AS EASY AS
1, 2, 3
FREE VIRTUAL INSTALLATION SERVICE!

QUICK START GUIDE
OpenEye makes network video as easy as 1, 2, IP!

Jumping head first into the world of IP video can be a challenge. IP video involves learning and understanding countless new concepts such as networks, IP addresses, and port forwarding. If you are new to IP video it may all seem like a bit too much to handle, but don’t be alarmed, OpenEye is here to make it easy for you.

OpenEye has developed a series of IP camera kits that walk you through the installation process and help configure your system for you, drastically reducing the time and expertise needed to install an IP solution. New users and veterans alike will appreciate the time saving benefits our Easy as 1, 2, IP kits have to offer. If you do run into any problems along the way, just contact our Virtual Installation Hotline at 1-888-555-3343. We are always here to assist you!

Note: The OpenEye IP cameras in your kit are preconfigured to record 15 IPS at 2MP. Refer to the chart for the estimated recording duration based on your camera kit and the storage capacity of your recorder. These figures are estimates. Adjusting the camera settings will change the recording duration.

<table>
<thead>
<tr>
<th>Storage Capacity</th>
<th>4 Camera Kit</th>
<th>8 Camera Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 TB</td>
<td>25 Days</td>
<td>12 Days</td>
</tr>
<tr>
<td>2 TB</td>
<td>50 Days</td>
<td>85 Days</td>
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<tr>
<td>4 TB</td>
<td>100 Days</td>
<td>50 Days</td>
</tr>
<tr>
<td>6 TB</td>
<td>150 Days</td>
<td>76 Days</td>
</tr>
<tr>
<td>8 TB</td>
<td>200 Days</td>
<td>100 Days</td>
</tr>
</tbody>
</table>
Select Your Installation

The first step is to determine the proper installation type for your needs. There are three types of installations:

**Installation A**

*New OpenEye recorder and camera kit with no other connections.*

This is a standalone installation that only includes the IP camera kit and a new OpenEye HVR or NVR. If this installation type applies to you, then follow the steps in the **CONNECT** section on page 6 and the **CONFIGURE A** section on page 8.

**Installation B**

*New OpenEye recorder and camera kit with additional connections.*

This installation includes the IP camera kit, an OpenEye recorder and an additional device connected to the network switch such as:

1. A modem or router for an internet connection.
2. A DHCP server that assigns your IP address.

If this installation type applies to you, follow the steps in the **CONNECT** section on page 6 and the **CONFIGURE B** section on page 10.

**Installation C**

*New camera kit with existing recorder and network.*

This installation type adds the IP camera kit to an existing OpenEye recorder. If this installation type applies to you, follow the instructions in the **CONNECT** section on page 6 and the **CONFIGURE C** section on page 14.
Connect Your Devices

Your kit includes Cat5 network cables so you can connect and configure the cameras, switch and recorder prior to the actual installation. OpenEye highly recommends this approach as it will simplify the overall process by having all equipment close at hand during the connection and configuration process. After all the devices are working properly, you can unplug them and install them in their final locations.

- Connect power to switch
- Connect power to recorder
- Power on recorder
- Connect recorder to port 1 (4 camera kit) or port 25 (8 camera kit) on the included switch
- Connect cameras to ports 2~5 (4 camera kit) or 1~8 (8 camera kit) on the included switch
- If using Installation B or C, connect switch to network using any available port (6-24 depending on model)

Tip: The cameras included in the 1-2-IP camera kit are powered by Power over Ethernet (PoE). PoE allows you to power your cameras using the Cat5 cable and a PoE compatible switch.
Configuration A Instructions

Caution: Running the installation disc will overwrite all settings on your OpenEye recorder. If you have already changed settings on your recorder and want to save your existing configuration, you need to use the CONFIGURE C section of this document.

To configure a new OpenEye recorder and camera kit with no other connections.

1. On the main screen of your OpenEye recorder, click Exit.

2. Select Restart in Windows Mode to go to the Microsoft® Windows® desktop.

   Note: If you have not already done so, log in as an authorized user. The recorder’s default login is:
   
   User: administrator
   Password: <blank>

3. Insert the software disc included with the IP camera kit. The disc should auto-run. If it does not, open Windows Explorer, browse to the CD Drive and then double-click OpenEye.exe

4. Click Click Here to Start on the CD menu to start the setup process.

5. Follow the on-screen instructions to select your camera kit and install the cameras on your recorder. When the setup wizard asks Select your Installation Type, select Type A and then click Next.

