



ADMINISTRATOR GUIDE

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Polycom[®] EagleEye[™] Director II



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Before You Begin

Topics:

- [Get Help](#)

Get Help

For more information about installing, configuring, using, and administering Polycom products, refer to the **Documentation** tab at [Polycom Support](#).

The Polycom Community

The [Polycom Community](#) gives you access to the latest developer and support information. Participate in discussion forums to share ideas and solve problems with your colleagues. To register with the Polycom Community, simply create a Polycom online account. When logged in, you can access Polycom support personnel and participate in developer and support forums to find the latest information on hardware, software, and partner solutions topics.

Polycom and Partner Resources

In addition to this guide, the following documentation further describes Polycom endpoints and devices used for video conferencing. The *Polycom EagleEye Director II Release Notes*, in particular, includes known and resolved issues related to EagleEye Director II interoperability with other Polycom endpoints and devices.

The *Polycom EagleEye Director II Setup Sheet* describes how to set up the EagleEye Director II camera to connect with following Polycom endpoints and devices:

- RealPresence Group Series systems
- Computer running Skype for Business
- Microsoft Surface Hub

The following EagleEye Director II documents are available at [Polycom Support Peripherals](#). The RealPresence Group Series documentation is available at [Polycom Support Video](#).

- *Polycom EagleEye Director II Release Notes*
- *Polycom EagleEye Director II Setup Sheet*
- *Polycom RealPresence Group Series Administrator Guide* (for administrators who want to use EagleEye Director II cameras with RealPresence Group Series systems)

Related Tasks

[Install the EagleEye Director II App](#) on page 12

Documentation Feedback

We welcome your feedback to improve the quality of Polycom documentation.

You can email [Documentation Feedback](#) for any queries or suggestions related to this documentation.

Getting Started

Topics:

- [Product Overview](#)

Product Overview

The Polycom® EagleEye™ Director II camera is a dynamic locating technology that identifies participants within the viewing range of the system. It automatically pans, tilts, and zooms the camera, frames the speaker, and sends a framed image to the connected system or device. The EagleEye Director II camera acts as a director of a video production, and uses sophisticated Polycom-developed technology. The camera is a dual-camera solution that uses EagleEye IV 12x cameras with 1080p resolution.

Initially, one camera captures the current view, while the other camera uses microphones to voice-track the next target. The camera frames the speaker prior to displaying the video so that call participants don't see the pan/tilt/zoom of the cameras. If two people speak alternately, one camera tracks the first speaker, while the other camera tracks the second speaker.

Figure 1: Polycom EagleEye Director II camera



You can use the camera as a USB camera in the Bring Your Own Device (BYOD) mode, connect to a RealPresence Group Series system in the Group Series mode, or let the camera automatically detect a connection.

To provide different perspectives and camera angles, and to improve communication in conference calls, you can cascade two EagleEye Director II cameras in the same room. The camera supports three different placement scenarios for cascading in medium to large conference rooms.

Setting Up Your Camera

Topics:

- [Position the Camera](#)
- [Cable Connections](#)
- [Indicator Lights](#)
- [Using a Polycom EagleEye IV Camera](#)
- [Skype for Business](#)

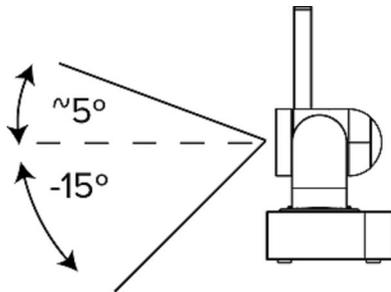
Position the Camera

To position the EagleEye Director II camera, follow these guidelines for the ultimate experience.

Procedure

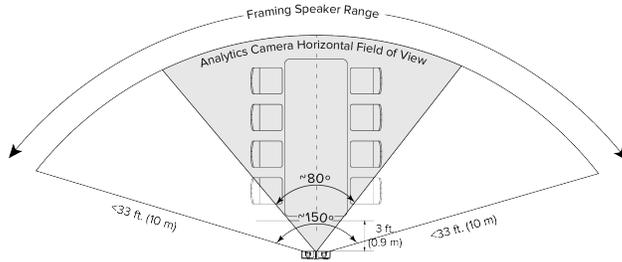
1. Mount the camera in a level position on a wall. Place it between 5.5 and 7 feet (1.7 to 2.1 m) from the floor, and at least 12 inches (0.3m) from the ceiling and walls, measuring from the side of the camera.

