



Installation and Configuration Guide

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LPA Installation and Configuration

To start using Loss Prevention Analytics to get a clear view of retail operations, you need to set up the LPA infrastructure at your location. As part of this process, you need to perform the following activities:

- Install the DC Box and NAS at the location
- Install and configure LPA cameras
- Configure port forwarding

You can set up the LPA infrastructure using the following scenarios:

- **Recommended scenario:** This scenario presupposes automatic configuration of main settings in the LPA infrastructure. It is recommended that you follow this scenario when deploying the LPA infrastructure.
- **Advanced scenario:** In case the LPA infrastructure is not set up automatically for some reason, you can refer to the [Loss Prevention Analytics FAQ](#) section to learn how to configure the LPA settings manually.



This section describes the installation and configuration process for HIKVISION cameras of the DS-2CD2132F-I model. To install cameras from other manufacturers, find out the proper IP utility in the Internet and apply the logic described in this section.

LPA Full Package

The Loss Prevention Analytics solution includes the following components:

- Loss Prevention Analytics module: [buy now](#)
- Cameras: [buy now](#)
- Direct Connect DC-401: [buy now](#)
- PoE Ethernet Switch: [buy now](#)
- Buffalo NAS TS 3210: [buy now](#) (sold separately through Amazon)

Recommended Installation Scenario

As soon as you pay the LPA subscription fee for a particular location, the system enables LPA for this location in CStoreOffice®. You then need to set up the LPA infrastructure at the location. The infrastructure setup includes the following steps:

1. [Installing and configuring hardware](#)
2. [Setting up port forwarding](#)

3. Configuring LPA settings in the LPA Settings Console on the DC Box

1 Installing and Configuring Hardware

When you receive the DC Box, NAS device, switch and cameras, you need to install all hardware properly at the location so that the software installation process is successful and error-free. To learn about hardware installation schemes and the activation process, you can refer to the following documents:

- [LPA Quick Start Guide](#)
- [DC Box Quick Start Guide](#)
- [DC Box Activation Guide](#)

The documents are typically sent to your email address. If you do not receive the documents, use the links above or find the documents at <https://help.petrosoftinc.com>.



Leave all devices powered on after you install and activate them.

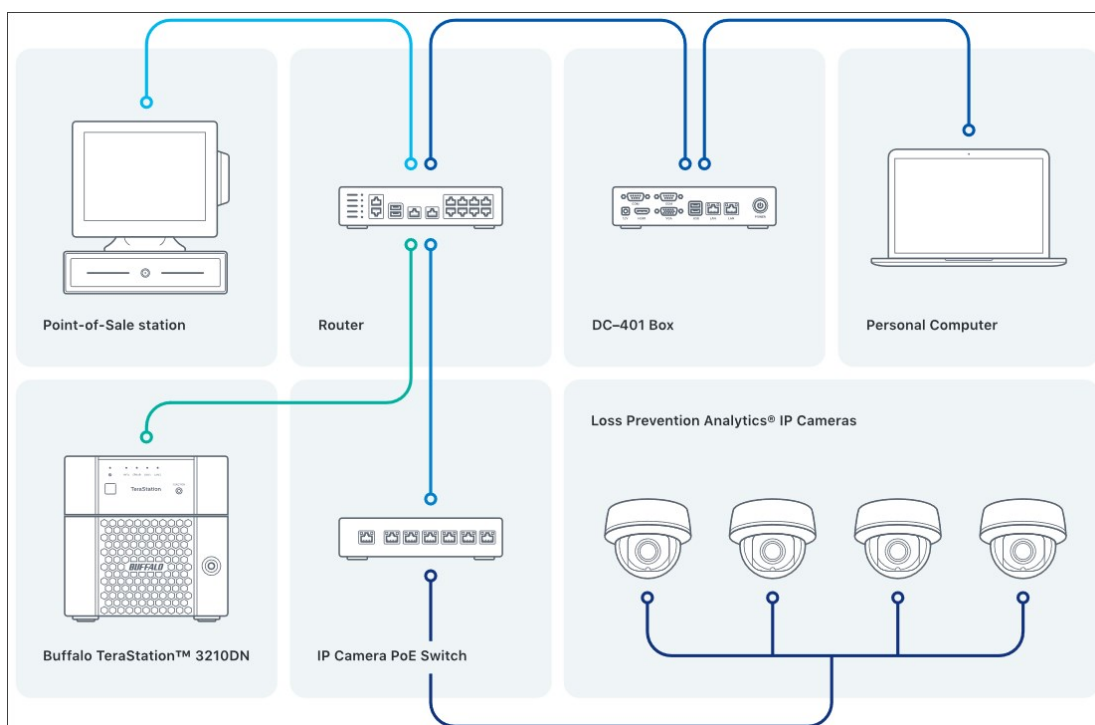
You need to physically set up all devices in the network. Do the following:

1. To install and activate the DC Box correctly, follow the [DC Box Activation Guide](#). Make sure the DC Box is activated.
2. To install the location POS correctly, follow the instructions from the manufacturer. If you are using SmartPOS, follow the SmartPOS installation manual.



Do not connect the NAS device or DC Box to the PoE switch.

3. Connect NAS Buffalo to the LAN port on the router as shown in the diagram below.



4. Review the following sections to learn about cameras installation and configuration, cameras view and positions and required tools and materials:

- o [Tools and Materials](#)
- o [Cameras View and Positions](#)
- o [Cameras Installation and Configuration](#)

Tools and Materials

Before installing a camera, make sure you have the following tools and materials:

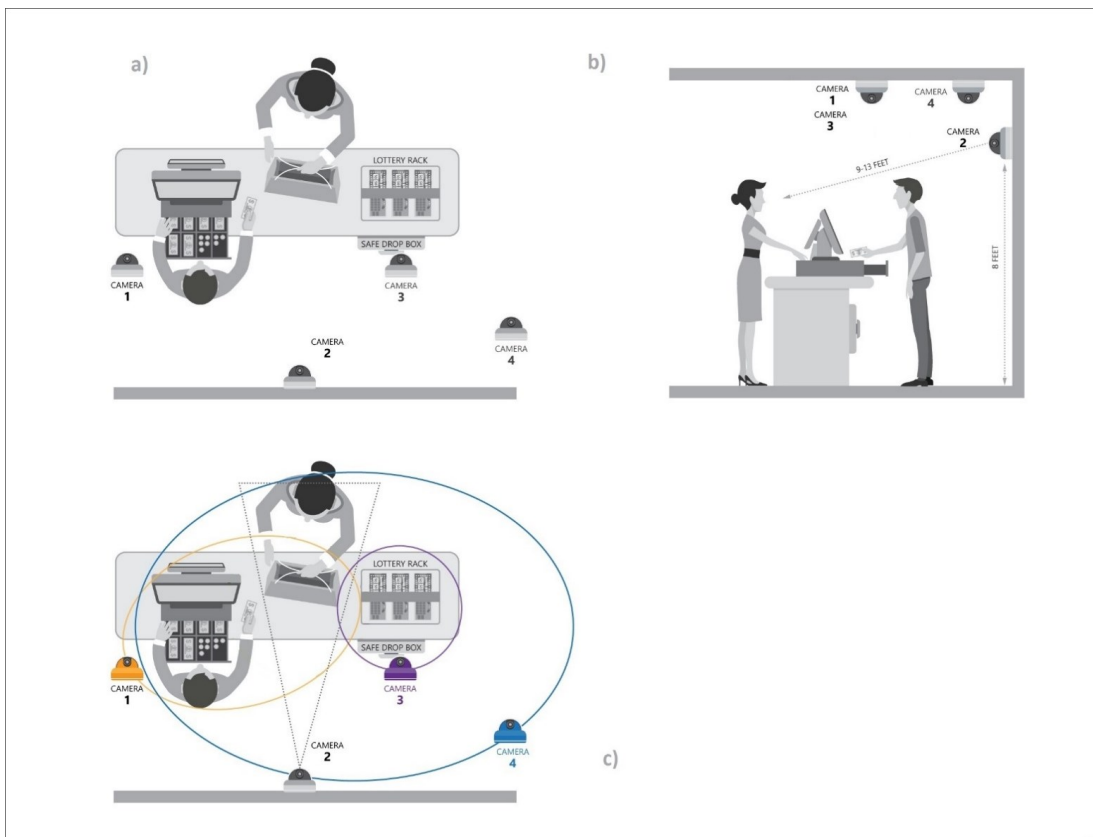
- 1 box 1000 feet STP Cat 5e cable
- Pack of RJ-45 ends for STP
- Zip ties
- Crimp tool
- Ethernet cable tester
- Wire cutter