   Note: The setup wizard will now configure your OpenEye recorder software. You must restart your OpenEye recorder to complete the installation. You will not be able to see the IP cameras until the recorder is restarted.

6. Click Finish to restart your OpenEye recorder.

Need help? Contact our Virtual Support Hotline
Phone: 888-542-1103
Email: support@openeye.net
FAQ: faq.openeye.net
Web: www.openeye.net/12ip
Configuration B Instructions

Caution: Running the installation disc will overwrite all settings on your OpenEye recorder. If you have already changed settings on your recorder and want to save your existing configuration, you need to use the CONFIGURE C section of this document.

To configure a new OpenEye recorder and camera kit with additional connections.

1. On the main screen of your OpenEye recorder, click Exit.

2. Select Restart in Windows Mode to go to the Microsoft® Windows® desktop.
   
   Note: If you have not already done so, log in as an authorized user.

3. Insert the software disc included with the IP camera kit. The disc should auto-run. If it does not, open Windows Explorer, browse to the CD Drive and then double-click OpenEye.exe

4. Click Click Here to Start on the CD menu to start the setup process

5. Follow the on-screen instructions to select your camera kit and install the cameras on your recorder. When the setup wizard asks Select your Installation Type, select Type B then click Next.

   Note: You will be prompted to enter your custom network settings. If you do not know what settings should be entered, refer to the Determine Network Settings section.

Determine Network Settings

In order to connect to the OpenEye cameras, you must configure a static IP address, subnet, and gateway on your OpenEye recorder. This means that the network addresses you enter must be permanent and must not dynamically change over time. This section will help you identify what network addresses you should use to configure your recorder. Because other devices on the network will determine what static addresses you can or cannot use, it is necessary to identify this information.

There are several ways to determine your network settings.

- Consult your network administrator.
- Consult your Internet Service Provider.
- Consult the manufacturer of your router.
- Follow the steps outlined in the next few pages.
Using a Router to Connect to the Internet
If you are using a router to connect to the internet, you can obtain the your network settings by connecting to your router using Microsoft Internet Explorer. Because every router manufacturer uses different login and password information you need to identify the default user name and password for your specific router. If you do not have this information, you can go to portforward.com which maintains a large collection of default user name and passwords for various manufacturers. (OpenEye is not affiliated with portforward.com and provides the link solely for your convenience.)

1. From the OpenEye recorder, exit the Live View screen and restart in Windows Mode. Click the Start button on the Windows desktop and from the All Programs menu, select Accessories and then select Command Prompt.

2. In the Command Prompt window, type ipconfig and press Enter.

3. Write down the settings displayed in the Command Prompt window and continue with the IP Address section. The settings are necessary to complete the network configuration on your OpenEye recorder.

Using Another Computer on the Network
You can easily identify your network settings by doing the following:

1. From another computer on your network (that is NOT the OpenEye recorder); click the Start button on the Windows desktop and from the All Programs menu, select Accessories and then select Command Prompt.

2. In the Command Prompt window, type ipconfig and press Enter.

3. Write down the settings displayed in the Command Prompt window and return to your OpenEye recorder. Continue with the IP Address section. The settings are necessary to complete the network configuration on your OpenEye recorder.

IP Address
With the information obtained in the previous step (IP address, Subnet Mask, Gateway) you now need to choose an IP address that uses the same range as the IP address you wrote down. This means that the numbers of the static IP address will match the numbers of the IP address you wrote down except the last set (after the third period).

For example, if you wrote down 192.168.1.12, then you could use any of these IP addresses: 192.168.1.13, 192.168.1.14, 192.168.1.50 or 192.168.1.254. In this example, the new IP address will be 192.168.1.xxx, and you can choose a unique number between 2-254 for the last set.

Now that you have created an IP address you need to verify that it is not already in use on your network. This is easy to do.

- In the Command Prompt window, type ping followed by a single space and the new IP address and then press Enter. Repeat four times. If you get the message Request timed out four times, then the IP address is not in use and it is safe to use.

Gateway and Subnet Mask
Your can use the same Gateway and Subnet Mask addresses you wrote down earlier; these do not need to change.

DNS
The DNS server address is typically the same as the Gateway address. Use the Gateway address if you are unsure of your DNS server address.

Finish
Complete the setup process by entering the network settings on the appropriate screen of the installation wizard. After the configuration is complete you must restart the OpenEye recorder for the changes to take affect.
Configuration C Instructions

To configure a new camera kit with existing recorder and network.

Connect Devices
When connecting the IP camera kit to an existing installation, you need to find and update the camera IP addresses, and install the latest version of the server software on your OpenEye recorder.

