate number, time, parking duration, and charge amount.

- Real-time charge

When the vehicle leaves, the charge details will be displayed on the right side. You can click **Free**, **Charge**, or **Ignore** before opening the barrier.

- ◇ Free: No parking fee is charged.
- ◇ Charge: Charge parking fee according to the charge information on the interface.
- ◇ Ignore: Ignore this parking record

After selecting the charge rule, the client will send the data to the system for record. You can click '🔗' next to **Discount Money** to select the discount amount, which will be deducted from the parking fee.

- Entry

Click the **Entry** tab, and the details of vehicles that enter the parking lot are displayed.

- Entry/Exit record.

Click **Entry Record** or **Exit Record**, and then manually enter vehicle entry or exit information.

- Exit time correction.

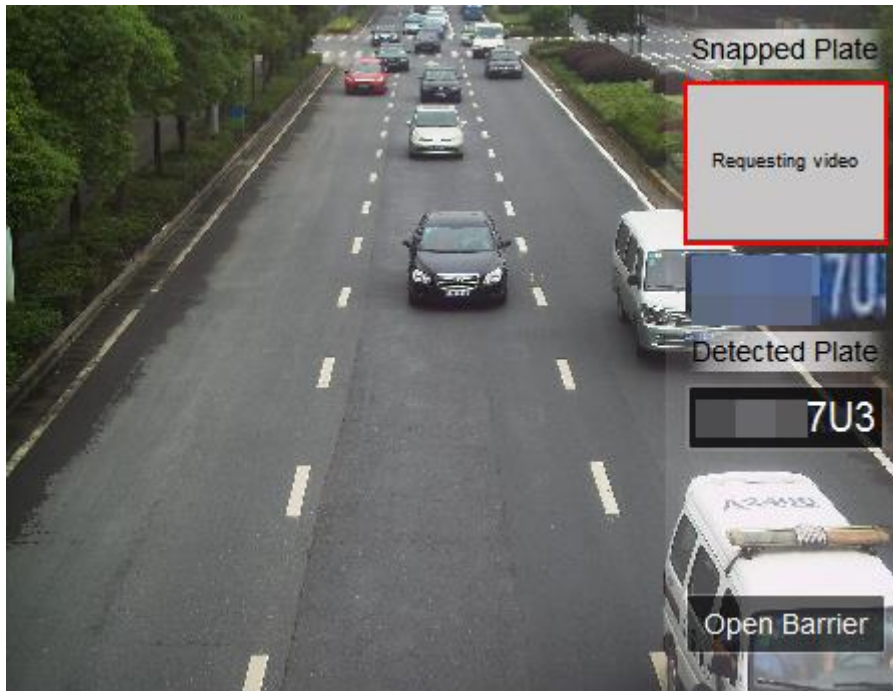
If the license plate is not clearly recognized when the vehicle leaves the parking lot, use exit time correction function to manually modify the captured plate to the target plate.

- Fuzzy search.

If no entry record of a vehicle is found, click **Fuzzy Search** to search for the vehicle record.


- Double-click the small window (see Figure 5-11), and you can view the corresponding video or snapshot in the larger window.

Figure 5-11 View video and snapshot



## 5.4 Shift Change

When the parking fee collector gets off work or changes shifts, he/she needs to complete the off-duty handover on the client.

Step 1 Click  on the upper-right side.

The **Hand Over** interface is displayed. See Figure 5-12.

Figure 5-12 Handover

Charge Collector:	dsx
Work Time:	2017-12-20 01:09:58
In-vehicle Quantity:	0
Out-vehicle Quantity:	3
Trip Charge:	<input type="text" value="0.00"/>
Discount Amount:	<input type="text" value="0.00"/>
Total Charge:	<input type="text" value="0.00"/>

Print Receipt

Step 2 Click **Hand Over**.

The system automatically logs out, and displays the **Sign in** interface.