You may also need the following extra equipment:

- PoE switch (8+1 ports)
- 12- or 24-port rack mountable patch panel (only for cases with a mounting rack)

Cameras View and Positions

To learn about the cameras basic layout, their side view and coverage area, refer to the diagram below.



Cameras at the location must be set up in the following way:

- **Camera 1:** Counter and drawer close up to see the product name and cash value. The pop view of the counter to be able to generate motion events in cases when a cashier does not use the register for customer's purchase.

The cash register camera must be mounted on the ceiling and should be aligned with the cash drawer and must see the entire drawer when open. The camera must also see products scanned by the register, and the counter. An optimal distance between the register and camera is 6-7 feet.

- **Camera 2:** Customer's face, automatic WB balance, close shot, the cashier should not block the view. This camera should help detect customers' age clearly.

The customer view camera must be installed on the wall approximately 8 feet above the floor, 2-3 feet aside from the cash register. For an optimal view of a customer, the distance between the camera and object must not be less than 9 ft. The best view is achieved in the range of 9' and 13'.

- **Camera 3:** Lottery, instant tickets. An unobstructed view of the instant lottery rack to see the ticket type sold. The motion detection. This setup uses a 12 mm fixed zoom camera.

- **In case of lottery rack use:**

For instant lottery racks with 4 slots wide and 5 slots high, the camera is mounted on the ceiling above the lottery rack. Position the camera 1 or 2 feet in front of the rack to be able to see the rack in angle. For an optimal view, the height range between the object and camera is 4'-5.5'. For wider lottery racks, you might need to use a 6 mm or 4 mm camera.

- **In case of a close counter view:**

Mount the camera on the ceiling right above the spot on the counter where products and money are mostly placed. An optimal height is 7 feet above the counter.

- **Camera 4:** Generic view of cashier's area to be able to see cash drops and other activities out of close proximity to covered areas.

Mount the camera on the ceiling. Choose a sweet spot based on your store layout. You must be able to see a cashier working on transaction, a customer standing in front of the register and the safe drop box (if present) simultaneously. There is no strict guideline for the camera 4 installation location because every store is unique.

Cameras Installation and Activation

To install and activate cameras at the location, you need to perform the following activities:

1. [Make a survey and planning.](#)
2. [Prepare wires.](#)
3. [Install cameras.](#)
4. [Connect the PoE switch.](#)
5. Activate cameras. Typically, cameras are activated automatically. If not, you can activate them manually. For details, see [FAQs: Loss Prevention Analytics > Installation and Configuration.](#)
6. [Adjust the cameras view.](#)
7. [Set up the video quality.](#)

Making a Survey and Planning

Before you install and activate cameras at the location, make the following survey:

1. Determine where cameras are going to be installed in accordance with your needs. For more details, see [Cameras View and Positions.](#)
2. Measure the length of the cable from the place where the PoE switch and DC Box will be installed

to the spot of each camera. Consider the obstacles that need to be bypassed.

3. After the measurement is done, allow 2 feet of slack at the end for play.

Preparing Wires

To prepare wires for cameras:

1. Cut the necessary length of the STP CAT5e cable and pull it above the ceiling.
2. Crimp both ends of cables to plug them to cameras and the PoE switch. If you use a rack, crimp only one end in accordance with the 568B standard, and second end of the cables punch to the patch panel using the "B" pattern as a reference.
3. Fasten the patch panel to the top position of the rack using M6-1.0 bolts.
4. Check cable ends for miswiring using the tester.

Installing Cameras

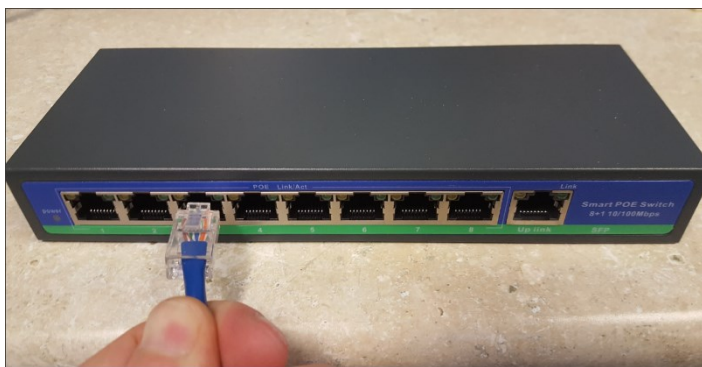
To install cameras:

1. Put template stickers that come with a camera on the desired spots.
2. Drill the holes using a bit that matches the anchor diameter and then insert anchors into these holes.
3. Unmount the camera cover using the hex key that comes with your camera.
4. Align the holes of camera housing and drilled holes.
5. Plug the CAT5e end to the camera, fasten the screws and then secure camera on the ceiling or wall.
6. Leave the camera cover open.

Connecting the PoE Switch

To connect the PoE switch:

1. Plug the CAT5e cables from cameras to the PoE switch ports as shown below.



2. For the patch panel and rack scenario, use 1 or 2 ft premade CAT5e cables. Plug one end of the cable to the patch panel and the other end to the PoE switch. From “up link” port, pull the cable to the ISP router.

The solid light on the ports means the connection is up. The blinking light means activity (data travels back and forth).