1. On the main screen of your OpenEye recorder, click **Exit**.

2. Select **Restart in Windows Mode** to go to the Microsoft® Windows® desktop.

   **Note:** If you have not already done so, log in as an authorized user.

3. Insert the software disc included with the OpenEye camera kit. The disc should auto-run. If it does not, open Windows Explorer, browse to the CD Drive and then double-click **OpenEye.exe**

4. From the main menu click **Utilities**, and then click **OpenEye IP Camera Finder**.

   ![OpenEye Screen](Image)

5. Click **Device Search** to start searching your network for OpenEye IP devices. The utility will find any connected IP cameras.

   ![Device Search](Image)

6. Right-click a camera from the list of discovered devices, and select **Network Setup**.

7. In the **Network Setup** window, select **DHCP** (to get an IP address from a DHCP server) or **Static IP** (to enter an IP address). OpenEye recommends setting a static IP address.

8. Type the **IP address**, **Netmask** (subnet), **DNS** and **Gateway** that you want to use, and then click **Apply**.

   **Note:** Enter the Gateway last. The Gateway must match the scheme of the IP address and subnet mask.

9. After approximately one minute, click **Device Search** again and your camera will be found with the new IP address.

10. Repeat steps 6-8 for each camera to verify that they are correctly set up on your network.

   ![Network Setup](Image)
Install Server Software
To view and record the OpenEye IP cameras with your OpenEye recorder, you need to install the latest version of the OpenEye server software. From the main menu of the software disc, click Utilities and then click Install Server Software. The software installer will install the latest server software version. Follow all on-screen instructions to complete the installation.

Server Setup
Add the IP cameras to the OpenEye recorder using the Manual Device Entry or Automatic Device Entry instructions.

Tip: Watch the training video Adding an IP camera on the included software disc.

Manual Device Entry
1. On the OpenEye recorder main screen, click Setup, and log in as an authorized user.
2. Click Network Cameras.
3. Select your camera from the Device Type list and type a Device Name, IP address User ID and Password for the camera.

Note: If you changed the default connection port on the camera you also need to change the Port # here as well. The camera’s default login is:
User: Admin
Password: 1234

4. Click Add to add the camera to the Device List.

5. Repeat step 3 for all remaining cameras. When all cameras are added, continue with the Device Setup section.

Automatic Device Entry
1. On the OpenEye recorder main screen, click Setup, and log in as an authorized user.
2. Click Network Cameras.
3. Click Find Cameras.
4. Select the check box next to each camera that you want to add to the device list.
5. Type the User ID and Password for each camera.
6. Click Get Device to add the cameras to the device list.
7. When all cameras are added, continue with the Device Setup section.

Device Setup
1. Click the Channel Setup tab, and then click Drag and Drop Cameras.
2. Drag the cameras to the channel numbers that you want each assigned to on the recorder.
3. Click Apply.
Appendix

Training Videos
For additional information and training, watch the training videos included on the software CD. To access the training videos on the disc, insert the included software disc on your PC or HVR/NVR, click Resources, and then click Training Videos to view the list of available videos.

Technical Information
This section provides the details of the Installation and Configuration utility's settings:

Cameras
All OpenEye IP cameras are initially assigned a static IP address. A dynamic IP address will change over time and may cause connection and configuration problems so OpenEye recommends using a static IP address. Factory assigned camera IP addresses are 192.168.55.3 through 192.168.55.10.

IP settings on the recorder
The installation wizard on the included disc assigns a static IP address to the recorder. The installation wizard will ask you to select your installation. If you select Type A: Standalone Installation, the wizard will assign the recorder the static IP address 192.168.55.2. If you select Type B: Additional Network Connections, the installation wizard will assign a secondary IP address of 192.168.55.2 for communication with the cameras.

Caution: Changing the IP settings to DHCP will remove the secondary IP address and the NVR will not be able to communicate with the cameras.

Server software settings
The installation wizard on the included disc adds all cameras to the device list and assigns the cameras to channels 1-4 or 1-8. This configuration will overwrite any existing configuration on the recorder.

Default Login Information:
The default administrator login for the OpenEye recorder is:
User: administrator
Password: <blank>

The default administrator login for the OpenEye cameras is:
User: Admin
Password: 1234

Glossary

Bandwidth A measure of communication resources. In networking, this refers to the amount of data transferred (or the amount of data that can be transferred). This is expressed in bits per second as a bit rate.

Bit Rate Describes the speed of video transmission. This data transfer rate is the number of bits that are transmitted per second.

Cat5 Category 5 cable is a twisted pair high signal integrity cable style used for computer networks, and is also used to carry other signals such as telephony and video.

