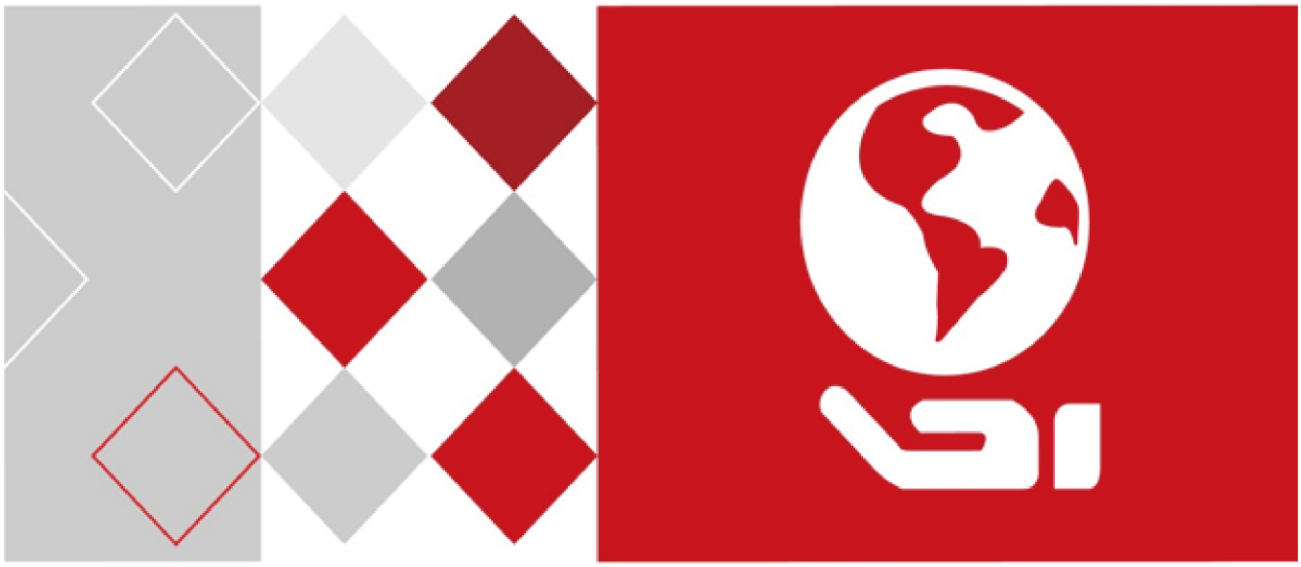

MVS Client Software

User Manual

UD08115B

User Manual

About this Manual

This Manual is applicable to MVS Client Software.

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website (http://overseas.hikvision.com/en/).

Please use this user manual under the guidance of professionals.

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Table of Contents

Chapter 1 Overview

1.1 Introduction

MVS client software is designed for managing the machine vision cameras. It supports functions of live view and capture, parameter configuration, camera upgrading, etc.

1.2 Key Features

- **Interface for Friendly User Experience:** Provide a fully visual and interactive user interface which focuses on user experience. Provide multiple accesses for one operation to reduce the steps and realize easy operation.
- **Simple Interface:** Easily access the functions such as embedded information, features, log and messages when needed, which makes the display interface clear and simple.

1.3 Running Environment

- **Operation System:** Ubuntu 12.04/14.04 (32-bit and 64-bit), CentOS 7 (32-bit and 64-bit), Red Had Linux 7 (64-bit).
  Notes: If you need to use U3V camera, Linux kernel version 3.13X or above is recommended.
- **CPU:** Intel Pentium IV 3.0 GHz or above
- **Memory:** 1 GB or above
- **Display Resolution:** 1024×768 and above
- **NIC:** Intel Pro 1000/I210/I340/I350 (recommended)
- **USB 3:** Industrial personal computer or PC should support USB 3.0 interface.

Notes:

- We recommend you to add the software to the whitelist of the antivirus software, in case of being recognized as virus.
- USB 2.0 interface is not supported.

Chapter 2 Installing and Running the Client Software

2.1 Installing the Client Software

Perform the following steps to install the client software.

Steps:

1. Decompress the installation package.
2. In the decompressed file, open the file named INTSTALL.
3. Follow the introductions to install the client software.

2.2 Running the Client Software

After installation, perform the following steps to run the client software.

Note: As the steps for running the client software in different Linux systems are similar with each other, here we only take the steps of running the client software in CentOS 7 system as an example.

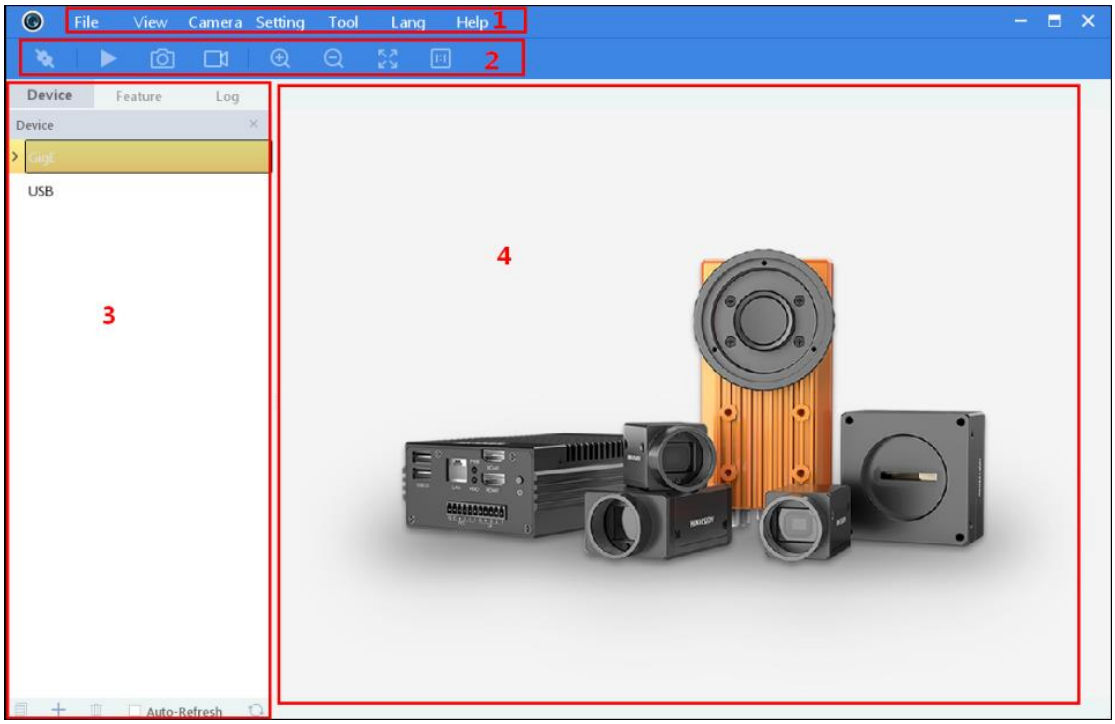
Steps:

1. Click **Application > Terminal** to open the Terminal.
2. Execute the command *sudo su* or *su root* on the Terminal.
3. Input the password of your Linux account on the Terminal.
4. Input *cd /opt/MVS/bin* and execute the command.
5. Execute the command *./MVSPlayer* to run the software client.

Chapter 3 Interface Introduction

3.1 Main Interface

The main interface of the client software is shown as follows.



No.	Area Name	Description
1	Menu Bar	Function modules including File, View, Camera, Setting, Tool, Language, and Help. For details, see *Chapter 3.2 Menu Bar*.
2	Control Toolbar	Control the image of live view including starting/stopping live view, zooming in/out, recording, capturing, etc. For details, see *Chapter 3.3 Control Toolbar.*
3	Operation Panel	Display the online machine vision cameras in the same local subnet with the client software, as well as the the features and log of the camera. Provide the auto-refresh function and manual refresh function to refresh the device tree. Provide user level settings on the feature tree page. See *Chapter 6.2 Feature Tree Manangement* for details.
4	Live View Window	View the live video of the selected machine vision camera.