Adjusting Cameras View

To adjust the cameras view:

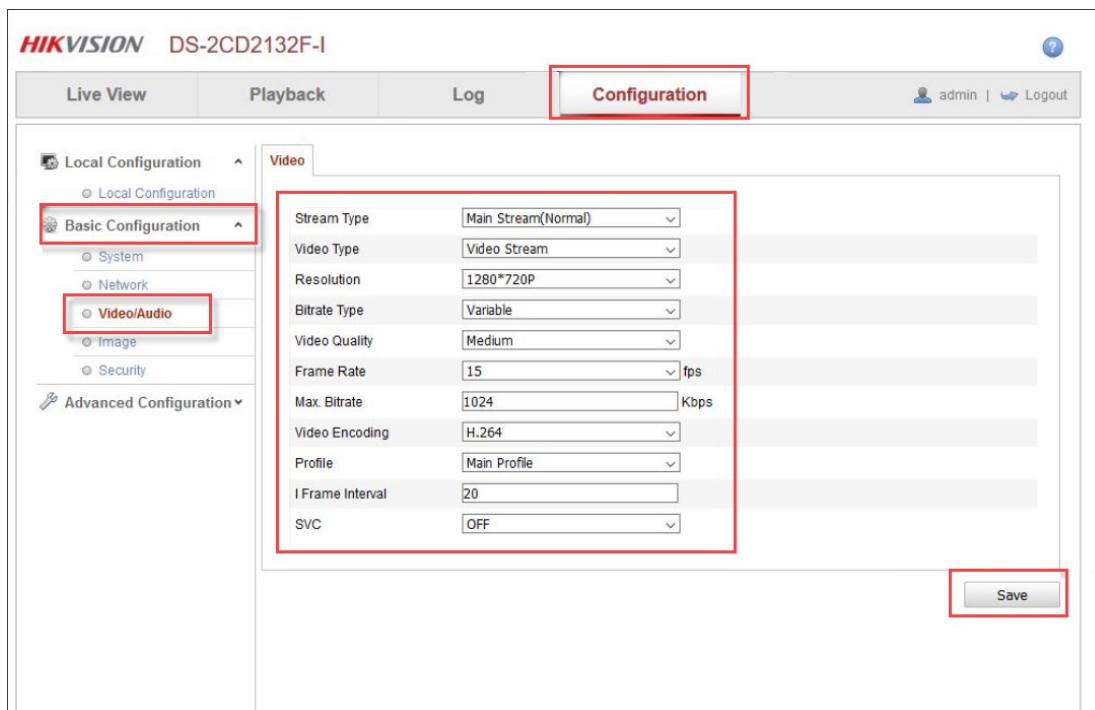
1. After you validate that the camera is functioning properly, make the necessary adjustments by turning and twisting the camera head.
2. Once an adjustment is done, fasten the camera cover back.

Setting up the Video Quality

To set up the video quality for a HIKVISION camera:

1. Click the **Configuration** tab.
2. In the **Basic Configuration** menu, select **Video/Audio**.
3. On the **Video** tab, specify the following settings:
 - From the **Resolution** list, select 1280*720P.
 - From the **Frame Rate** list, select 15 fps.
 - In the **Max. Bitrate** field, enter 1024 Kbps.
 - From the **Video Encoding** list, select H.264.
 - In the **I Frame Interval** field, enter 20.

4. Click **Save**.



2 Setting up Port Forwarding

To set up port forwarding:

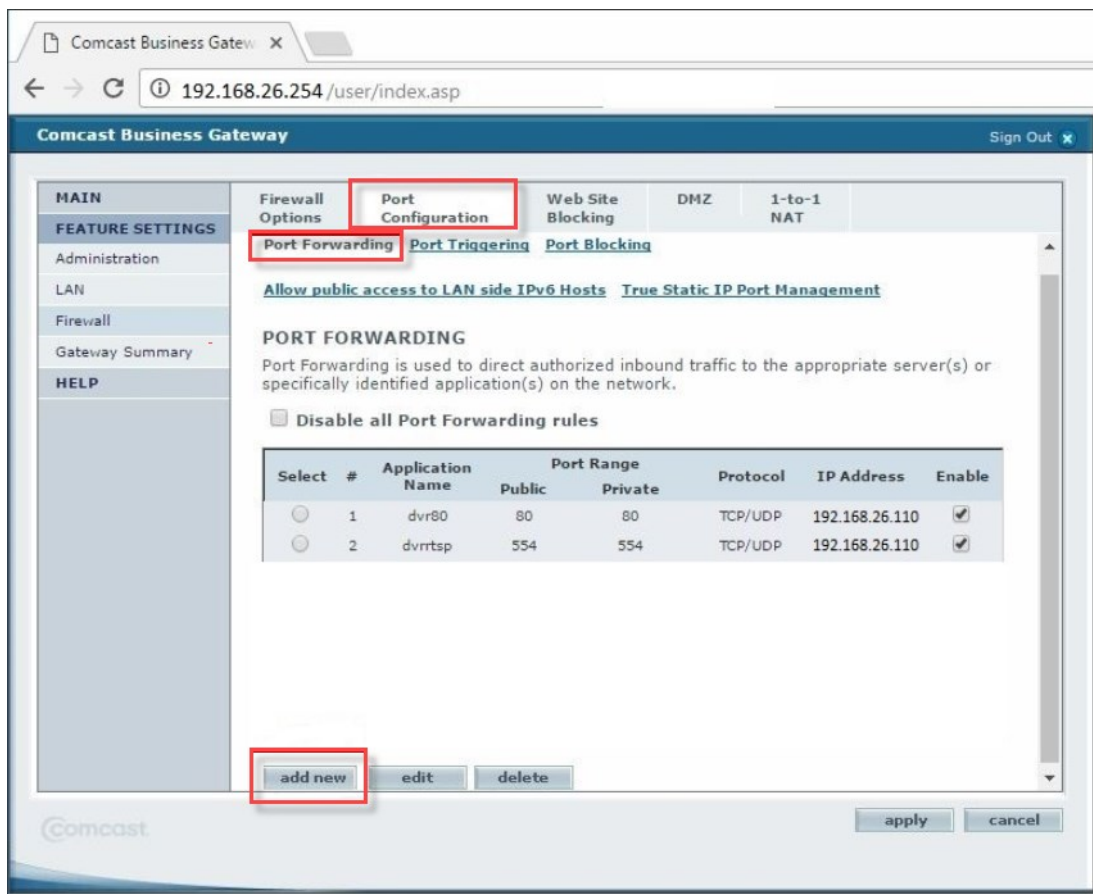
1. Open a web browser, in the address bar, enter the default gateway IP address and then press **Enter** on the keyboard.
2. Log in to the router using the username and the password given by your Internet provider.

For Comcast users, the default login and password values are the following:

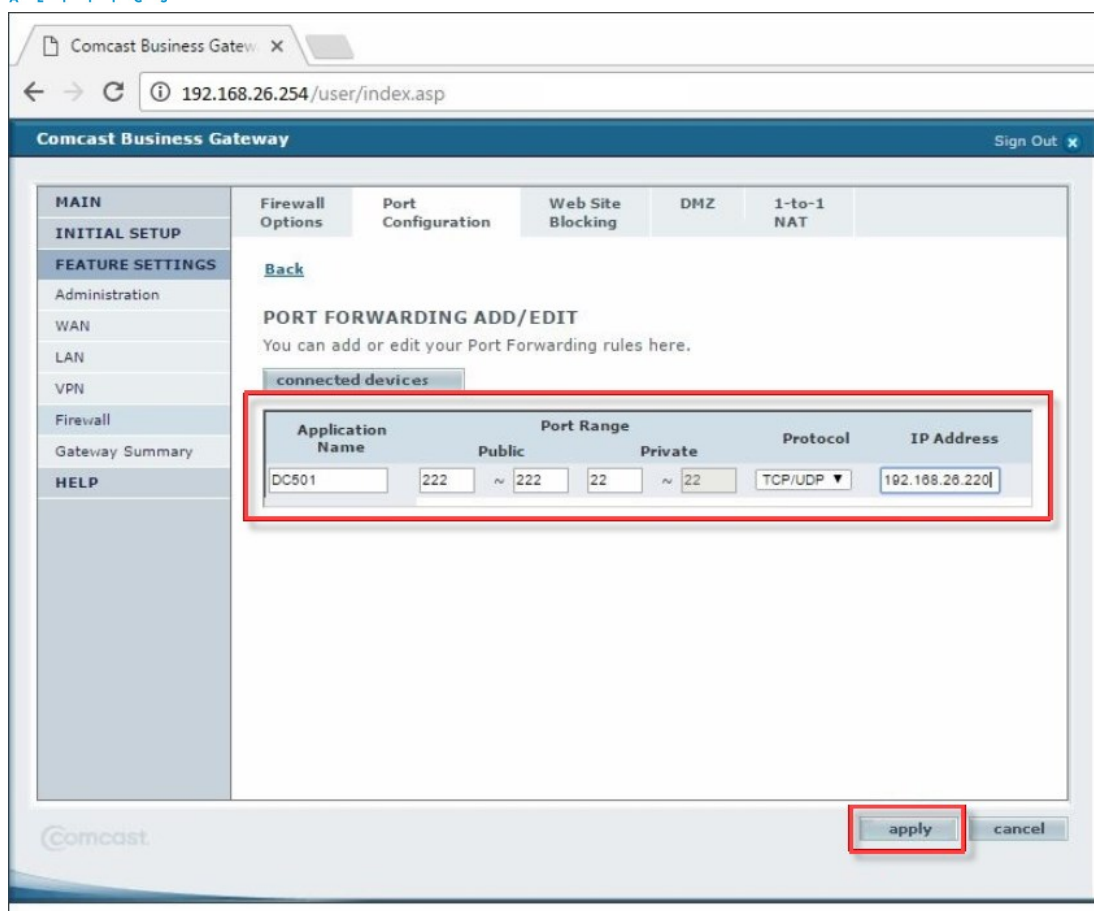
- o Login name: *cusadmin*
- o Password: *highspeed*

3. In the **Comcast Business Gateway** window, in the left menu, select **Firewall**.

- Click the **Port Configuration** tab, click the **Port Forwarding** link and then click **add new**.



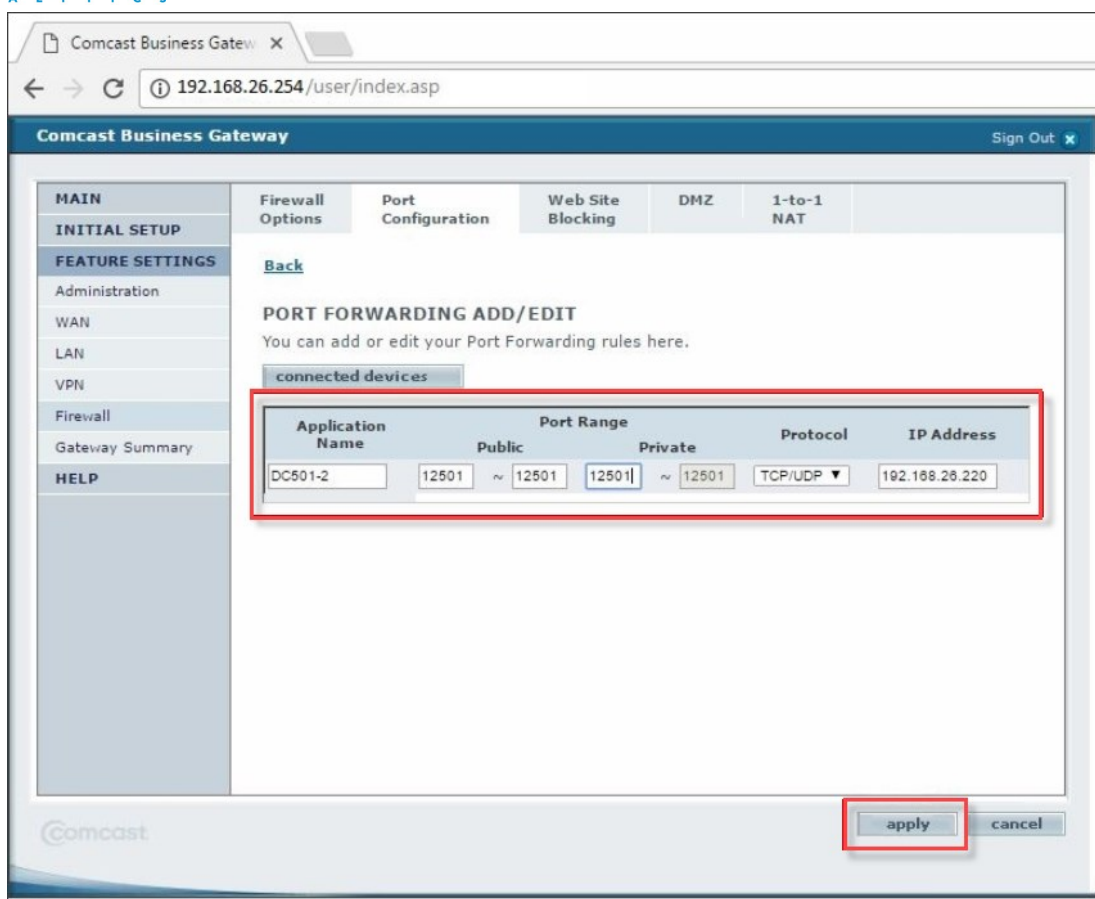
- In the **PORT FORWARDING ADD/EDIT** view, configure the following data and then click **apply**:
 - In the **Application Name** field, enter DC.
 - In the **Public** fields, enter the port range from 222 to 222.
 - In the **Private** field, enter 22.
 - From the **Protocol** list, select **TCP/UDP**.
 - In the **IP Address** field, enter X.X.X.220.



6. Click **add new** once again.
7. In the **PORT FORWARDING ADD/EDIT** view, configure the following data and then click **apply**:
 - o In the **Application Name** field, enter DC-2.
 - o In the **Public** fields, enter the port range from 12501 to 12501.
 - o In the **Private** field, enter 12501.
 - o From the **Protocol** list, select **TCP/UDP**.
 - o In the **IP Address** field enter X.X.X.220.

