

User's Manual



Shepherd

Collective Management & Configuration Utility for
VIVOTEK Cameras



Rev. 1.3
for rev. 2.4.0.x



About this Document

Rev. 1.0: This document is written for Shepherd revision 2.1.0.0 or later.

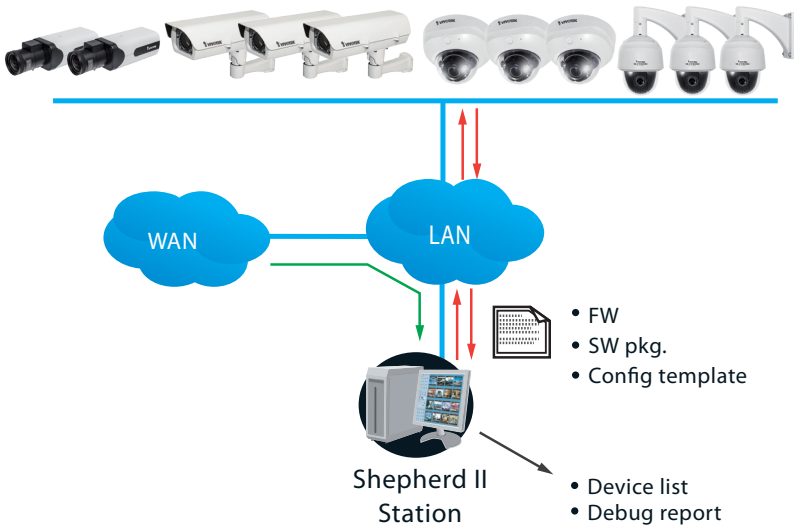
Rev. 1.1: Added the IP range search function.

Rev. 1.2: Added description for the forceful password policy.

Rev. 1.3: Added description for the adaptive resolutions, the Debug report, the support for Smart Stream II, default and selectable browser support, and DRM information. Renamed Shepherd II as Shepherd.

How It Works

The Shepherd utility is an installation and management tool that helps facilitate the configuration of multiple cameras. The tool can be used to automatically search the network for cameras, assign IP addresses, display connectivity, manage firmware/software upgrades, and collectively configure multiple cameras.



I. Requirements

Shepherd rev. 2.0 supports Windows OSes. You should upgrade your operating system with the latest service packs:

- Windows 10, 8, 7

- Below are the typical TCP ports for access to individual network cameras

Network General settings:

HTTPS = 443

FTP = 21

Streaming:

HTTP = 80

Secondary HTTP = 8080

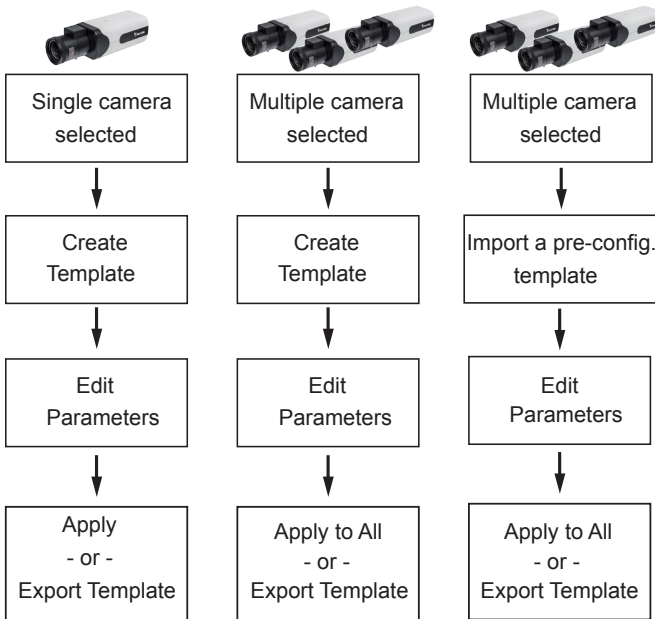
RTSP = 554

RTP for video = 5556

RTCP for video = 5557

RTP for audio = 5558

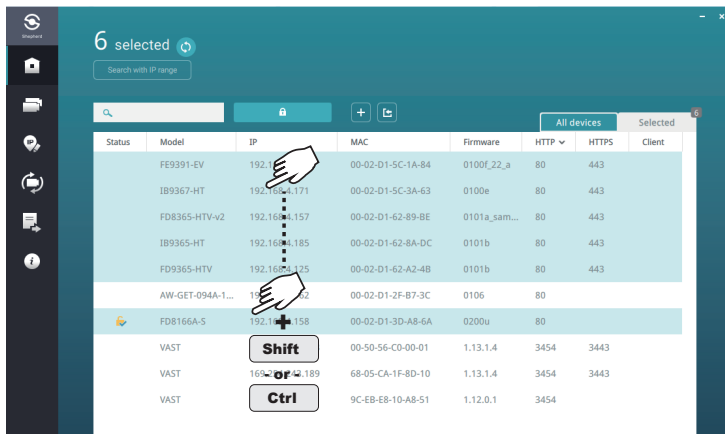
- To start using the Shepherd utility, you can select one or multiple cameras to create a new template, and then edit the detailed parameters. If you already have a standard template, you can import the template and then apply it to one or multiple cameras.



VAST server and NVR will also appear on the device list. However, they can not be selected for configuration.

II. Configuration Procedure

1. A few seconds after the utility is started, all cameras in the same subnet should be listed on the home page. Shepherd can locate cameras residing in the same network section having the same first two address octet values, such as "172.18.x.x."
2. You can then use the combination of mouse clicks and the **Shift** or **Ctrl** keys to select one or multiple cameras.



Status	Model	IP	MAC	Firmware	HTTP	HTTPS	Client
	FE9391-EV	192.168.4.171	00-02-D1-5C-1A-84	0100f_22_a	80		443
	IB9367-HT	192.168.4.157	00-02-D1-5C-3A-63	0100e	80		443
	FD8365-HTV-v2	192.168.4.157	00-02-D1-62-89-BE	0101a_sam...	80		443
	IB9365-HT	192.168.4.185	00-02-D1-62-8A-DC	0101b	80		443
	FD9365-HTV	192.168.4.185	00-02-D1-62-A2-4B	0101b	80		443
	AW-GET-094A-1...	192.168.4.152	00-02-D1-2F-B7-3C	0106	80		
	FD8166A-S	192.168.4.158	00-02-D1-3D-A8-6A	0200u	80		
	VAST		00-50-56-C0-00-01	1.13.1.4	3454		3443
	VAST	169.254.x.x.189	68-05-CA-1F-8D-10	1.13.1.4	3454		3443
	VAST		9C-EB-EB-10-A8-51	1.12.0.1	3454		



Ctrl + A to select all cameras.


You can access the cameras outside your current subnet by manually entering their IP address.



If you have a **Device list** you previously exported to the computer, you can also use the Device list to quickly access the cameras saved into your configuration profile. A Device list created on another Shepherd instance in a different subnet can also be used for access to the cameras in a different subnet.

You can use the **Selected** tab to check the statuses of all selected cameras.

Each connected camera will be displayed with the following information:

Status: An online icon  is displayed when the camera is connected. This icon will be absent if the Shepherd utility cannot connect the camera.

Model: The camera's model name.

IP: The camera's IP address. Note that if cameras cannot acquire IP addresses from a DHCP server, the cameras will assume the default 169.254.x.x addresses.

MAC: The MAC address that comes with the camera.

Firmware: The firmware revision number.

If you need to open a web console with a camera, double-click on the camera's entry on the list.