## 6.1 Service Installation and Deployment

### 1. Requirements of PC for installing PMS server

Table 6-1 PC requirement

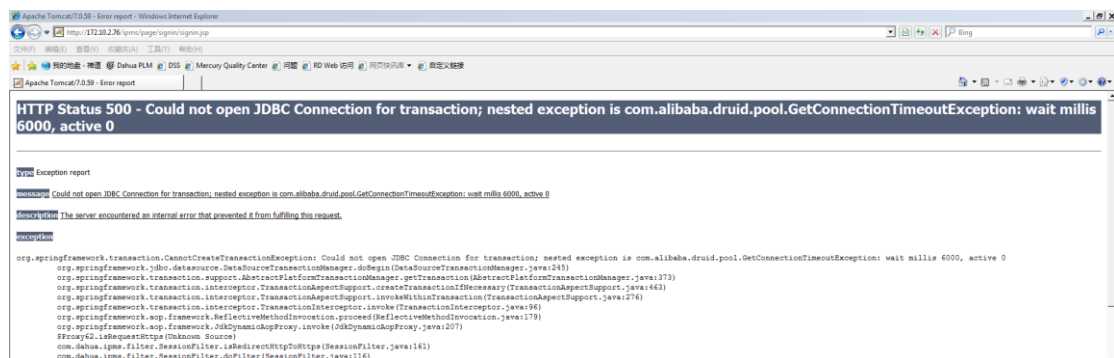
Parameter	Description
Processor	Core i3-4160
Memory	4GB
HDD	500G
Operating system	Microsoft Windows 7/ Windows 8.1/Windows 10 (64 bit) (recommended)
Browser	IE9 or newer, Chrome, Firefox
Resolution	Recommended resolution: 1280 × 1024 Hardware supports DirectX9.0c or newer

### 2. How long does it take to install PMS

Generally, it takes 5–10 minutes, depending on the performance of PC.

### 3. After installation, I cannot access PMS with server IP address, and the system displays the interface shown in Figure 6-1

Figure 6-1 Error



Check whether PMS server is enabled. If yes and PMS still cannot be accessed, uninstall the program, and then install it again.

### 4. I still cannot access PMS after reinstalling the program

Restart your PC, disable antivirus program such as McAfee, and install the program again.

### 5. It fails to uninstall the program on Windows 10 system

Stop the uninstall progress, and then restart the uninstall progress.

### 6. Firewall configurations to make PMS operate normally

Keep the default settings of firewall.

### 7. The page is not fully displayed when accessing the PMS web interface on my laptop

Use laptop of at least 14 inches. If the page still cannot be fully displayed, reduce the aspect ratio of the browser.

### 8. The interface is displayed in Chinese

Set the language of browser as English from **Settings > Advanced > Languages** (here takes Google Chrome for example, and the actual interface shall prevail).

### 9. Extra space exists in the PMS installation directory, which might cause installation failure

Update the old version of installation package to the latest one. No space is allowed in the installation directory.

### 10. How to stop running the PMS progress in the background

Open Windows Task Manager and end the process.

### 11. Where can I view the running status of the distributed server

Log in to PMS web manager, and then select **Basic Config > Server Config > Master/Slave Server**. See Figure 6-2.

Figure 6-2 Server configuration

Code	Name	Type	Status	IP Address	Enabled Status	Master/Slave Server	Operation
6008	CPDG(6008)	CPDG	Online		Enable	Master Server	
7101	MCD_GATE(7...	MCD_GATE	Online		Enable	Master Server	
7201	MCD_LED(72...	MCD_LED	Online		Enable	Master Server	
7301	MCD_DOOR(...	MCD_DOOR	Online		Enable	Master Server	
9008	PK_PCS(9008)	PK_PCS	Online		Enable	Master Server	
9101	PTS(9101)	PTS	Online		Enable	Master Server	
9102	PTS(9102)	PTS	Online		Enable	Slave Server	🔒 ✕

### 12. Do I need to re-apply for the license after uninstalling and then installing the server on the same PC

Generally, you don't need to re-apply for the license. If it fails to import the license, contact our sales people to re-apply for the license.

### 13. It fails to import the backup data from PMS installed on server A to PMS on server B

Check whether the two PMS versions are consistent. Version inconsistency might result in failure of backup and restoring. If the versions are consistent, check whether the number of license devices requested by server B meets the requirements. If it still fails, please contact our technical support.

### 14. Vehicle is captured when it enters a parking lot, but the barrier does not open, and the vehicle information cannot be found in the parking lot

Check whether the vehicle is set as **Whitelist** at **Vehicle Right** from **Parking Lot > Vehicle Manager > Add**. If the vehicle is set as **Blacklist**, the barrier will not open automatically.

## 6.2 PMS Client

### 1. ANPR channel video cannot be viewed on the client

- 1) Check whether you have logged in to the client with system (default) account, which enjoys permissions of all the parking lots.
- 2) If you log in to the client with a new user account, make sure that the parking lots are linked to the user by logging in the web interface, and then selecting from **Basic Config > User Config > Add > Parking Right**.