3.2 Menu Bar

The menu bar is shown as follows:

File	**Exit**	Exit the client software.
	Capture and Save	Capture and save pictures during live view. ***Note:*** See *Chapter 7.2 Capturing and Recording* for details.
View	**Zoom in**	Zoom in the image during live view.
	Zoom out	Zoom out the image during live view.
	Fit to Window	Resize the image to fit to the displaying window.
	Actual Size	Display the image in its actual size.
	Display Mode	During live view, control the display of live view image. You can select 30 fps, 60 fps, and Disable Display. For Disable Display mode, it can get stream without calling the display module, which can reduce CPU usage.
	Feature	Display the feature tree page on the interface.
	Log	Display the log page on the interface.
	Embedded Information	Display the embedded information on the interface, including Timestamp, Gain, Exposure, Brightness, White Balance, Frame Number, Triggering Number, Alarm Input/Output and ROI. ***Notes:*** ● You can select parameters to show as embedded information. See *Chapter 5.2.2 Configuring Features via Menu Bar* for details. ● For mono camera, the white balance information is not supported.
	Device	Display the device tree page on the interface.
	Control Toolbar	Display the control toolbar on the interface.
Camera	**Add Remote Camera**	Add camera manually which is not in the same subnet with the computer running the client.
	Disconnect Camera	Disconnect the selected camera.
	Start/Stop Acquisition	Start acquiring the streams to view the live view. Stop acquiring the streams to stop viewing live view.
	Start/Stop Recording	Start/Stop recording during live view.
	Add Remote Camera	Add remote camera to the client software.
	Import Features	Import the file (in XML format) containing normal features to the selected cameras from the local PC. ***Notes:*** ● You should connect the camera and stop live view before importing features. See *Chapter 7 Live View* for details about connecting camera and live view. ● Only when the models of the two cameras are the same can the features of the source camera be imported to the target camera.
	Export Features	Export the selected camera's normal features as XML file

		to the local PC. ***Notes:*** ● You should connect the camera and stop live view before exporting features. See *Chapter 7 Live View* for details about connecting camera and live view. ● You can view and edit the exported XML file as needed.
	Save GenIcam XML	Export the information of the the camera as XML file for secondary development.
Setting	**Feature**	View and set the selected camera features. ***Note:*** See *Chapter 5.2.2 Configuring Features via Menu Bar* for details.
	Option	Set the general parameters, recording parameters, capturing parameters, network parameters, and buffer parameters. ***Note:*** See *Chapter 4.2 Software System Configuration* for details.
Tool	**IP Configurator**	Set the selected camera's IP address and other network parameters. ***Note:*** See *Chapter 5.1 Configuring Camera IP Address* for details.
	Firmware Updater	Update the firmware of the camera via the client software. ***Note:*** See *Chapter 8 Camera Firmware Updating* for details.
Lang	**English**	Switch the software language to English.
	Chinese	Switch the software language to Chinese.
Help	**User Manual**	Open the user manual of the client software.
	About	View the client software information including name and version.

3.3 Control Toolbar

The buttons on the control toolbar can control the live view of the camera.

	Connect Camera **Disconnect Camera**	Connect/disconnect the selected camera in the device tree.
	Start Acquisition **Stop Acquisition**	Start/stop acquiring the live view stream of the selected camera.
	Capture and Save	Capture the live view image and save it to the local PC. ***Note:*** You can set the saving path of the captured picture. See *Chapter 4.2.2 Recording Settings* for details.

	**Start Recording** **Stop Recording**	Start/Stop recording and save the video file in the local PC.
	**Zoom in**	During live view, zoom in the live view image.
	**Zoom out**	During live view, zoom out the live view image.
	**Actual Size**	Display the image in its actual size.
	**Fit to Window**	Resize the image to fit to the displaying window.

Chapter 4 System Configuration

4.1 PC System Configuration

4.1.1 Turning off Firewall

To ensure the stability of client software running and image transmission, disable the PC's firewall before running the client software.

The followings are the commands to turn off the firewalls of Ubuntu, CentOS 7, and Red Had Linux 7 respectively.

- Ubuntu 12.04/14.04/16.04 (32-bit or 64-bit)
  Command to Turn off Firewall: *ufw disable*
- CentOS 7 (32-bit or 64-bit)
  Note: CentOS 7 uses firewalld as firewall by default.
  Command to Turn off Firewall: *systemctl stop firewalld.service*
  Command to Cancel Turning on Firewall When Starting PC: *systemctl disable firewalld.service*
- Red Had Linux 7
  Command to Turn off Firewall Temporally: *systemctl stop firewalld*
  Note: If you execute this command, the firewall will be enabled after PC being rebooted.
  Command to Turn off Firewall Permanently: *systemctl disable firewalld*
  Note: If you execute this command, the firewall will remain disabled after PC being rebooted.

Here we take the operations on CentOS 7 as an example. Perform the following steps to turn off the firewall of CentOS 7.

Steps:

1. Click **Application -> Terminal** to open the Terminal.
2. Execute the commnd *sudo su* or *su root* on the Terminal to get the root permission.
3. Execute the command *systemctl stop firewalld.service* in the Terminal to disable the firewall.

4.1.2 Configuring Local Network Parameters

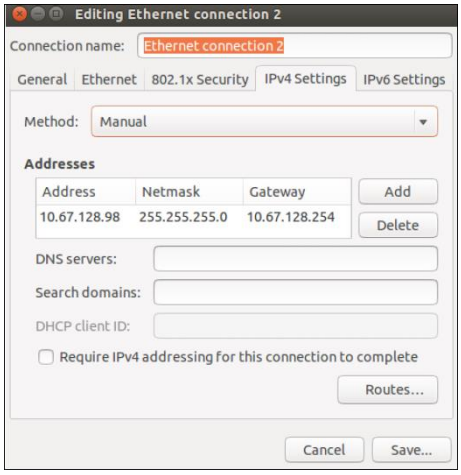
You should set the IP address of the computer running the client software to the same subnet with the camera, and enable Jumbo Frame to ensure the smooth running of the client software.

Note: As different Linux systems are similar, here we only take configuring local network parameters of Ubuntu system as an example:

Steps:

1. Configure the local network IP address.
   1) Click **System Settings -> Network -> Wired** in the PC.
   2) Select a wired network.

3) Click **Option** to open following window.



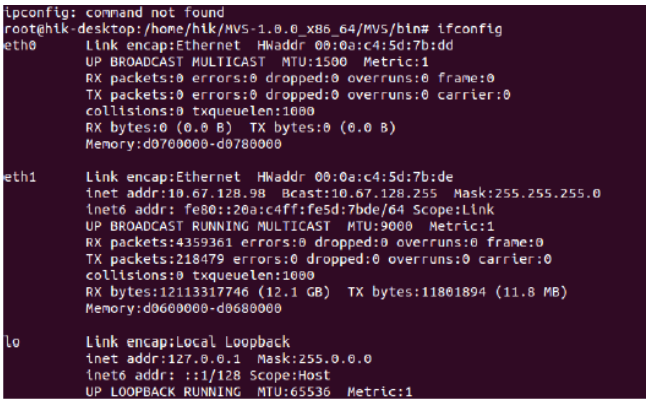
4) In the Method drop-down list, you can select to set the system to obtain IP address automatically, or set the IP address of the computer to the same subnet with the cameras on the window manually.

5) Click **Save** to save the settings.

2. Enable Jumbo Frame

1) Execute the command *sudo su* or *su root* on the Terminal to get the root permission.

2) Execute the command *ifconfig* on the Terminal to check the network status.



3) Enable Jumbo Frame temporally or permanently.

Choose from:

- Execute the command *ifconfig XXXX mtu 9000* to enable Jumbo Frame temporally.
- Execute the command *echo "9000" >/sys/class/net/XXXX/mtu* to enable Jumbo Frame permanently.

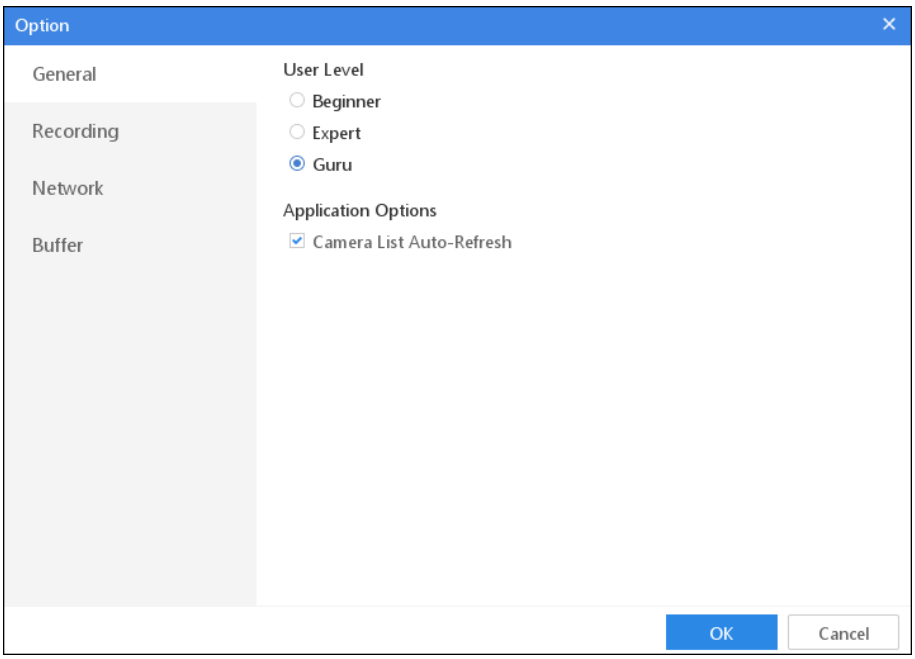
Notes:

- *XXXX* refers to the NIC connected with the camera. For example, you can input the command *echo "9000" >/sys/class/net/eth0/mtu* or *echo "9000" >/sys/class/net/eth1/mtu.*
- It is recommended to use NIC of Intel Pro 1000 series or above.
- Different NIC may have different parameters. If setting Jumbo frame is unavailable on your PC, you can update the NIC driver or change the NIC with the NIC of Intel Pro 1000 series or above.