Status	Model	IP	MAC	Firmware	HTTP	HTTPS	Selected Client
	MD8163-EHF2	172.18.1.204	00-02-01-42-47-C7	0104b	80	443	
	MD8163-EHF2	172.18.14.27	00-02-01-45-07-92	0103d	80	443	
	MD8163-EHF4	172.18.201.35	00-02-01-3F-46-29	01004	80		
	MS8391-EV	172.18.2.129	00-AB-CD-AA-FF-23	0101a	80		
	MS8391-EV	172.18.110.74	00-02-01-3F-05-1C	0102c	80		
	MS8391-EV	172.18.150.46	00-02-01-3A-54-8B	0100a2	80		
	MS8390-HV	172.18.110.90	00-02-01-66-38-6D	0100q	80	443	
	NM817W	177.18.1.741	00-03-01-6E-6F-11	3.9.0.7	80	443	1674



Double-click to open a web console to a camera. The default browser is IE. Use the F10 key to open the web console with the system's default browser.

The **HTTP**, **HTTPS**, and **Client** port number will display at the end of row. VIVOTEK NVRs allow access from the VAST CMS software or iViewer. The Client port displays the port number for access. The Client port displays for NVRs running firmware rev. 2.2.0.1 and later.

With many cameras in the subnet, you can use the search panel to locate specific cameras:

1. By entering a part of their model names, such as:

- "IP" for VIVOTEK's outdoor bullets or box cameras.
- "FD" for fixed dome,
- "SD" for speed dome,
- "IB" for later outdoor bullets, etc.

Any alpha-numeric characters in the model name can be used as the search condition.

2. The list of cameras can also be narrowed down using IP address as the search condition; e.g., entering **172.18.202.x**. Only the cameras with the same Class C addresses will be listed.

3. MAC address and firmware revision number can also be used, provided that a dash, "-", should be used between every dual digits in the MAC, e.g., "**31-b4**."

4. You can combine the search conditions using a space.

For example, enter "**202.x IP83**", and then only the cameras belonging to the **IP83xx** series in the **172.18.202.x** subnet will be listed.

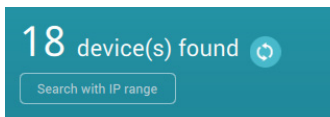
You cannot directly manage a VIVOCam PoE switch. However, you can search and then double-click to open a web console with it.



Shepherd automatically detects screen resolution and chooses the appropriate display size. If you want to manually change the display resolution, e.g., using a small window on a 4K monitor, press the **F11** key to change the resolution.

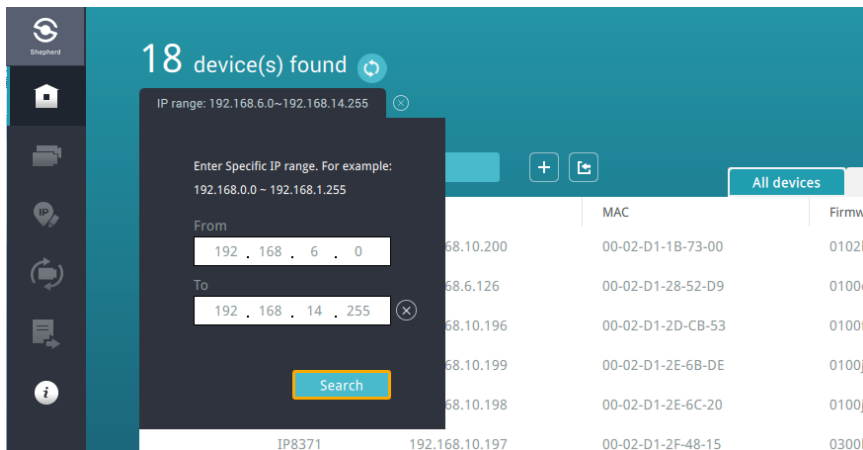
Shepherd window size	Monitor resolution
800 x 600	W1112 x H768
1112 x 768	Normal display condition
2227 x 1533	W3840 x H2000.