Cat5e Category 5e cable (or Category 5 Enhanced) is network cable made of four pairs of cables twisted together. Cat 5e is designed to support gigabit Ethernet speeds.

Cat6 Category 6 cable is network cable that has higher performance specifications than Cat5e. The cable is backward compatible with Cat5 and Cat5e, but is designed for use in higher speed networks.

Codec Codec stands for Compressor /Decompressor and refers to any technology that compresses or decompresses data. In the CCTV industry, data refers to video, still images, and sometimes audio. There are three main codecs used in the industry: MJPEG, H.264 and MPEG4.

DDNS Dynamic Domain Name System is a service that automatically re-routs internet traffic from a domain name (like www.openeye.net) to a specific IP address. By default, most Internet Service Providers (ISPs) will periodically change the external IP address. With DDNS, an unchanging name is used in place of the changing IP address, so that the same information can be used for connection regardless of the current IP address.

Ethernet Ethernet is the standard that defines how devices in a local network (LAN) communicate. Network cable is often referred to as Ethernet cable. There are two basic types of Ethernet cable used in today's high speed networks: Cat5e and Cat6.

External IP Address An External, or public, IP Address is an IP address that is reachable on the internet. Most local, residential and office networks have only one public IP address that is seen from outside the network.
Gateway
For a local, residential or other type of network to connect to the internet, a gateway is required to route traffic from the internet into the local network. Usually this is a router or a cable or DSL modem.

H.264
H.264 is a popular compression method for CCTV IP cameras. H.264 offers greater file size compression over MJPEG and MPEG4 but requires greater processing power to encode and decode.

Internal IP Address
An internal IP address is an IP address that is used for devices on a local area network (LAN). Internal IP addresses cannot be seen by computers outside the local network.

IP66
Most outdoor cameras have an Ingress Protection number, this number describes the weather resistance of the camera housing. The first digit describes the level of protection against solid objects, with 6 as the maximum. The second digit describes the level of protection against liquids, with 8 as the maximum. IP66 is the standard for outdoor cameras – all OpenEye outdoor cameras are IP66 rated. A rating of IP66 means that the camera is rated weatherproof against dust and rain.

IPv4
IPv4 usually refers to the format of an IP address using the version 4 addressing method. IPv4 uses 32-bit addresses. These addresses are written as four groups (or octets) of three digits, separated by a period, each with a maximum value of 255 for each octet. Example: 192.168.25.235.

ISP
Your Internet Service Provider is the company that provides internet access and service for you.

MJPEG
The Joint Picture Experts Group originally defined JPEG as a standard of compression for photographers for image storage. Motion JPEG, or MJPEG, is a widely used network video transmission method. MJPEG sends each image (or frame) of a video stream as a complete image, because of this MJPEG uses little processing power and provides very reliable transmission. However, this method also uses a great deal of storage space when compared to H.264.

PoE
Power over Ethernet is a method for delivering network connection and power over a single cable. PoE requires category 5 (Cat5) cable. Power must come from a PoE device that can deliver power, such as a PoE injector or a PoE switch.

Port
Network ports are logical software portals through which all network communication must travel. There are 65,535 ports which ensure that any number of devices requiring unique ports should be able to work together on the same network.

Port Forwarding
Unless an external address is assigned directly to a device (which generally requires a monthly fee to the ISP), port forwarding is required to allow communication to a device over the internet. With port forwarding, the remote user enters the external IP address (which is assigned to the router) and a port (which is assigned to the device). The communication request is sent to the IP address, which reaches the router. If properly configured, the router then forwards the communication on to the device on the local network using the corresponding port. Without port forwarding, all communication from outside of the local network stops at the router.

Port forwarding is a function of every router. Popular brands such as Netgear or Linksys have an area in setup called Port Forwarding. Some other brands may list this function as “pinhole” or “virtual server”.

Step by step port forwarding instructions can be found at portforward.com for nearly every router. Instructions can usually be found on the web site of the router manufacturer or ISP or in the router manual. In addition, OpenEye support is available to assist with the port forwarding process.

Router
A router is a specialized network switch that is capable of connecting two or more networks, and can selectively route and forward data from one to the other.

Switch
A network switch is a network device that is used to connect several other network devices and segments. A switch is not capable of the same type of advanced data routing and forwarding as a router.

Subnet
Devices on a network are defined not only by the IP address, but also by the subnetwork that they belong to. A subnet is a logical division of connected devices. Most of the time, all devices in a network belong to the same subnet. All IP addresses that belong to the same subnet have common digits at the beginning of the IP address.