4.2 Software System Configuration

You can configure the parameters of the software client, including the general parameters, recording and capture settings, network parameters, and buffers.

Click **Setting -> Option** on the menu bar to enter the option configuration page.

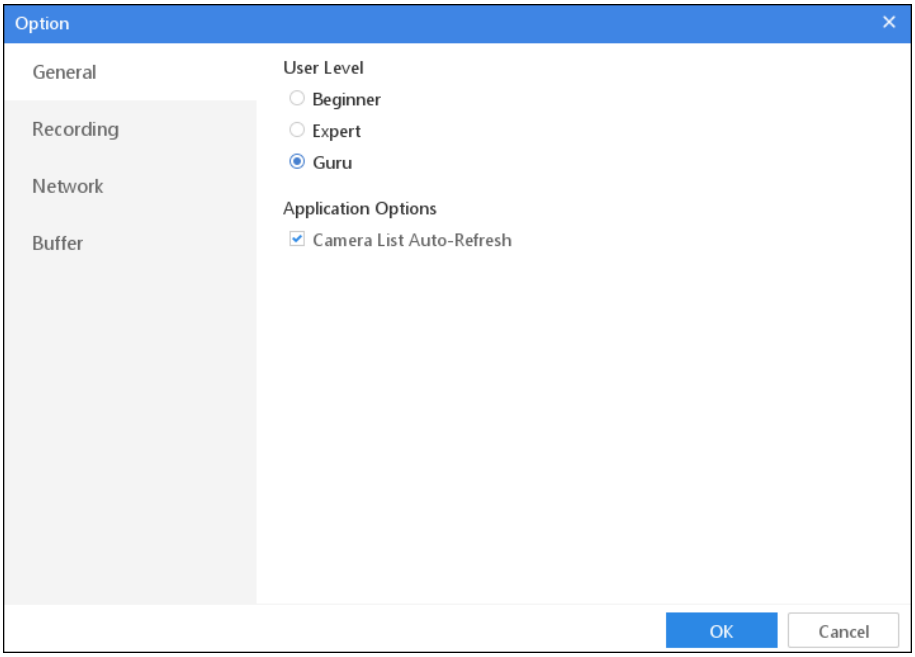


4.2.1 General Settings

You can set the general parameters, including user level and auto-refresh settings of the device tree.

Steps:

1. Click **Setting -> Option -> General** tab to enter the following page.



2. Select the user level as Beginner, Expert, or Guru. The higher the user level is, the more camera features will display.
3. To refresh the device tree and display the online cameras automatically, you can check **Camera List Auto-Refresh** to enable this function. Then the software can automatically refresh the camera list.
4. Click **OK** to save the settings.

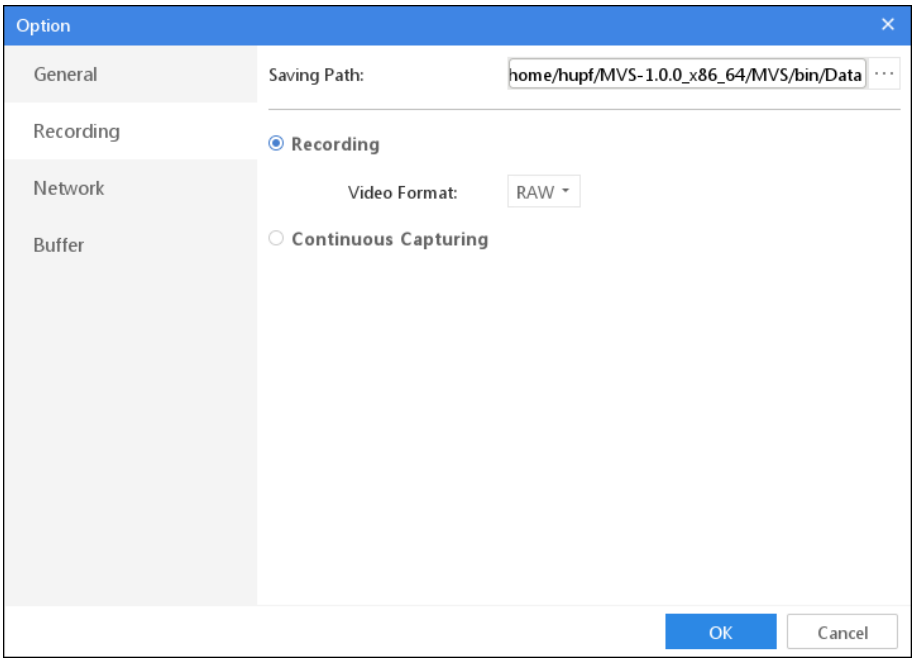
4.2.2 Recording Settings

In recording settings, you can set the recording mode as normal recording mode or continuous capturing mode.

- **Recording Mode:** After starting recording, the client will record the images as a video file.
- **Continuous Capturing Mode:** After starting recording, the client will capture the live view image as picture files continuously.

Steps:

1. Click **Recording** tab to enter the following page.



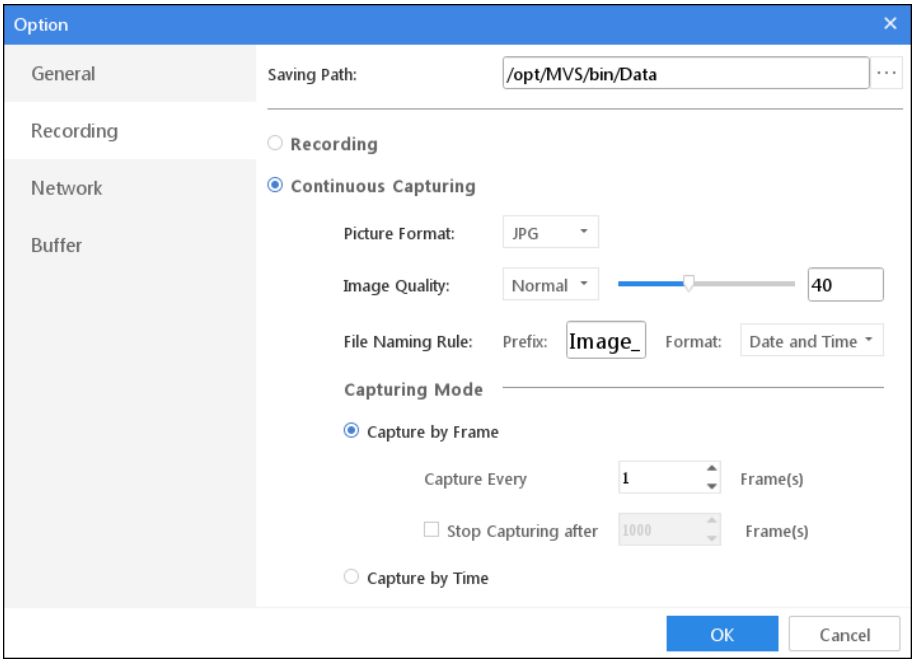
2. Click ··· to select the saving path for the recorded video or picture file.
3. Set the recording mode as **Recording** or **Continuous Capturing** as desired.

- **Recording:**

  Set the saving format of the recorded video file.

  Note: Only RAW format is supported.

- **Continuous Capturing:**



1) Select the captured picture saving format.

   You can select JPG, BMP, and RAW.

2) (Optional) Select the image quality as Normal, Better, or Best according to the actual needs If you select the format as JPG .

   You can also drag the ▽ to customize the compression ratio.

3) Custom the naming rule of the captured picture.

4) Select the capturing mode as **Capture by Frame** or **Capture by Time**.
5) Set the capturing interval for the selected mode.
6) (Optional) Enable to stop capturing after the custom frames or duration.