IP range search



The Search with IP range function can search within a network section having the same first two address octet values, such as "172.18.x.x." Default is 0.0.0.0. You should manually enter the IP address, and choose to enter an end range. Note the following when using the search function:

1. When using a single subnet as a search condition, you can enter the asterisk mark, "*", as the search condition; e.g., [192.168.6.*](#).
2. Use the **Tab** key to move from one octet value to another.
3. You can search across multiple subnets by specifying a From and a To addresses; e.g., [From - 192.168.6.0](#) and [To - 192.168.40.255](#).
4. If the From and To addresses are used to search across multiple subnets, you cannot use the * mark.
5. You can specify [172.*.1.1](#) as the IP range. Then all devices between 172.0.1.1~172.255.1.1; namely, 172.0.1.1, 172.0.1.2 , to 172.254.255.255, 172.255.1.1 will be listed.
6. You can not leave any of the octet fields empty.

A screenshot of a network management interface. A search dialog is open, showing the IP range "192.168.6.0~192.168.14.255". The dialog prompts the user to "Enter Specific IP range. For example: 192.168.0.0 - 192.168.1.255" and has fields for "From" (192.168.6.0) and "To" (192.168.14.255). A "Search" button is at the bottom. In the background, a table shows search results with columns for IP address, MAC, and Firmw. The table has a "All devices" button above it.

	MAC	Firmw	
58.10.200	00-02-D1-1B-73-00	0102I	
58.6.126	00-02-D1-28-52-D9	0100I	
58.10.196	00-02-D1-2D-CB-53	0100I	
58.10.199	00-02-D1-2E-6B-DE	0100J	
58.10.198	00-02-D1-2E-6C-20	0100J	
IP8371	192.168.10.197	00-02-D1-2F-48-15	0300I

Note that a large IP range takes longer for the utility to display the search result. If a range is larger than 100,000 addresses, search will be abandoned.

For cameras protected by preset passwords, left-click to select it and click the **Authorize** button. This authorizes the access to the camera for it to be selected for further configuration.

Without the Authorization, you will be prompted for a password every time you select the camera for configuration.

The screenshot shows a web interface with a teal header. At the top left, it says "12 device(s) found" with a refresh icon. Below this is a search bar with the placeholder "Search with IP range". A table lists camera details with columns for Status, Model, IP, MAC, and Firmware. An "Authorize all" dialog box is overlaid on the table, containing fields for "User name" and "Password", and an "Apply" button.

Status	Model	IP	MAC	Firmware
	FD8137H			0100b
	IP816A-LPC			0200b
	FE8191			0100f
	IB8382-T			0100g
	SC8131			0100d
	FE8182	169.254.140.163	00-02-D1-36-8C-A3	0100e

Without the authorization, the credential prompt will appear every time the camera is selected for any of the functions.


Not that only the following alpha-numeric characters are supported for passwords:



a-z, A-Z, 0-9, !\$%-.@^_~

The dialog box has a title bar that says "Authorize 1 device(s) before setup". It displays the camera's IP address (169.254.197.14), model (FD8137H), and MAC address (00-02-D1-24-C5-0E). Below this, there are input fields for "User name" and "Password", and an "Apply all" button at the bottom.

The following characters can not apply in all functional configuration windows:

” “ < > & = ; | `

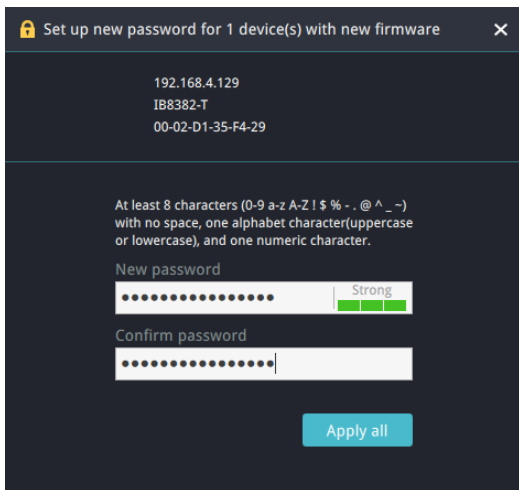
Once authorized, an online  icon appears at the front of the cameras. You can authorize multiple cameras at one time.