### 2. I cannot view the real-time records of passing vehicles on the client

On the **Live** interface of client, select **Channels > Pass Records** at the left side.

### 3. The client cannot receive snapshots by the camera, but the web interface of the camera can

You need to enable snapshot function on the network video recorder (NVR) interface by selecting from **Setup > Storage > Schedule > Snapshot**, and then selecting the **IVS** check box.

### 4. No video can be viewed on the Playback interface of the client

- 1) Make sure that the NVR program version is compatible with that of PMS.
- 2) After updating NVR to the compatible version, clear relevant configurations on the local and web interfaces. For first-time configuration, format the hard disk drive (HDD).
- 3) Check whether the time of the device (ANPR camera/NVR) is consistent with the time of PMS. If not, sync the time of device with the time of PC installed with PMS.

### 5. How to set system language


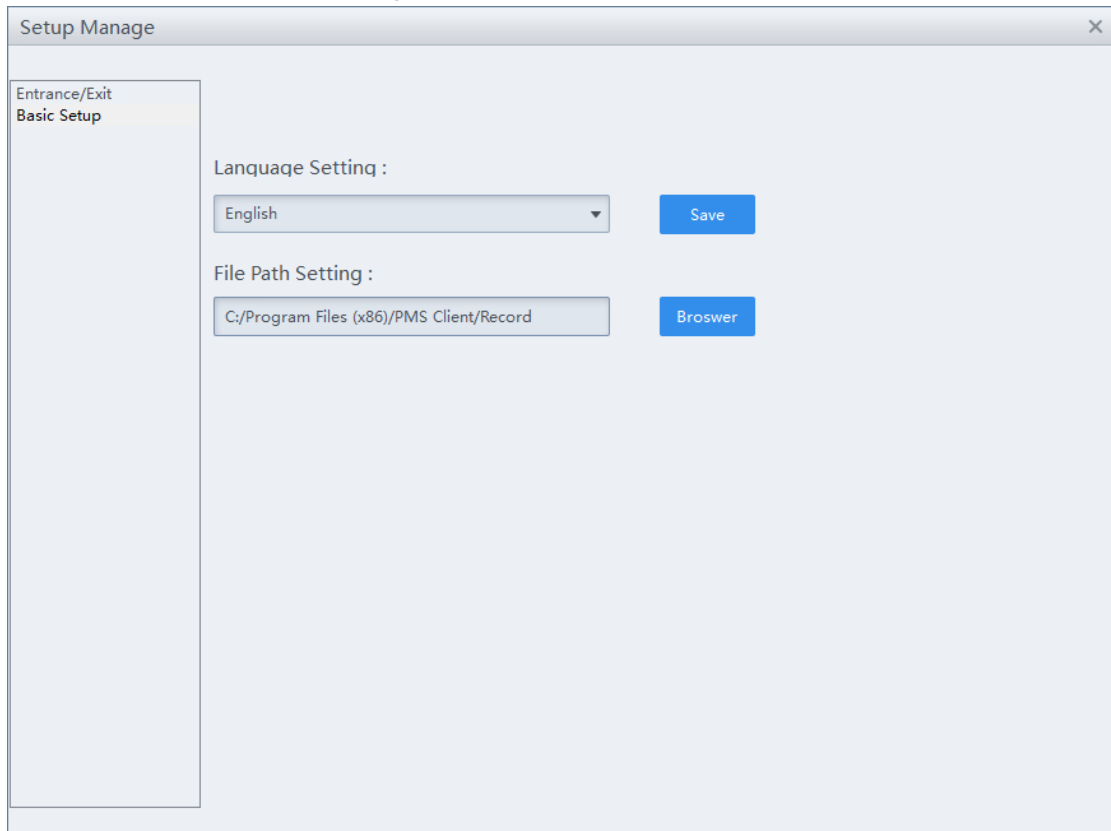
Click  at the upper-right interface of the client, and then select **Basic Setup > Language Setting** to set the language. See Figure 6-3.

Figure 6-3 Basic setup



**6. Where can the PMS video records be stored**

The video records can be stored on NVR or embedded video storage server (EVS).

**7. The vehicle detector works normally, but parking space status on the map does not change when parking space information changes**

Check whether the parking space No. of vehicle detector and PMS are configured the same. For the configuration of parking space No. on PMS, see Figure 6-4.