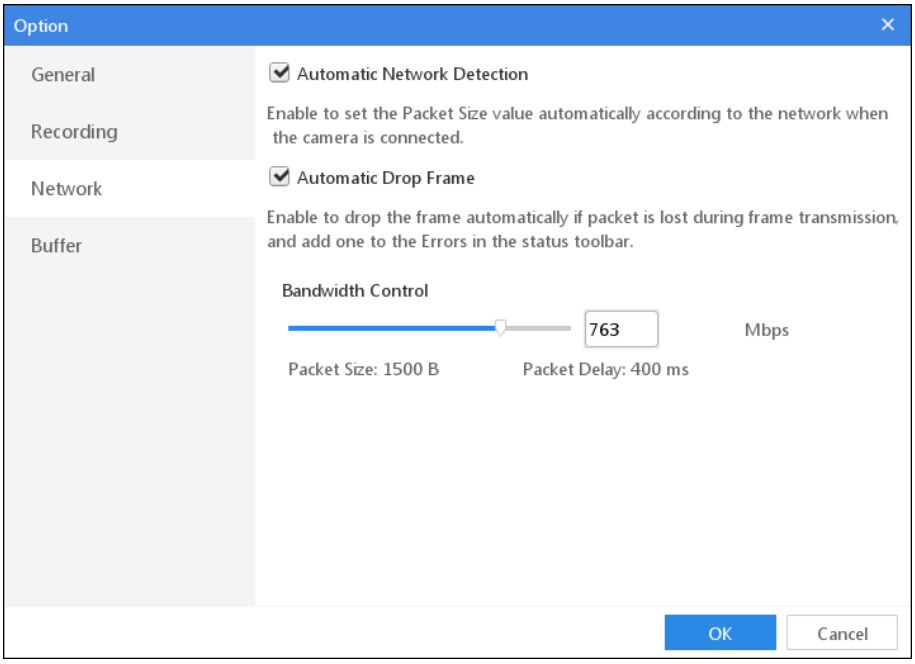
Note: For the image quality and video quality, the larger the compression ratio is, the higher the image quality will be. The compression ratio of Normal level ranges from 1 to 40, the Better level ranges from 41 to 70; and the Best level ranges from 71 to 100.

4. Click **OK** to save the settings.

4.2.3 Network Settings

Steps:

1. Click **Network** tab to enter the following page.



Note: The Bandwidth Control settings will be displayed after you connecting the camera.

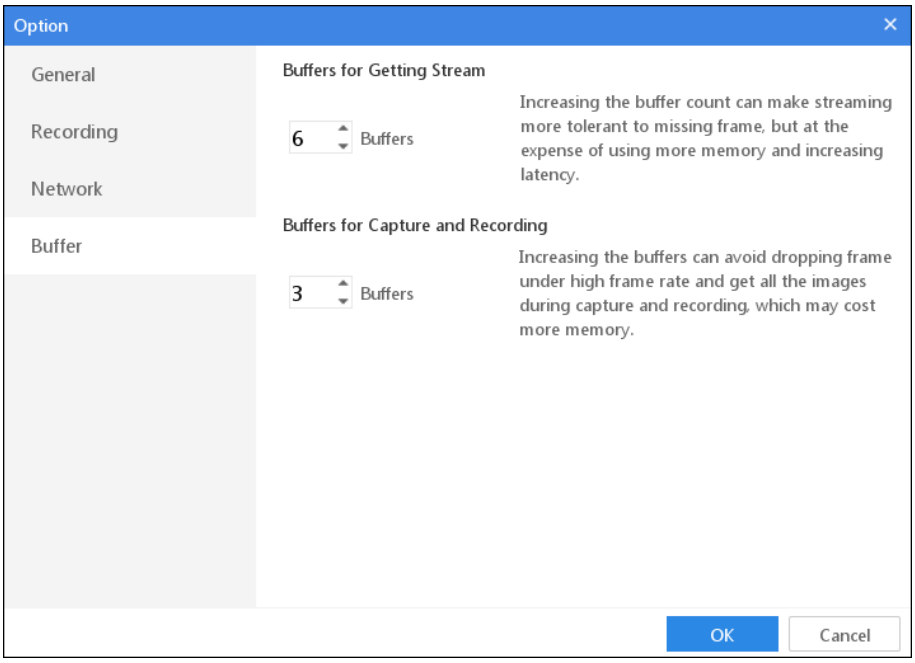
2. (Optional) Enable the **Automatic Network Detection** and **Automatic Drop Frame** function by checking the checkboxes according to the actual network environment to ensure the live view fluency.
3. (Optional) Drag the slider to adjust the bandwidth speed.

   Note: The larger the speed is, the smaller packet delay will be, and it will be more likely to cause packet loss.
4. Click **OK** to save the settings.

4.2.4 Buffer Settings

Steps:

1. Click **Buffer** to enter the following page.



2. Set the buffers used for getting stream to adjust video fluency according to actual needs.
3. Set the buffers used for capturing and recording according to the actual needs to avoid dropping frame.
4. Click **OK** to save the settings.

Chapter 5 Camera Configuration

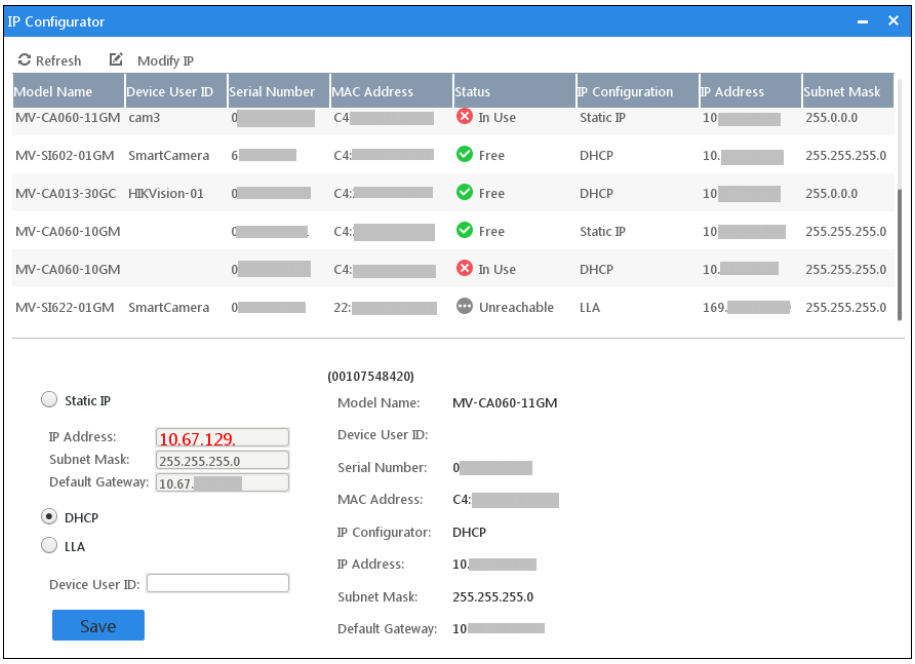
You can configure the camera IP address and camera features as desired.

5.1 Configuring Camera IP Address

Purpose:

The online cameras in the same local subnet with the PC running the software will be displayed in the Device tab. You can configure the IP address and other network parameters of these cameras. After running the software, click **Tool -> IP Configurator** to open the IP Configurator.

Note: Stop the live view and disconnect the camera before editing its network parameters.



All the detected cameras in the same subnet will be displayed on the list. You can view the camera status.

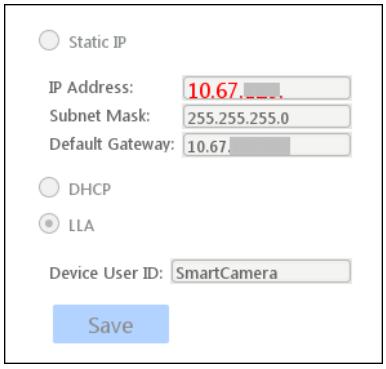
- **Free:** If the camera status is Free, the camera is available and you can edit its IP address.
- **In Use:** If the camera status is In Use, it means the client software or other processes are accessing the camera. You should stop the live view and disconnect the camera, or terminate other processes to access the camera.

  Note: See *Chapter 7 Live View* for details about live view operations.
- **Unreachable**: If the camera status is Unreachable,
  - The network of the camera is exceptional. Check the camera network settings.
  - The camera is connected in the same subnet with the PC running the software; however its IP address is not configured in the same network segment.

If the camera status is **Free**, you can edit its IP address and other parameters.