Status	Model	IP	MAC	Firmware
	AW-GET-094A-1...	192.168.4.162	00-02-D1-2F-B7-3C	0106
	FD8166A-S	192.168.4.158	00-02-D1-3D-A8-6A	0200u
	FE9391-EV	192.168.4.116	00-02-D1-5C-1A-84	0100f_22_a
	IB9367-HT	192.168.4.171	00-02-D1-5C-3A-63	0100e
	FD8365-HTV-v2	192.168.4.157	00-02-D1-62-89-BE	0101a_sam...
	IB9365-HT	192.168.4.185	00-02-D1-62-8A-DC	0101b

Forceful Password Configuration

When you impose a new password to one or multiple cameras (the Authorize function), Shepherd will prompt for a password configuration for security concerns.

Enter the combination of alphabetic and numeric characters to fulfill the password strength requirement. The default name for the camera administrator is “root.”



Set up new password for 1 device(s) with new firmware

192.168.4.129
IB8382-T
00-02-D1-35-F4-29

At least 8 characters (0-9 a-z A-Z ! \$ % - , @ ^ _ ~) with no space, one alphabet character (uppercase or lowercase), and one numeric character.

New password

Confirm password

Apply all

Some, but not all special ASCII characters are supported: !, \$, %, -, ., @, ^, _, and ~. You can use them in the password combination.

Passwords must be at least 8 characters in length. The combinations of alphabetic and numeric characters determine the strength of your passwords. The more complicated or more random the combination, the higher the strength. At least 1 upper case, numeric, and special character must be embedded somewhere in the middle of the password.



IMPORTANT:

All functional windows under the Home page will only become usable when at least one camera is selected.

	Home
	Batch camera setup
	Assign IP automatically
	Maintenance
	Export device list & debug report
	Information



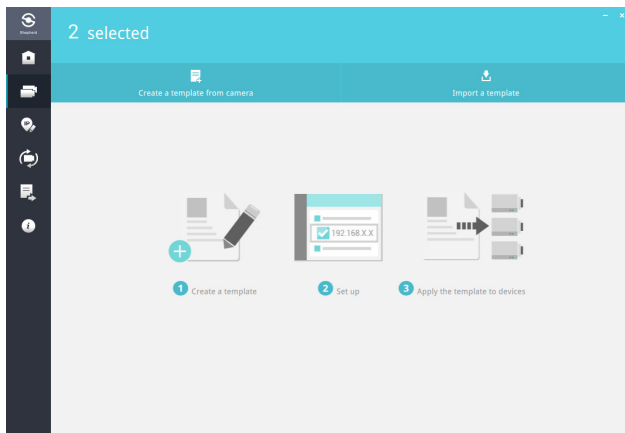
NOTE:

- Cameras of different models and firmware can be selected for the configuration.
- When parameters have been changed, such as those for Audio or Stream settings, all applicable changes will be applied to all selected cameras. For changes that cannot be applied to specific cameras, e.g., changing a video stream to MPEG-4 on a model that does not support MPEG-4, the changes will be automatically ignored.

4. With selected cameras, you can start configuring camera parameters, IP addresses, upgrade firmware, reset, restore, etc. Click on the functional icons on the left of the screen.