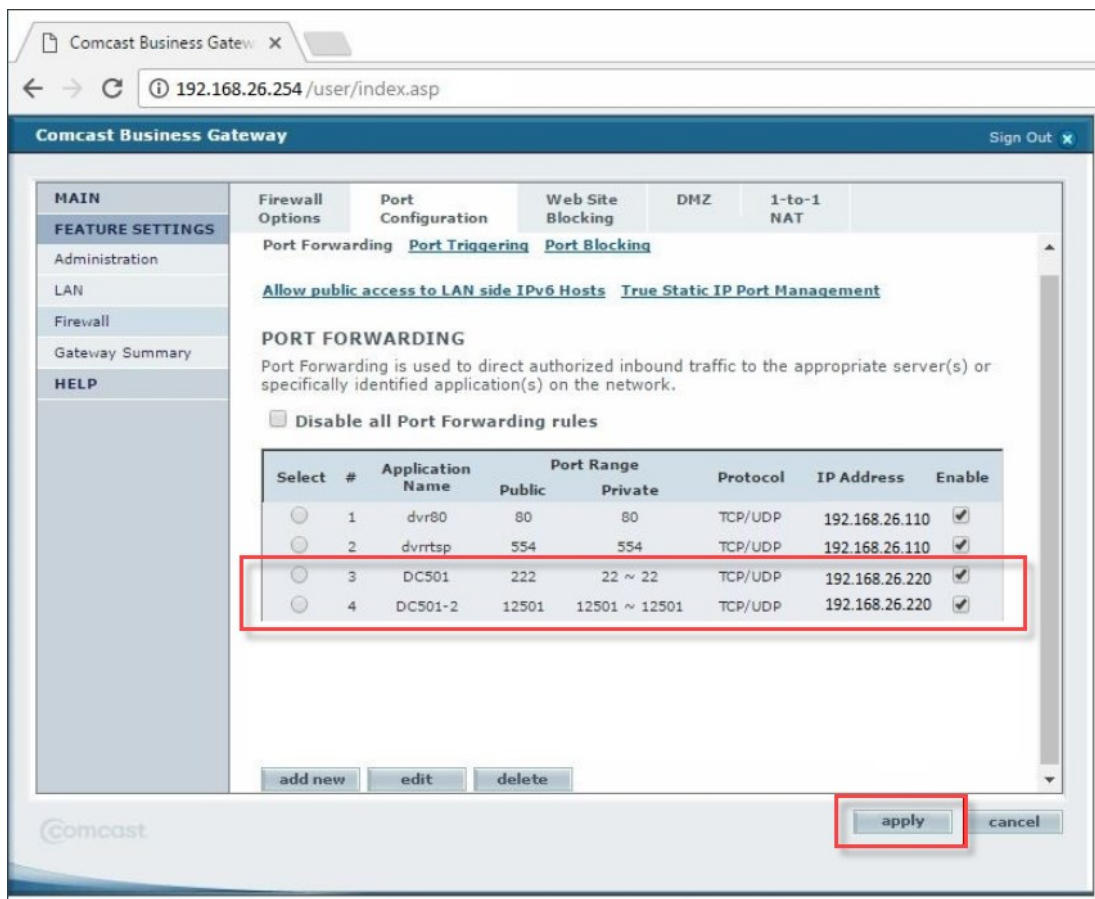


The first three octets of the IP address – 192.168.26 in this example – must match the first three octets of your default gateway. The last octet of the IP address must be 220.



8. When DC and DC-2 are added, click **Apply**.
9. (Optional) If you have another Internet provider, contact the provider technical support to find out

how to set up port forwarding. Then apply the same logic to add DC and DC-2 ports.



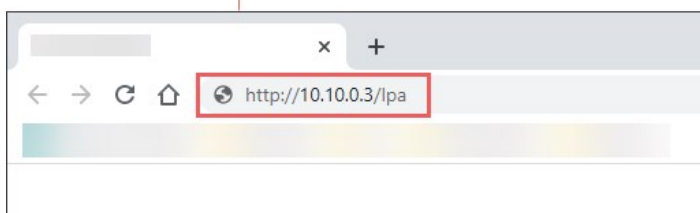
3 Configuring LPA Settings in the LPA Settings Console


At this step, you must configure the LPA infrastructure settings in the LPA Settings Console on the DC Box.

To configure the LPA infrastructure settings:

1. Log in to the LPA Settings Console on the DC Box. Do the following:
 - a. Open a web browser and in the address bar, enter the DC Box IP address as it is displayed in the image below.


Enter the following URL:
http://<dcbox_ip>/lpa,
 where <dcbox_ip> is the IP address of the DC Box.



 To find the correct IP address of your DC Box, check the DC Box Installation Manual.


b. Log in to the settings console using the following credentials:

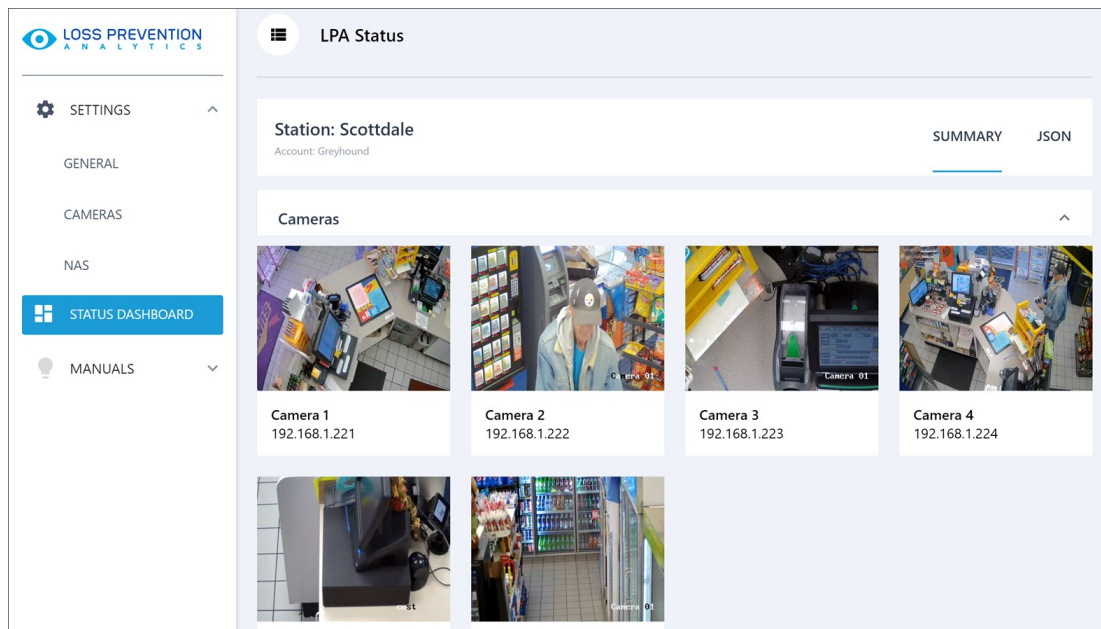
- Username: *admin*
- Password: *SwHH3g*

 *SwHH3g* is a default password. It may be changed in cash register settings in CStoreOffice®. For details, see [Station Options: Cash Register](#).

c. Click **Login**.

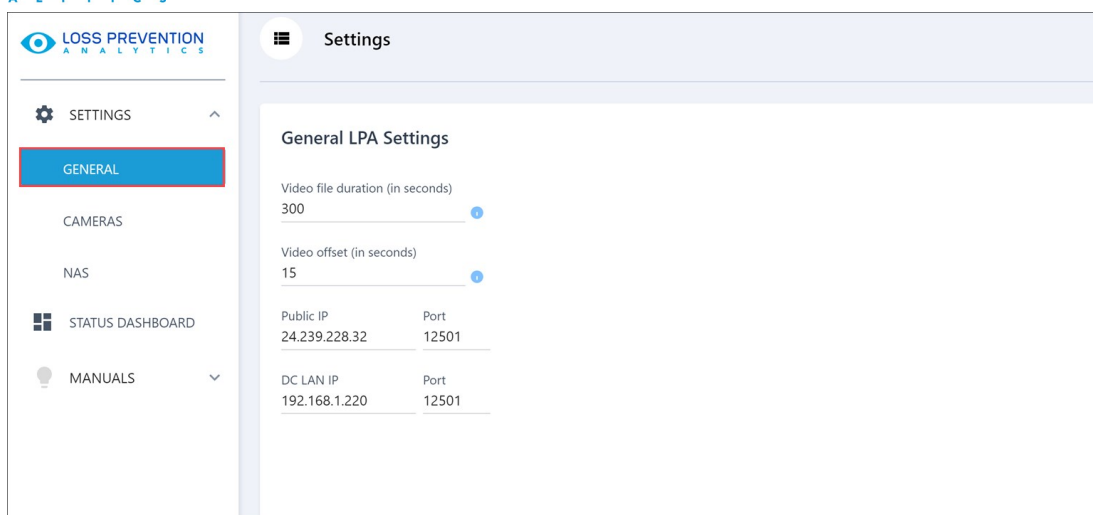
Result: LPA displays the **Status Dashboard** page.