Steps:

1. Select the camera to edit in the device tree.
2. Select the IP type as Static IP, DHCP, or LLA.



For setting the IP type as Static IP, you can set the IP address, subnet mask, and default gateway.

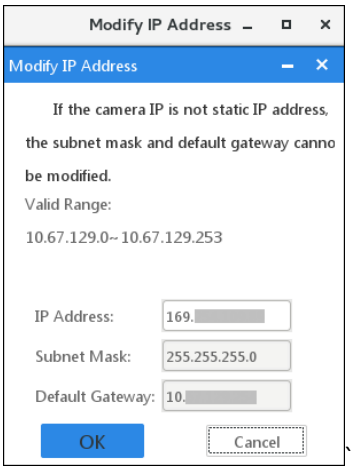
Note: The camera will reboot after you changing the IP type.

3. (Optional) Edit the the camera name in Device User ID field.
4. Click **Save**.

If the camera status is **Unreachable**, the camera is in the same subnet, while its IP address is NOT in the same network segment. You can edit the IP address and other parameters to make the camera available for use.

Steps:

1. Select the camera to be edited and click **Modify IP** button to open the Modify IP Address dialog.
2. Edit the IP address, subnet mask, and default gateway.



3. Click **OK** to save the settings.

5.2 Configuring Camera Features

The client software provides two methods for viewing and setting the camera features: via the feature list or via the menu bar.

Notes:

- For details about the camera features and functions, refer to the User Manual of the machine vision camera.
- Functions and features of machine vision cameras may be different among different camera

models. Refer to the actual user interface and the user manual of the camera for detailed information.

5.2.1 Configuring Features via Feature Tree

The software can read the feature file of camera features and display it in list format.
You can configure camera features via the feature tree. For details, refer to *Chapter 6.2 Feature Tree Manangement.*

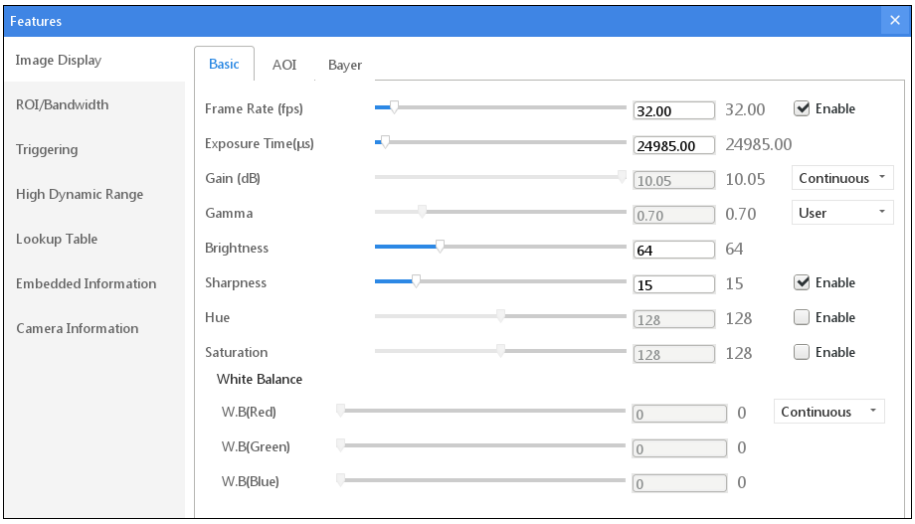
5.2.2 Configuring Features via Menu Bar

You can set the camera features via the menu bar which classifies the camera features.
Before You Start:
Connect the camera by one of the following operations:

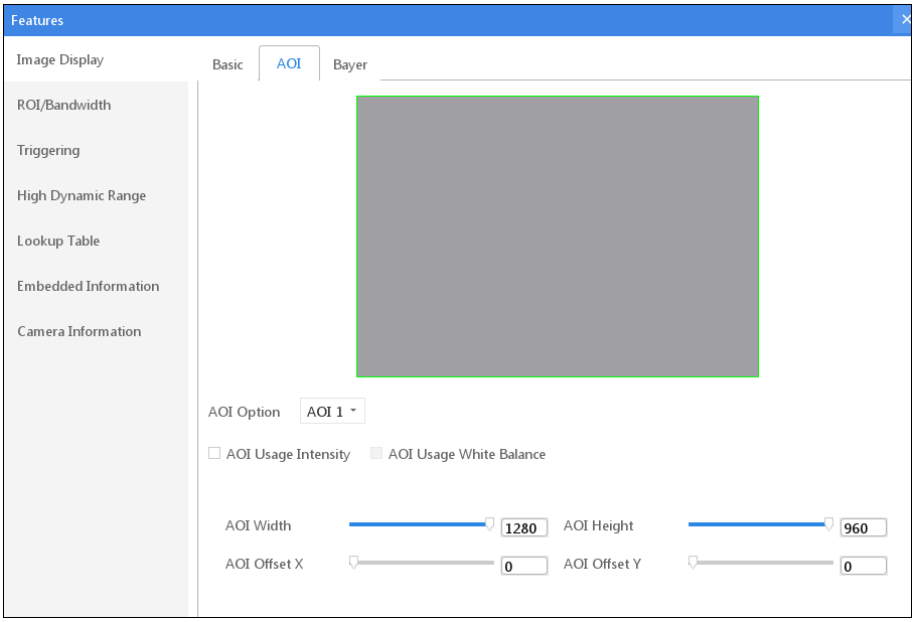
- Double-click a camera on the device tree to connect the camera.
- Select a camera from the device tree and click button on the control toolbar to connect the camera.
- Select a camera from the device tree and click **Camera -> Connect Camera** in the menu bar to connect it with the client software.

Click **Setting -> Feature** to open the Features window.
You can set the image display, ROI, bandwidth, triggering mode, high dynamic range, lookup table, embedded information and camera information.

- **Image Display Settings**



In Image Display Settings, you can set the basic image display parameters including frame rate, exposure, brightness, sharpness, white balance, etc.
You can click the **AOI** tab to set the AOI parameters.

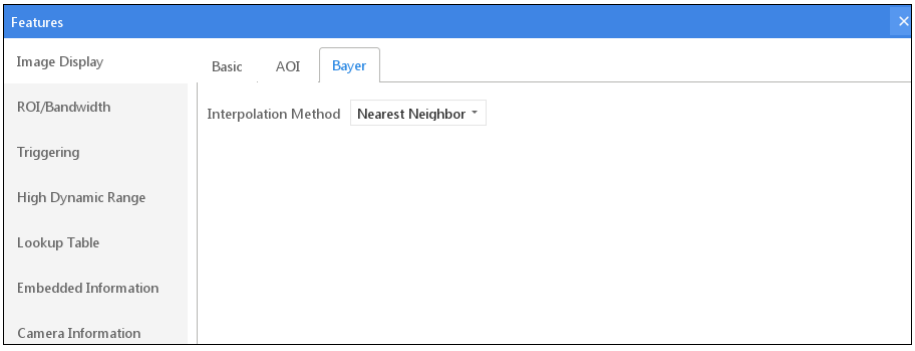


On the AOI page, you can check **AOI Usage Intensity** to enable adjusting exposure of the whole image to the same with the AOI exposure. Or, you can check **AOI Usage White Balance** to enable adjusting the white balance of the whole image to the same with the AOI white balance.
You can also drag the cursor on the display window on this page to draw the AOI.

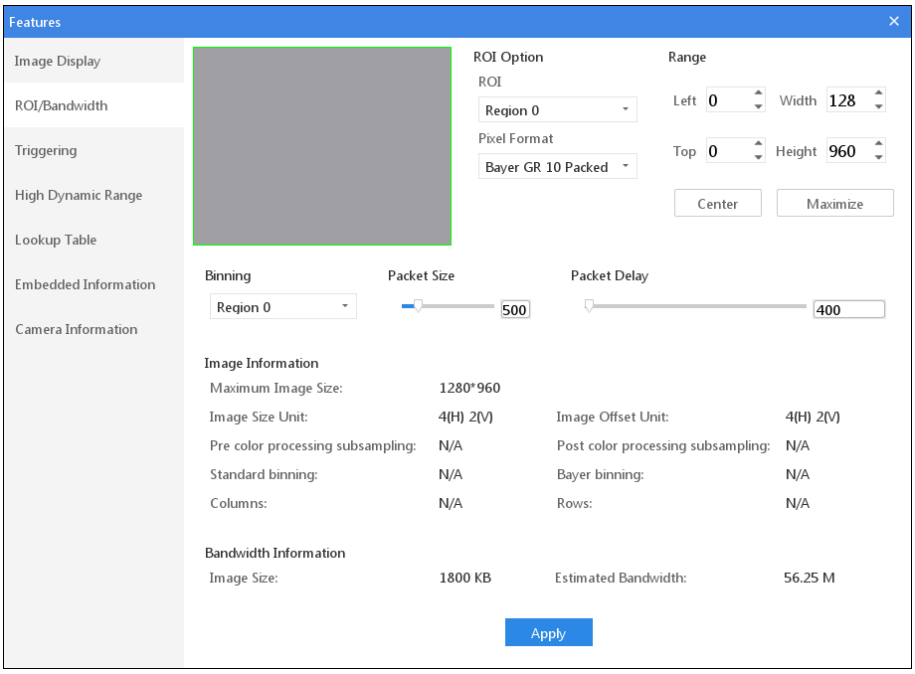
You can click the **Bayer** tab to set the interpolation method, which includes Nearest Neighbor, Bilinear, and Hamilton.
In most occasions, the nearest-neighbor interpolation or bilinear interpolation is enough for displaying quality image. While in occasions when high-quality image is required, you can set the interpolation method as Hamilton, at the expense of consuming more time and lowering the display rate.