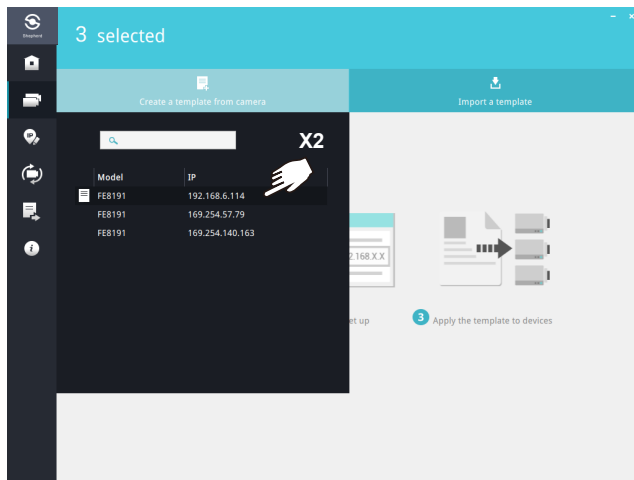
Click on **Batch camera setup** on the left panel.

Click on **Create a template from camera**; or, if you already have a template, click on **Import a template**.

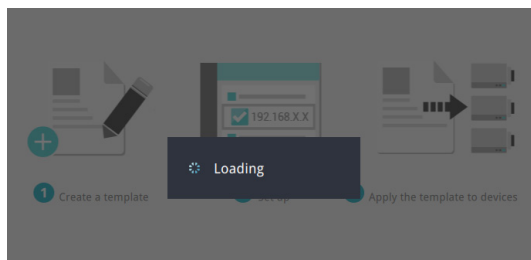


5. Select one camera from the drop down list. Double-click to select a camera. Configuration will begin using the camera's configuration profile. The parameters should only be modified by experienced users.

Note that not all camera parameters can be accessed from Shepherd.



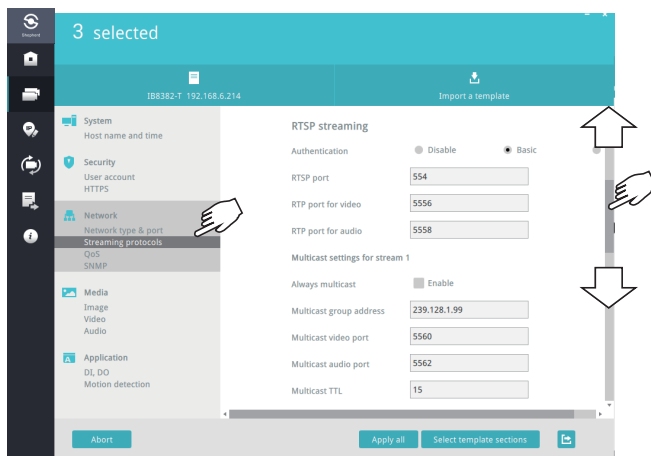
It takes a short while to access and retrieve the camera's configuration.



6. The configuration page will appear with sub-windows starting from System, Security, Network, Media, and Application.

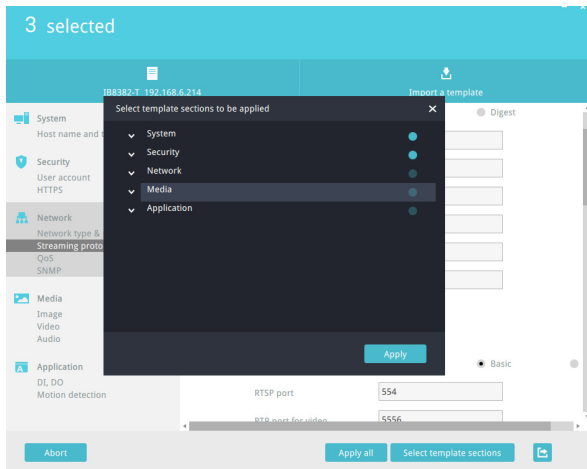
For details about each configurable option, please refer to the documentation that came with each camera.


The sub-windows contain numerous options. Use the scroll bar on the side to access all of the options.