Figure 6-4 Edit device

**Device Type**

Device Type: Entrance/Exit Device

**Basic Info**

Name: \* [Redacted]

Manufacturer: DAHUA

Type: Spot Detector Device

IP Address: \* [Redacted]

Port: 37777

Username: \* admin

Password: \* [Redacted]

**Channel Info**

Channel Quantity: 1

Channel Name: \* [Redacted]\_1

Server: PTS( [Redacted] )

Parking Count: \* 1

No.1 parking: A 1 1

Get Info OK Cancel

**8. The client prompts failed to open the barrier**

Check whether any barrier is connected to the ANPR camera, or the barrier is properly connected.

**9. The indicator color of parking space detector on the map is different from the color of the actual detector indicator**

Check whether the parking spaces and parking space No. detected by the actual detector are the same as the settings on PMS.

**10. When the computer screen is small, the prompt message at the lower right corner often blocks some function buttons of the PMS Cashier client**

Currently, the PMS Cashier client cannot be adjusted according to the resolution. If the prompt message blocks the buttons, properly move the position of the client.

**11. I want to view the details of all entrance (exit) channels on the PMS Cashier client**

For a PMS Cashier client, it is necessary to bind entrance channels and exit channels (the number of entrance channels and exit channels are not necessarily the same). To view the live video information of all the entrances and exits, go to the PMS client.

**12. Picture is uploaded to the map on PMS, but no message is displayed on the browser page**



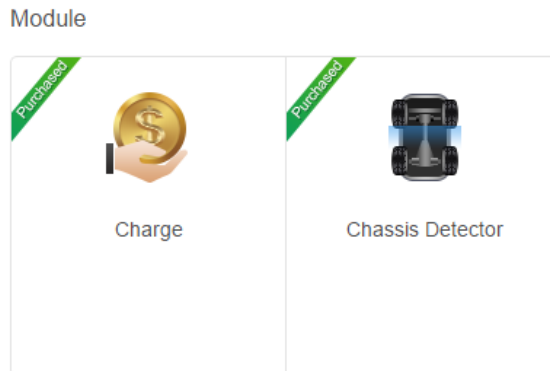
Check the address entered in the browser address bar for accessing the PMS. If access PMS with local host, please enter the IP address to log in to PMS.

## 6.3 Others

### 1. License for chassis detector

One chassis detector requires one license. See the figure below.

Figure 6-5 License



### 2. How does PMS obtain the parking space information

PMS obtains parking space information when the parking space detector detects parking space changes and reports relevant information (such as the number of parking spaces) to PMS.

Step 1 Go to **Basic Config > Device**, and then click **Add**. The **Edit Device** interface is displayed. See Figure 6-6.

Step 2 Select **Entrance/Exit Device** from the **Device Type** list, and **Spot Detector Device** from the **Type** list.

Step 3 Click **Get Info**, and then click **OK**.

Figure 6-6 Edit device

**Device Type**

Device Type: Entrance/Exit Device

**Basic Info**

Name: \* [redacted]

Type: Spot Detector Device

Port: 37777

Password: \* [redacted]

Manufacturer: DAHUA

IP Address: \* [redacted]

Username: \* admin

**Channel Info**

Channel Quantity: 1

Channel Name1: \* [redacted]\_1

No.1 parking: A 1 1

Server: PTS(1 [redacted])

Parking Count: \* 1

Get Info OK Cancel

**3. Sometimes license of parking space detector is imported, but detector cannot be added**

PMS requires adding at least one ANPR channel; otherwise, the license will be regarded as invalid certificate.

**4. The system prompts that port is in use when installing PMS**

Please restart the computer and install PMS again.

**5. The parking space detector is correctly connected and configured, but does not display the parking space status**

The name of the parking space detector cannot exceed 13 characters; otherwise, it might fail to display the status of parking spaces.

**6. Jiuzhou LED screen is offline**

The screen must be in the same network segment as the server.

**7. Dahua guidance screen cannot display information from PMS**

Check whether the PMS version is compatible with the firmware version of Dahua guidance screen.

For questions not covered in this FAQ manual, please contact our technical support.

# Appendix 1 Cybersecurity Recommendations

Cybersecurity is more than just a buzzword: it's something that pertains to every device that is connected to the internet. IP video surveillance is not immune to cyber risks, but taking basic steps toward protecting and strengthening networks and networked appliances will make them less susceptible to attacks. Below are some tips and recommendations on how to create a more secured security system.