Notes:

- You can set the Bayer parameters only when the camera supports color image and Bayer format.
- You should stop live view before you can set the interpolation method.



- **ROI/Bandwidth Settings**

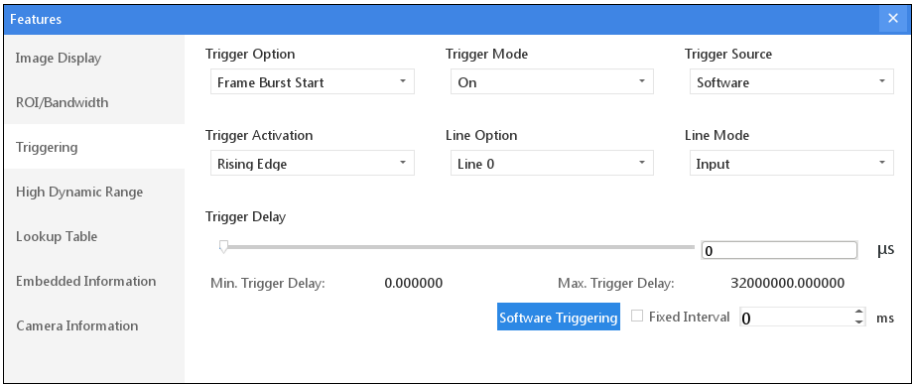


In ROI/Bandwidth Settings, you can set the ROI parameters and view the image and bandwidth information.

You can also drag the cursor on the display window on this page to draw the ROI.

Click **Apply** to apply the settings.

- **Triggering Settings**



In Triggering Settings, you can select the triggering option, and set the triggering mode and triggering source. You can also set the triggering activation mode, line option, and line mode, as well as set the delay of triggering.

You can set the time interval and check **Fixed Interval** to enabling triggering by fixed interval. You can also click **Software Triggering** to trigger manually.

Notes:

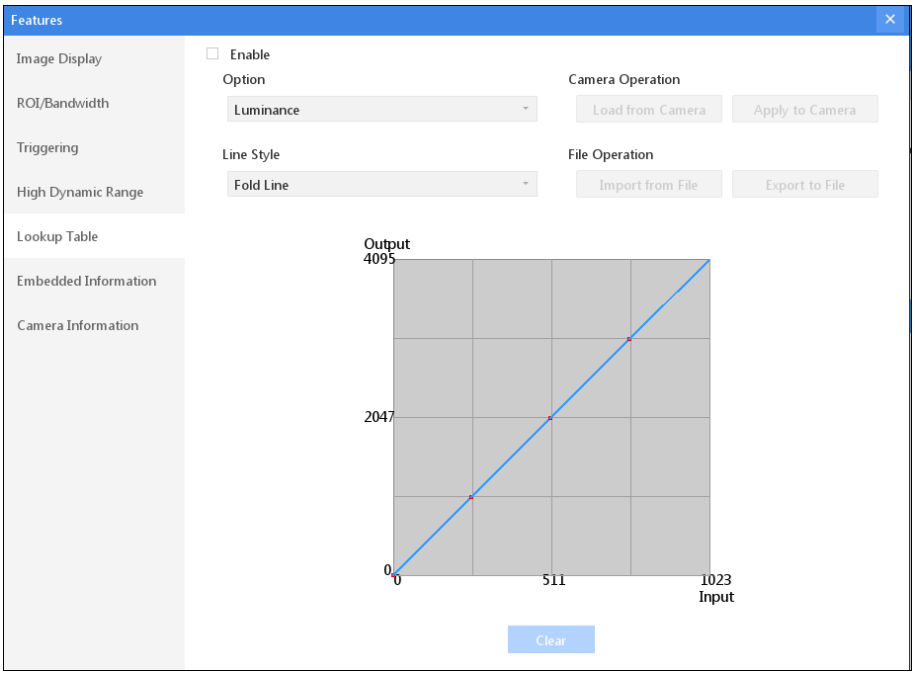
- You can set the fixed interval only when you set the triggering mode as **On** and set the triggering source as **Software.**
- The **Software Triggering** button is available only when you you set the triggering mode as **On** and set the triggering source as **Software.**

- **High Dynamic Range Settings**

In High Dynamic Range Settings, you can check **Enable** to enable or disable the high dynamic range function, and then you can set the corresponding parameters.

Note: Adjusting gain should be supported by the camera.

- **Lookup Table Settings**



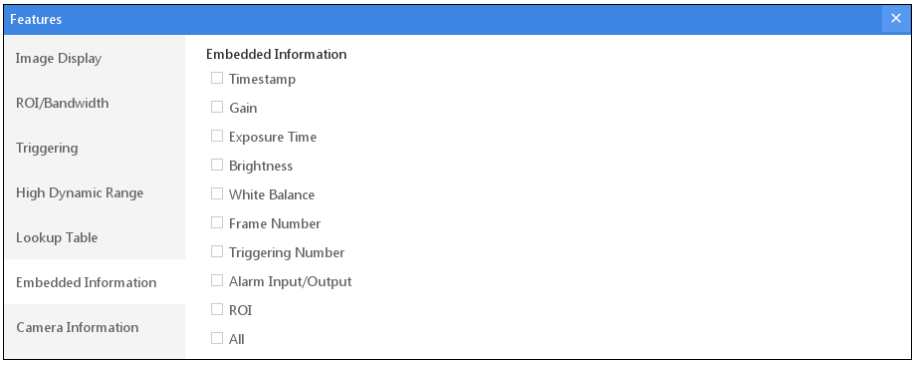
In Lookup Table Settings, you can check **Enable** to enable or disable the lookup table settings.

You can perform one or more of the following operations after enabling lookup table settings.

- Unfold the drop-down list to select the line style.
- Click **Load from Camera** to import the lookup table information of the camera to the chart on the page.
- Click **Apply to Camera** to apply the chart information to the lookup table of the camera.
- Click **Import from File** to import the lookup table information on TXT files to the chart on the page.
- Click **Export to File** to export the chart information to the Local PC as TXT files.

You can also click **Clear** to clear the settings.

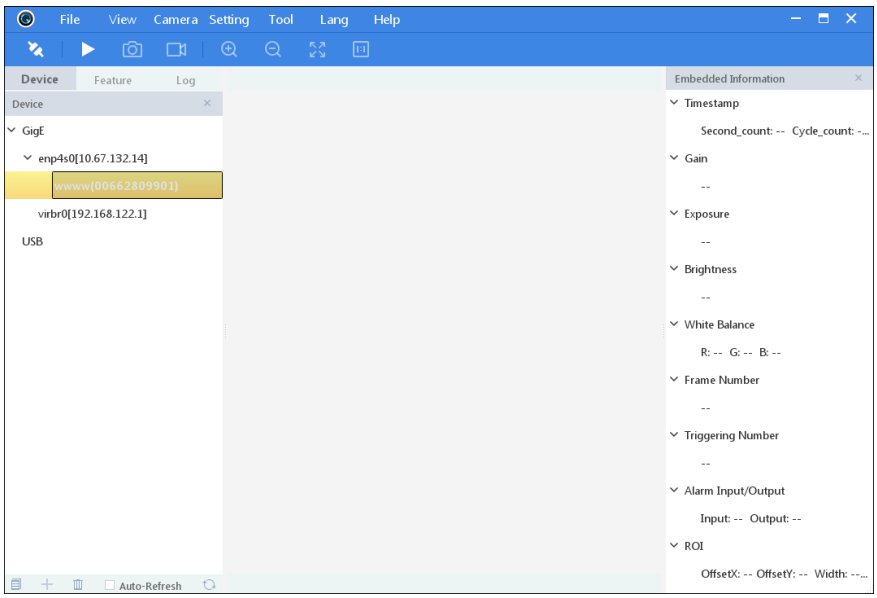
- **Embedded Information Settings**



In Embedded Information Settings, you can check the checkboxes to select the corresponding information as the embedded information.