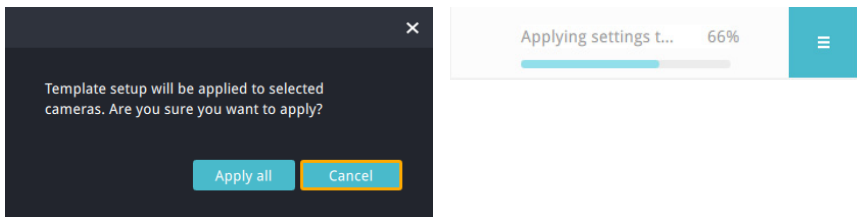
Note that for cameras that support Smart Stream II, the Smart Codec configuration only supports the Auto Tracking mode. The Manual mode and Hybrid mode are not configurable on Shepherd.

You may not need to apply all parameter changes to cameras. When applying changes in parameters, you can use the **template section** selector at the bottom of the screen to designate the sections to apply.




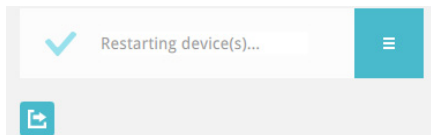
7. When you finish editing the configurable parameters, click the **Apply all** button to apply changes to selected cameras, or click the **Export**  button to save changes to a template. The camera configuration template will be saved in a csv (Comma Separated Values) file.

To abandon the changes, click the Abort button.



If problems occur when applying the changes, e.g., due to a connection problem, you can use the restart button to retry the apply process.

You may then return to the Home page, or click the **Export**  button to save your configuration changes. .

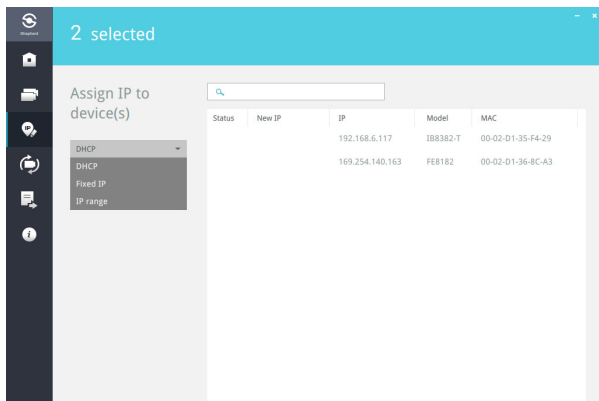


Assign IP

In here, you can assign IP addresses to one or multiple devices.

- IPs can be obtained automatically from a DHCP server.
- IPs can be assigned with an IP address range.

Note that when manually assigning a fixed IP, you should select only one camera.



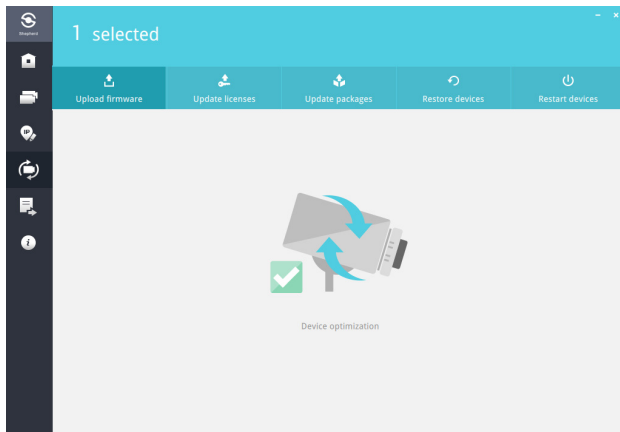
Consult your network administrator for network settings. Also ensure the correct Gateway and DNS server addresses are provided.

Maintenance

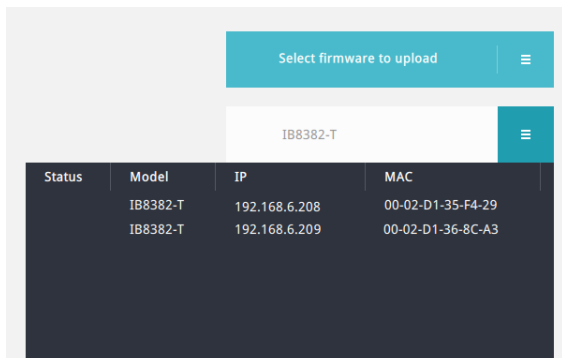
One or more cameras can have its firmware, license, and packages (VCA packages, such as line/field detection, or people counting) updated via this page. Cameras can also be reset or restored to its defaults.