 If the LPA Settings Console is not displayed, see [FAQs: Loss Prevention Analytics](#).

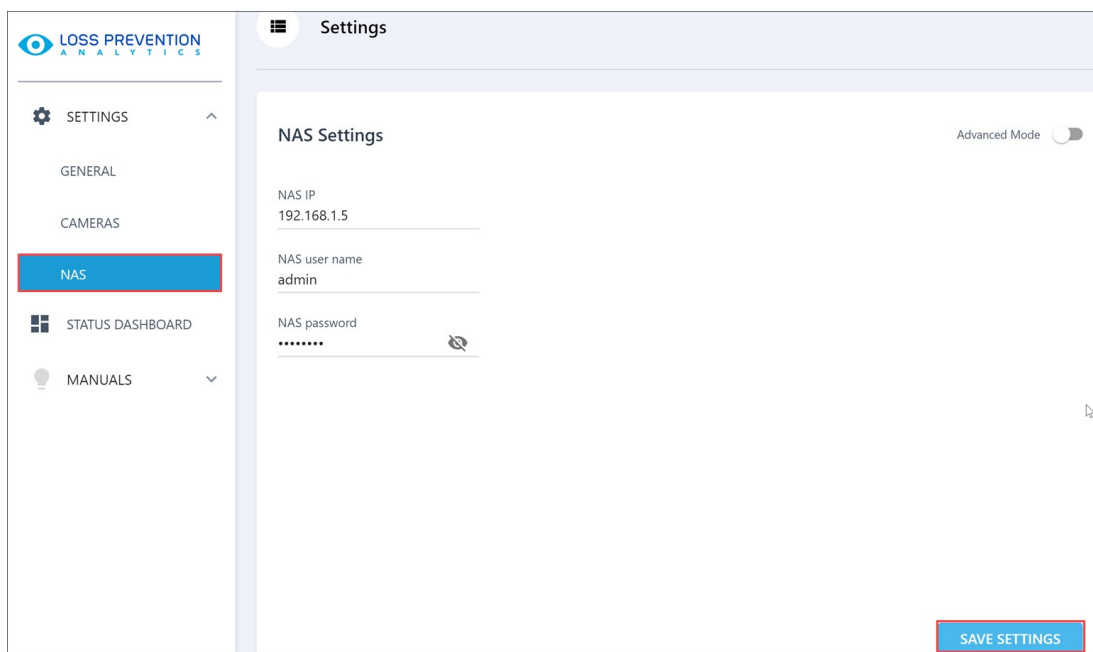


2. In the left pane, select **Settings > General** and make sure all fields have values. If some values are missing, configure the LPA settings as required. The recommended values are the following ones:

- **Video file duration:** 300
- **Video offset:** 15
- **Port:** 12501



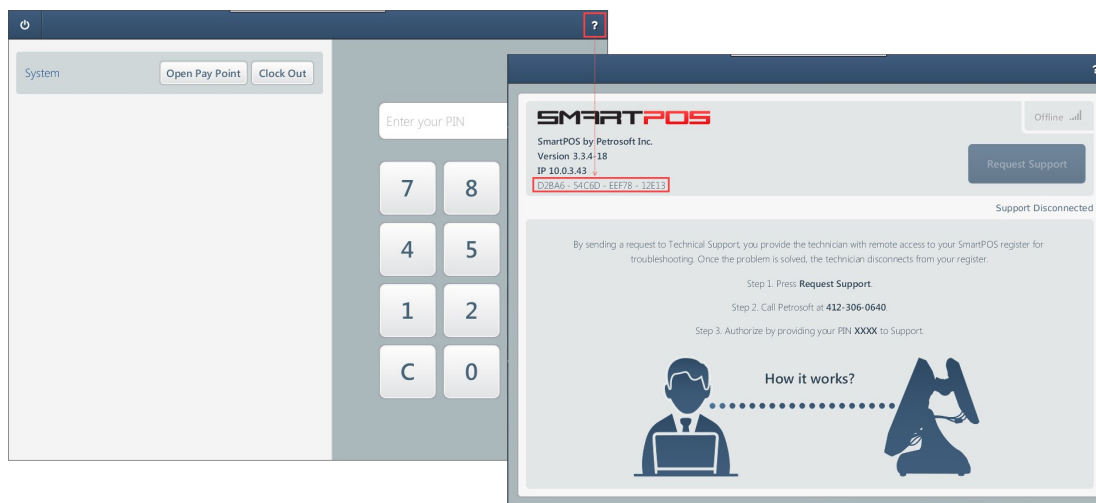
- In the left menu, select **NAS** and make sure all fields have values. If the fields are empty, it might mean the default NAS password has been changed. In this case, enter the NAS IP address, username and password manually and at the bottom right of the view, click **Save Settings**.



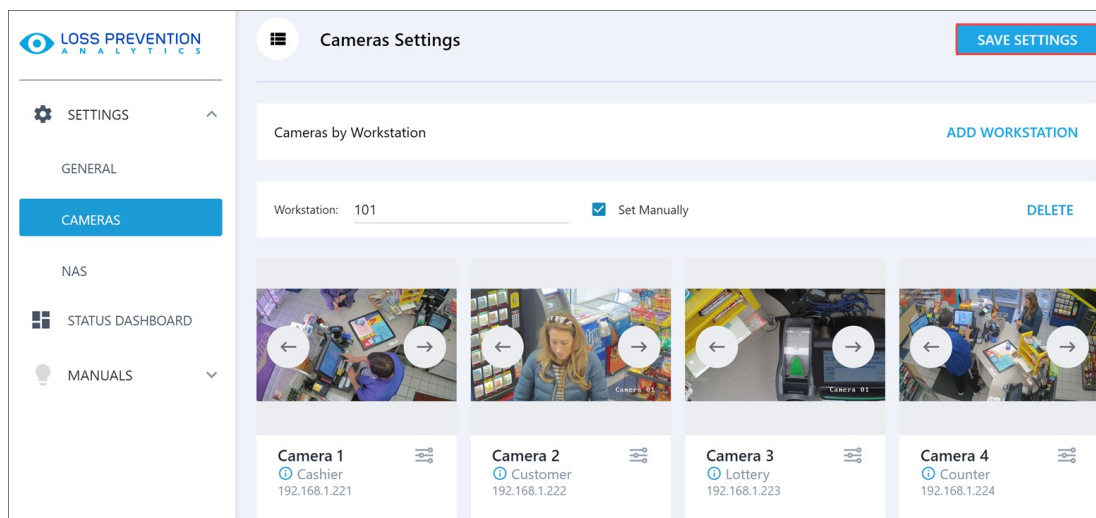
- In the left menu, select **Cameras** and configure the cameras settings:
 - At the top right of the view, click **Add Workstation**. The system must create a new workstation with four camera slots.