## **Mandatory actions to be taken for basic equipment network security:**

### **1. Use Strong Passwords**

Please refer to the following suggestions to set passwords:

- The length should not be less than 8 characters;
- Include at least two types of characters; character types include upper and lower case letters, numbers and symbols;
- Do not contain the account name or the account name in reverse order;
- Do not use continuous characters, such as 123, abc, etc.;
- Do not use overlapped characters, such as 111, aaa, etc.;

### **2. Update Firmware and Client Software in Time**

- According to the standard procedure in Tech-industry, we recommend to keep your equipment (such as NVR, DVR, IP camera, etc.) firmware up-to-date to ensure the system is equipped with the latest security patches and fixes. When the equipment is connected to the public network, it is recommended to enable the "auto-check for updates" function to obtain timely information of firmware updates released by the manufacturer.
- We suggest that you download and use the latest version of client software.

## **"Nice to have" recommendations to improve your equipment network security:**

### **1. Physical Protection**

We suggest that you perform physical protection to equipment, especially storage devices. For example, place the equipment in a special computer room and cabinet, and implement well-done access control permission and key management to prevent unauthorized personnel from carrying out physical contacts such as damaging hardware, unauthorized connection of removable equipment (such as USB flash disk, serial port), etc.

### **2. Change Passwords Regularly**

We suggest that you change passwords regularly to reduce the risk of being guessed or cracked.

### **3. Set and Update Passwords Reset Information Timely**

The equipment supports password reset function. Please set up related information for password reset in time, including the end user's mailbox and password protection questions. If the information changes, please modify it in time. When setting password protection questions, it is suggested not to use those that can be easily guessed.

### **4. Enable Account Lock**

The account lock feature is enabled by default, and we recommend you to keep it on to guarantee the account security. If an attacker attempts to log in with the wrong password several times, the corresponding account and the source IP address will be locked.

## **5. Change Default HTTP and Other Service Ports**

We suggest you to change default HTTP and other service ports into any set of numbers between 1024~65535, reducing the risk of outsiders being able to guess which ports you are using.

## **6. Enable HTTPS**

We suggest you to enable HTTPS, so that you visit Web service through a secure communication channel.

## **7. Enable Whitelist**

We suggest you to enable whitelist function to prevent everyone, except those with specified IP addresses, from accessing the system. Therefore, please be sure to add your computer's IP address and the accompanying equipment's IP address to the whitelist.

## **8. MAC Address Binding**

We recommend you to bind the IP and MAC address of the gateway to the equipment, thus reducing the risk of ARP spoofing.

## **9. Assign Accounts and Privileges Reasonably**

According to business and management requirements, reasonably add users and assign a minimum set of permissions to them.

## **10. Disable Unnecessary Services and Choose Secure Modes**

If not needed, it is recommended to turn off some services such as SNMP, SMTP, UPnP, etc., to reduce risks.

If necessary, it is highly recommended that you use safe modes, including but not limited to the following services:

- SNMP: Choose SNMP v3, and set up strong encryption passwords and authentication passwords.
- SMTP: Choose TLS to access mailbox server.
- FTP: Choose SFTP, and set up strong passwords.
- AP hotspot: Choose WPA2-PSK encryption mode, and set up strong passwords.

## **11. Audio and Video Encrypted Transmission**

If your audio and video data contents are very important or sensitive, we recommend that you use encrypted transmission function, to reduce the risk of audio and video data being stolen during transmission.

Reminder: encrypted transmission will cause some loss in transmission efficiency.

## **12. Secure Auditing**

- Check online users: we suggest that you check online users regularly to see if the device is logged in without authorization.
- Check equipment log: By viewing the logs, you can know the IP addresses that were used to log in to your devices and their key operations.

## **13. Network Log**

Due to the limited storage capacity of the equipment, the stored log is limited. If you need to save the log for a long time, it is recommended that you enable the network log function to ensure that the critical logs are synchronized to the network log server for tracing.

## **14. Construct a Safe Network Environment**

In order to better ensure the safety of equipment and reduce potential cyber risks, we recommend:

- Disable the port mapping function of the router to avoid direct access to the intranet devices from external network.

- The network should be partitioned and isolated according to the actual network needs. If there are no communication requirements between two sub networks, it is suggested to use VLAN, network GAP and other technologies to partition the network, so as to achieve the network isolation effect.
- Establish the 802.1x access authentication system to reduce the risk of unauthorized access to private networks.

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