Select the cameras to be configured from the home page, click on the **Maintenance** button, and then click to perform one of the update functions from the top menu.

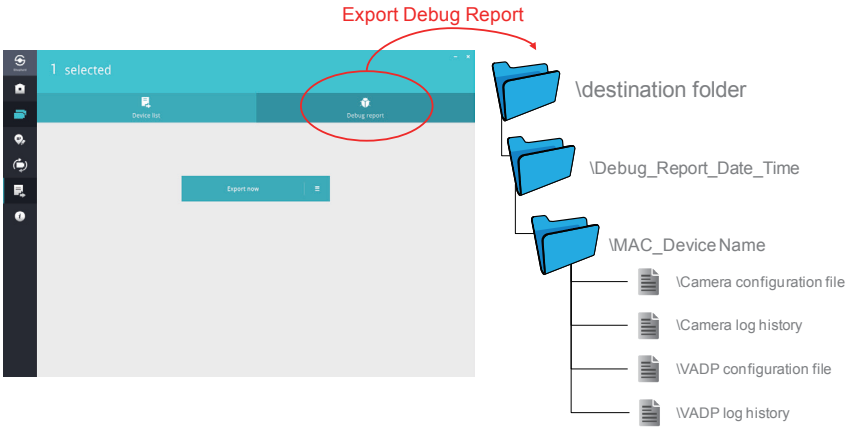
Please note that the firmware, software license, and software packages should be manually downloaded to the client computer running this utility. The Shepherd utility does not automatically search for the latest updates.



Select a firmware/software file for the listed model on screen. If you have multiple cameras of the same model, they will be listed using the List button on the right. You can then upload their firmware at the same time.

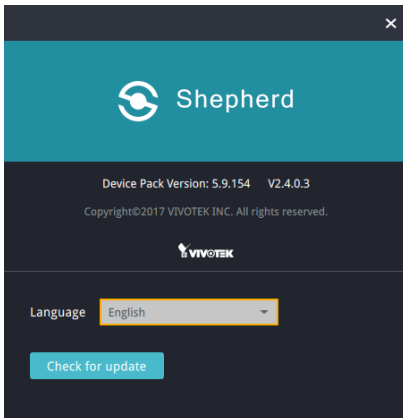


The debug report contains the following:



Information

The information page provides access to the UI text Language selector and an automatic update search button for the utility.



Device Pack

To update a device pack that contains information for the latest VIVOTEK cameras,

1. Download the latest device pack (*.vdp) from VIVOTEK website.

The screenshot shows the VIVOTEK website's Downloads section. The VIVOTEK logo is at the top left, with the tagline "BUILT WITH RELIABILITY". Navigation links include Products, Support, Downloads (highlighted with a red box), Solutions, Learning Center, and Where to buy. Below the navigation is the "VIVOTEK Downloads" heading. A filter bar contains "Reset", a search icon, "Filter by Model", "Software" (dropdown), "Filter by", "Filter by Date", and "Sort by" (dropdown). The main content area displays four download options, each with an icon, title, and "All Files >" button:

- Design Tool App: All Files >
- Device Pack: Ver. 5.9.32 2015.12, Ver. 5.9.34 2015.12, All Files >
- EZConnect App: All Files >
- IPVSDT: Ver. 8 2015.11, All Files >

2. Save the file and decompress it to the same folder where the Shepherd.exe file is located. Re-start the Shepherd utility. The Shepherd utility will automatically accommodate the latest parameters brought by the device pack file.