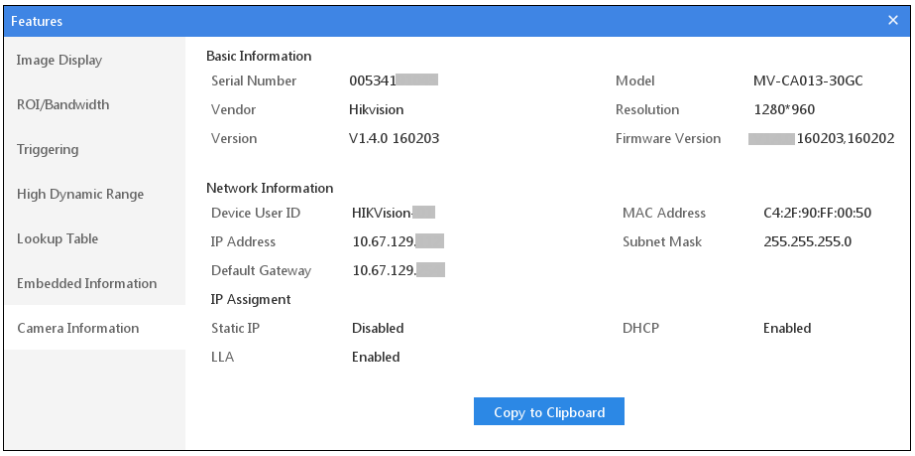
After finishing the embedded information settings, you can click **View->Embedded Information** to show the Embedded Information panel on the right side of the interface. And you can view the real-time embedded information on the panel during live view.

Note: See *Chapter 7 Live View* for details about live view.



- **Camera Information Settings**

In Camera Information Settings, you can view the camera details. You can click **Copy to Clipboard** to copy the details to the PC clipboard.


Features
Image Display
ROI/Bandwidth
Triggering
High Dynamic Range
Lookup Table
Embedded Information
Camera Information
Basic Information
Serial Number
005341
Model
MV-CA013-30GC
Vendor
Hikvision
Resolution
1280*960
Version
V1.4.0 160203
Firmware Version
160203,160202
Network Information
Device User ID
HIKVision
MAC Address
C4:2F:90:FF:00:50
IP Address
10.67.129.
Subnet Mask
255.255.255.0
Default Gateway
10.67.129.
IP Assigment
Static IP
Disabled
DHCP
Enabled
LLA
Enabled
Copy to Clipboard

Chapter 6 Operation Panel Management

You can manage the device tree, feature tree, and logs of the client software on the operation panel.

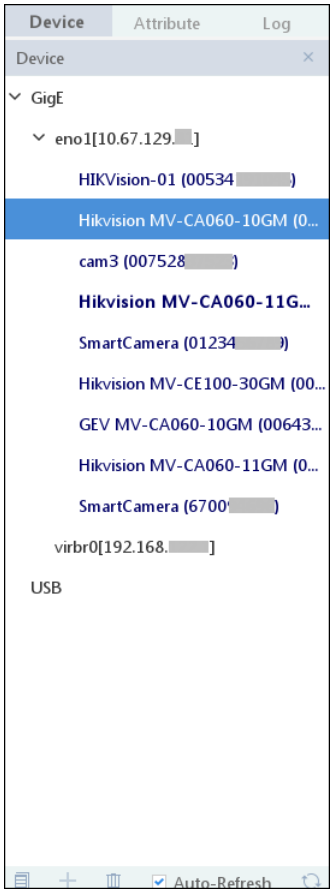
6.1 Device Tree Management

You can refresh the device tree or enable auto-refresh to display all the online machine vision cameras in the same local subnet with the client software in the Device page. You can also add camera which is not in the same subnet with the local computer.

Note: You can display or hide the device tree by clicking **View -> Device** on the menu bar.

6.1.1 Displaying Devices in the Same Local Subnet

The client software can automatically display all the online machine vision cameras in the same local subnet with the client software in the Device page. The cameras are classified into two types as follows: **GigE** and **USB**, according to the camera connection interface.



You can refresh the device tree according to actual needs.

Click  at the bottom to refresh the device tree.

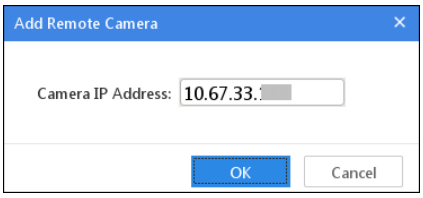
You can also check/uncheck **Auto-Refresh** to enable or disable the auto-refresh function.

6.1.2 Adding Remote Camera

You can add camera which is not in the same subnet with the local computer to the software.

Steps:

1. Right click the IP address on the device tree and click **Add Remote Camera** to open the Add Remote Camera dialog.



2. Input the camera IP address.
3. Click **OK** to finish adding.

Note: You can also select the IP address and click **Camera -> Add Remote Camera** on the menu bar to add camera which is not in the same subnet with the local computer to the client software.

6.1.3 Deleting Camera

You can right-click a specific camera and click **Delete** on the right-click menu to delete the camera from the device tree.

6.1.4 Copying Camera Information

You can copy information of a specific camera to the local PC.

Steps:

1. Right click the camera on the device tree and click **Copy Information** on the right-click menu to copy the camera information, including model, serial number, version, IP address, subnet mask, etc.

   Or select a camera from the device tree and click  at the bottom to copy the information of the camera.
2. Paste the copied information to LibreOffice Writer, LibreOffice Calc, LibreOffice Draw, etc.

6.2 Feature Tree Manangement

You can configure camera feature via the feature list.

Note: You can display or hide the feature tree by clicking **View -> Feature** on the menu bar.

Steps:

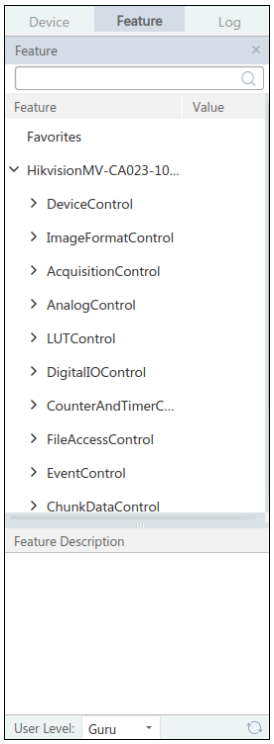
1. Double-click a camera on the device tree to connect the camera.

   You can also select a camera and click  button on the control toolbar to connect the

camera.

Or you can select a camera and click **Camera -> Connect Camera** in the menu bar to connect it.

2. Click **Features** tab to switch to the camera features page to view and edit the camera's feature tree.



3. (Optional) Set the user level as Beginner, Expert, or Guru in the bottom to manage the features according to the actual needs.

   For Guru Level, it provides the most comprehensive camera features for professional use.

   Note: We take Guru Level as an example in the next step.

4. Click ▷ before each feature to view and edit the details.

   You can also input keywords to search the feature.

- **Device Control**: In the Device Control feature, you can view the camera details including device type, version, manufacturer details, device ID, device alias, device temperature, etc. You can modify the alias and reset the device.
- **Image Format Control**: In the Image Format Control feature, you can view the live view image width and height, pixel size, etc. You can modify the pixel format, image reverse, test pattern and the embedded information, etc.

  Note: You should connect the camera (and stop acquisition) before you can modify the pixel format.
- **Acquisition Control**: In the Acquisition Control feature, you can set the trigger mode, trigger source, exposure details, etc.
- **Analog Control**: In the Analog Control feature, you can adjust the analog signal including analog gain, black level, brightness, gamma, sharpness, AOI, etc.
- **LUT Control**: In the LUT Control feature, you can view the user lookup table and set the LUT index and value.
- **Digital IO Control**: In the Digital IO Control feature, you can manage the digital input and

output.

- **Counter and Timer Control**: In the Counter and Timer Control feature, you can set the counter and timer function. It can count the triggering signal and control the exposure according to the user needs.
- **Transport Layer Control**: In the Transport Layer Control feature, you can set the parameters of transport layer of the camera.
- **User Set Control**: In the User Set Control feature, you can save or load the parameter configuration set by users. You can set the default parameters when running the software.

5. (Optional) Right-click the feature and click **Add to Favorites** to add the feature to the Favorites.