If in the **Workstation** field the workstation name is not displayed in 15-20 seconds, the workstation is probably not set up in CStoreOffice®. Then configure the workstation settings manually. To do this, in the **Workstation** field, enter the Terminal ID. The Terminal ID can be found in the 'til report' of your cash register.

If you are using SmartPOS, the Terminal ID is the same as the token key. You can find it by clicking the ? icon in SmartPOS.



- b. Choose the appropriate IP for each camera slot. Select the camera IP using the back and forward buttons on the slot. You can also click the settings icon at the bottom right of the camera slot and select the IP address from the list.
- c. At the top right of the view, click **Save Settings** to save all changes.



- 5. In the left menu, select **Status Dashboard** and make sure there are not errors. If you do not see any errors, the LPA installation is completed.

FAQs: Loss Prevention Analytics

Installation and Configuration

WHAT ARE THE HARDWARE REQUIREMENTS?

There are no hardware requirements except for the PJR files support. For more information, see [Enabling](#)

PJR Files.

Since Loss Prevention Analytics is a solution, video cameras and Direct Connect are provided in a box.

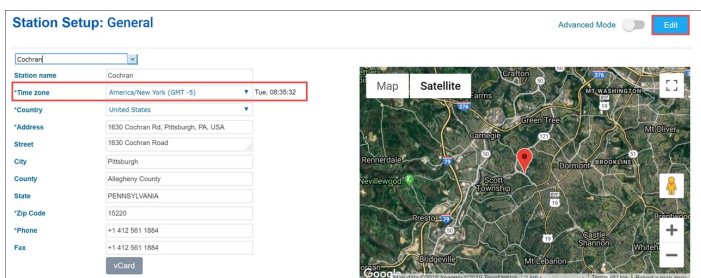
WHEN I CLICK THE LINK TO LPA IN THE DIRECT DEPARTMENT SALES IN THE SHIFT REPORT IS SAYS 'NO RESULT FOUND'.

It means that this department is present at the cash register but has not been configured on the CStoreOffice® side. It is recommended to configure the department within CStoreOffice®.

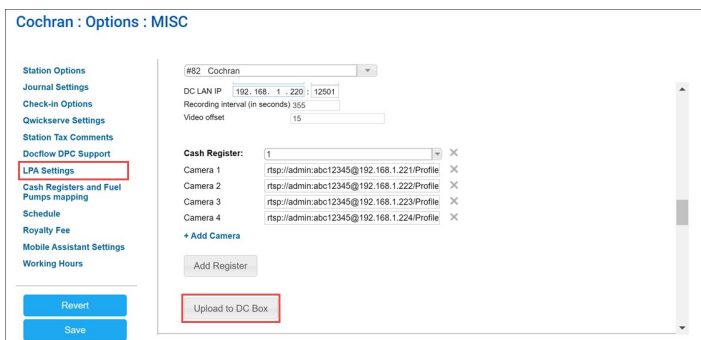
LPA IS NOT INSTALLED AUTOMATICALLY

Do the following:

1. Make sure the DC Box is activated and powered on.
2. Log in to CStoreOffice® using your Petrosoft Cloud account.
3. At the top menu, go to **Data Entry > Dashboard > Station Options > General.**
4. At the top of the **Station Setup: General** form, in the locations list, select the necessary location.
5. At the top right of the form, click **Edit**.
6. From the **Timezone** list, select the correct time zone for the location.
7. At the top right of the form, click **Save**.



8. In the left menu, select **MISC**.
9. To the left of the form, select **LPA Settings**.
10. Click **Upload to DC Box**.



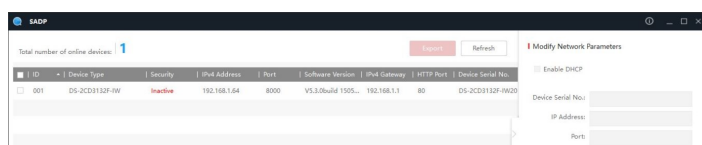
11. Wait for 5 minutes without powering off the DC Box. The system will reboot the DC Box and install LPA automatically.

CAMERAS ARE NOT ACTIVATED AUTOMATICALLY

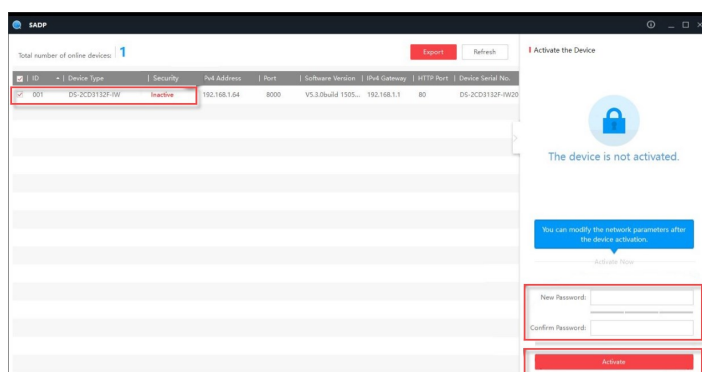
Activating Cameras Manually

To activate cameras manually:

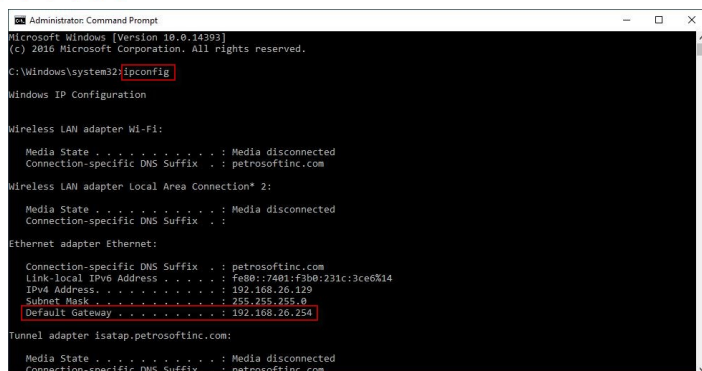
1. Assign the IP addresses to the cameras. Do the following:
 - a. Install and launch the SADP application that comes with the HIKVISION camera.
 - b. Wait until the cameras appear in the list.



2. Activate the cameras. Do the following:
 - a. In the cameras list, select an inactive camera.
 - b. In the **New Password** and **Confirm Password** fields of the activation tab, enter the password you want to use.
 - c. Click **Activate**.



3. Generate new IP addresses to the cameras based on your network gateway IP address. Do the following:
 - a. Run the Command Prompt as an administrator, type `ipconfig` and then press **Enter** on the keyboard.