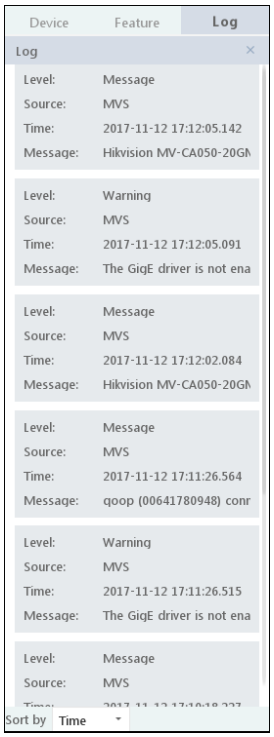
6.3 Log Management

You can sort the log as desired.

Note: You can display or hide the message log page by clicking **View -> Log** on the menu bar.

Steps:

1. Click **Log** tab to switch to the Log page.



2. Click ▼ and select **Time**, **Level**, **Source**, or **Information** to sort the message log by time, level, source, or information.

Chapter 7 Live View

You can view the live view of the cameras displayed on the device tree. And during the live view, you can zoom in or zoom out the image, capture pictures, and record video file(s).

7.1 Starting and Stopping Live View

Steps:

1. Select a camera from the device tree.
2. Connect the camera.

   Choose from:

   - Click  on the control toolbar to connect the camera.
   - Double-click the camera to connect the camera.
   - Click **Camera -> Connect Camera** on the menu bar to connect the camera.
3. Start acquiring the live view stream.

   Choose from:

   - Click  on the control toolbar to start live view.
   - Click **Camera -> Start Live View** on the menu bar to start live view.
4. Stop live view.

   Choose from:

   - Click  on the control toolbar to stop live view.
   - Click **Camera -> Stop Live View** on the menu bar to stop live view.

7.2 Capturing and Recording

During the live view, you can click  on the control toolbar or click **File -> Capture and Save** to capture picture and save the picture to the local PC.

Click  to start recording, click the icon again to stop recording.

Or you can click **Camera -> Start Recording** on the menu bar to start recording, and click **Camera -> Stop Recording** to stop recording.

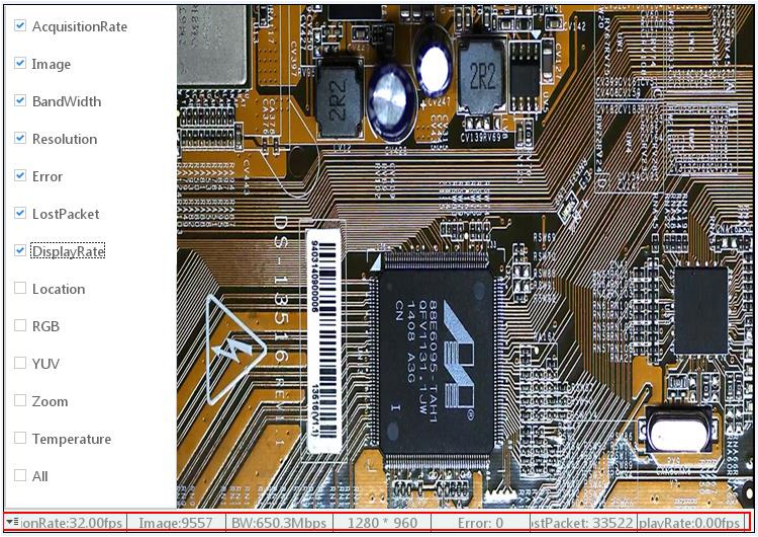
Note: You can set the saving path of the captured picture(s) and recorded video file(s). You can also set the recording mode as normal recording mode or continuous capturing mode. For details, refer to *Chapter 4.2.2 Recording Settings.*

7.3 Zooming in/out

During Live view, you can click / on the control toolbar or click **View -> Zoom in/Zoom out** to zoom in or zoom out the live view image.

7.4 Editing Status Bar

During live view, the video parameters are shown in the status bar as follows:



You can click to select the displayed parameters by checking the checkboxes. By default, all the parameters are displayed during live view in the status toolbar.

Chapter 8 Camera Firmware Updating

You can update the firmware of the camera via the client software.

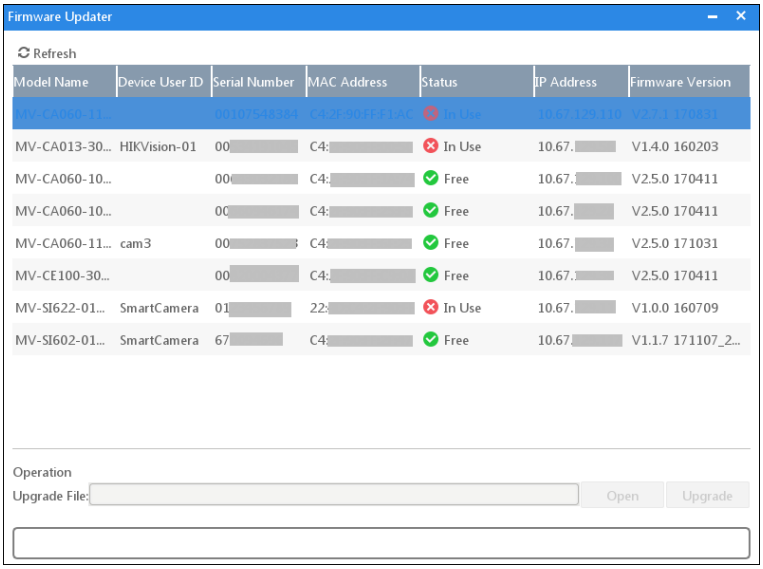
Note: You should stop live view and disconnect the camera before updating the firmware.

Steps:

1. Click **Tool -> Firmware Updater** to enter the updating page.
2. Select the camera in the device tree to upgrade.

   Note: You can only upgrade the camera in **Free** status.
3. Click **Open** button to select the upgrading file (DAV file) in the local PC.
4. Click **Upgrade** button to start upgrading.

   The progress bar will show the upgrading progress.



Notes:

- The camera will reboot itself automatically after upgrading.
- The upgrading file should be consistent with the camera model, or the system will report error during upgrading. Usually the upgrading file is named after the camera model.

Chapter 9 FAQ

9.1 Camera Disconnected or Live View Fails

If the client software cannot detect the camera, or the camera live view fails, please check:

- The NIC of the industrial personal computer or PC running the client software should support gigabiit network.
- The network between the camera and the PC or industrial personal computer is gigabit network.
- The jumbo frame is enabled. If not, enable the Jombo Frame function.
- The operation system is Ubuntu 12.04/14.04 (32-bit and 64-bit), CentOS 7 (32-bit and 64-bit), or Red Had Linux 7 (64-bit). Other operation systems are not supported currently.

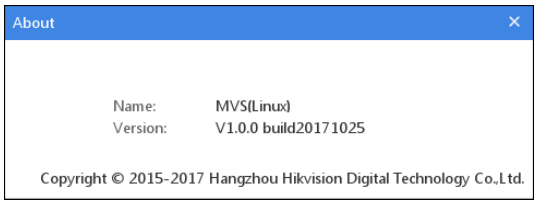
9.2 Other Questions

No.	Description	Possible Causes	Solution
1	• The client fails to detect the camera. • The client detects the camera, but fails to connect it. • The camera stays at READ-ONLY.	• The camera does not start properly. • Network cable is not connected properly. • The camera and the client software are not in the same LAN. • MVS client software is not installed correctly. • The camera has been controlled by other client software.	***Steps:*** 1. Check the power supply of the camera (LED indicator). 2. Check the network connection (Link light in LAN interface). 3. Use IP configurator to find and modify IP address. 4. Make sure your PC installs GenICam and NIC drive. 5. To solve the READ-ONLY problem, unplug network cable, and re-plug it after 3 seconds.
2	Live view shows black image.	Iris of lens is closed.	Open the iris of the lens.
		Camera exception.	Power off and reboot the camera.
3	Live view works fine. But the image cannot be triggered.	The wiring of trigger is abnormal.	Check if the camera triggering mode of current application scenario and the related triggering signal input is normal.
		Certain trigger mode is not activated.	Make sure that the wiring of the certain trigger is normal.
4	The live view and trigger works fine, but	The image output format mismatches.	Set the image output format in the client software and make it

	the algorithm cannot get the correct image.		consistent with the format which the algorithm needs.

If the above information is not helpful to your problem, please check the detailed information of your current software version and PC system, and contact our technical support for support.

Click **MVS -> About MVS** on the menu bar to get the current MVS client software version.



Chapter 10 Appendix

Revision History

Doc. ID Number	Date	Version	Changes
UD08115B	17th Nov. 2017	V1.0.0	

0300001071117

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