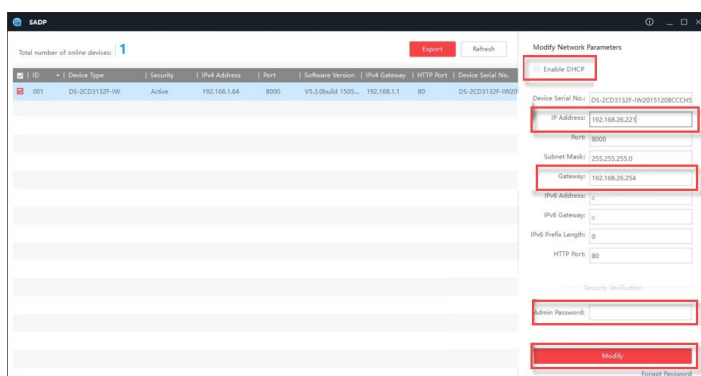


You can open the Command Prompt in the following ways:

- In Microsoft Windows 10, right-click **Start** and then select **Command Prompt (Admin)**.
 - In Microsoft Windows 7 and Microsoft Windows XP, click **Start**, in the **Start Search** box, type **cmd** and then press **Ctrl+Shift+Enter** on the keyboard.
- b. Generate new IP addresses to your cameras using your gateway IP address. For that, take the IP address value from the **Default Gateway** field and change its last octet value from 221 to 224 for cameras 1 to 4 respectively.

For example, the **Default Gateway** field value is 192.168.26.254. The last octet value here is 254. It can be any number in the range between 0 and 255. So, the IP address for Camera 1 is 192.168.26.221.

4. Assign new IP addresses to the cameras. Do the following:
 - a. Ensure that the **Enable DHCP** check box is not selected. If it is selected, clear it.
 - b. In the **IP Address** field, enter the newly generated IP address for the camera.
 - c. In the **Gateway** field, enter the value from the **Default Gateway** field.
 - d. In the **Admin Password** field, enter the password created during activation.
 - e. Click **Modify**.



5. Ensure the camera is set up and working properly. Open the Mozilla Firefox browser and then do the following:
 - a. In the address bar, enter the camera IP address and then press **Enter** on the keyboard.

- b. In the displayed window, in the **User name** field, enter *admin*.
- c. In the password field, enter the password created during activation.
- d. Install the plugin and then restart the browser after its installation.
- e. (Optional) If there is no picture, click the **Live view** tab.
- f. If the camera is working properly, you will be able to see the live video stream. Keep the browser open for camera view adjustment.

PJR FILES ARE NOT ENABLED AUTOMATICALLY

PJR Files are the POS Journal files that contain transaction details from the cash register. You can enable these files for the cash register manually, if applicable.

For details, see [Enabling PJR Files](#).

Subscription

HOW IS THE BILLING PERIOD CALCULATED?

Users are billed the first calendar day for the last month's period from the first till the last day of the month.

IS IT POSSIBLE TO CANCEL DEACTIVATION IF I CHANGED MY MIND?

Yes, until the first day of the next month when deactivation comes in effect.

IS IT POSSIBLE TO ACTIVATE AND DEACTIVATE A LOCATION SEVERAL TIMES WITHIN A MONTH?

Yes, in this case you are charged only for the days the product was activated for the specific location(s).

MY TRIAL PERIOD IS OVER SOON. WHAT SHOULD I DO TO CONTINUE WORKING WITH LPA?

Nothing. After expiration of the trial period the station automatically continues working in the subscription mode unless user unsubscribes his locations.

ARE THERE ANY REQUIREMENTS FOR USING LPA WITH VIDEO?

- DC501 - provided by Petrosoft
- Video cameras - provided by Petrosoft
- Installation of DC box and cameras by a technician

DOES THE ABSENCE OR PRESENCE OF THE VIDEO SETUP AFFECTS THE PRICING?

No, it does not.

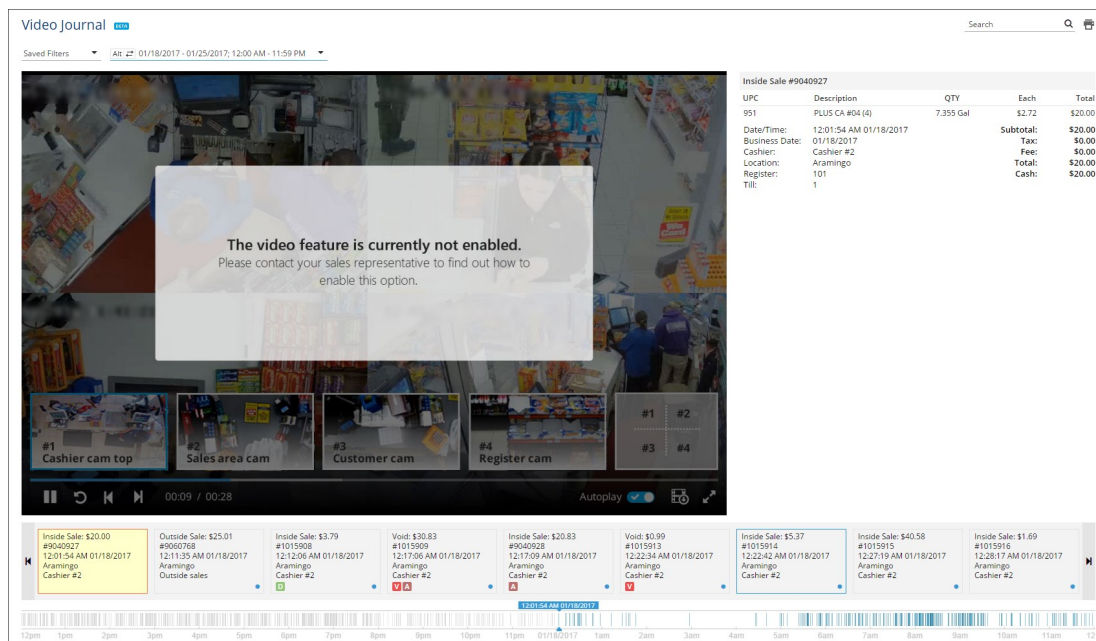
General

CANNOT SEE VIDEOS FROM MOBILE PHONE

Make sure that you are connected to the Internet via the unrestricted network, such as 3G, 4G, or LTE.

IS IT POSSIBLE TO USE VIDEO JOURNAL WITHOUT VIDEO?

If video is not available for your account, a placeholder is displayed instead of the video.



But you can still use this report to view and analyze the cash register transactions.

CANNOT SEE VIDEO FOOTAGE FROM LPA

Please check the video codec settings on your cameras. CStoreOffice® supports for H.264 video codec.

If you camera has the H.265 video codec configured, do one of the following:

- Change **H.265** to **H.264** on your cameras.
- or
- Use the Microsoft Edge browser.

LPA VIDEO TIME AND REAL TRANSACTION TIME DON'T MATCH

Make sure the time zone is defined properly in the station options.

1. From the CStoreOffice® main page, open the station options form. For details how to open the station options form, see [Setting Up Locations](#).
2. Go to the **Station Options: General** section > **Time Zone** field.

3. Make sure a correct time zone is selected in the **Time Zone** field. If not, update it and then click the **Save** button.

The screenshot shows the 'Station Setup: General' configuration page. On the left is a sidebar menu with options like 'General', 'UST System', 'Fuel VIP', etc. The main form contains fields for 'Station name', '*Time zone' (set to 'America/New York (GMT -5)'), '*Country' (United States), '*Address' (PA, USA), 'Street', 'City' (Pittsburgh), 'County', 'State' (PENNSYLVANIA), '*Zip Code' (15220), '*Phone', and 'Fax'. A 'vCard' button is at the bottom of the form. To the right is a Google Maps satellite view of Pittsburgh with a red location pin. At the top right of the form, there are 'Advanced Mode' toggle, 'Save', and 'Cancel' buttons. The 'Save' button is highlighted with a red box.