The camera's viewing angle is approximately 5 degrees above and 15 degrees below its direct line of sight as shown below.



2. To ensure optimal performance of the face detection feature, do the following:
 - Provide ample lighting on faces of participants. This allows the camera to correctly frame faces, using the eyes, noses, and mouths as guidelines.
 - Allow only minimal backlighting.
3. To ensure the best view from the camera voice-tracking feature, do the following:
 - Ensure that ambient room noise is quiet enough to allow the camera to locate the participant who is speaking.
 - Set up the audio reference connection from the RealPresence Group Series system to the camera, whether you connect it directly to the audio output of the system, or to an audio processor managing the room audio.
4. Ensure that people are sitting within a 3 to 33 feet (0.91 m ~ 10.1 m) viewing range from the camera.

The following figure shows the framing speaker range of the camera.



Note: Before powering on the camera, connect it to the RealPresence Group Series system using an HDCI cable. This prevents the camera from automatically entering sleep mode after three minutes.

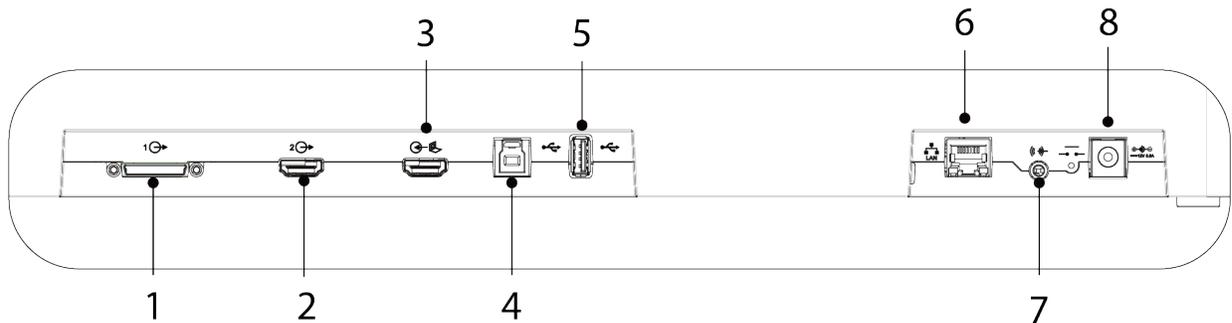
Related Concepts

[Analytics Camera](#) on page 24

[Scenarios for Meeting Rooms](#) on page 25

Cable Connections

Depending upon your environment and how you want to use the EagleEye Director II camera, cable connections can vary.



Refer to the figure and table for information on cables, connection to the respective ports, and the related scenarios where you can use them.

Cable Connections, Ports, and Usage Scenarios

Reference Number	Port	Cable	Connection Details	Usage Scenarios
1	HDCI line-out	HDCI Polycom EagleEye IV Digital camera cable	Connect the mini-HDCI cable from the camera out to the RealPresence Group Series system.	<p>Scenario 1: Use a single camera with a RealPresence Group Series system.</p> <p>Scenario 2: Use a primary camera with a RealPresence Group Series system for cascading.</p>
2	HDMI line-out	HDMI cable	Connect the display monitor to the camera's HDMI line-out port.	<p>Scenario 1: Use the EagleEye Director II camera as a display and to by-pass video and audio. At the same time, the camera receives a copy of far-end audio as a reference.</p>
3	HDMI line-in	HDMI cable	Connect the computer's HDMI line-out port to camera's HDMI line-in port.	<p>Scenario 1: Use the EagleEye Director II camera as a display and to by-pass video and audio. At the same time, the camera receives a copy of far-end audio as a reference.</p>
4	USB 2.0 Type B	USB cable	Connect the computer's USB A port to the camera USB 2.0 B port.	<p>Scenario 1: Use a single camera with a local computer.</p> <p>Scenario 2: Use a primary camera with a local computer for cascading.</p>

Reference Number	Port	Cable	Connection Details	Usage Scenarios
5	USB 2.0 Type A	Not applicable.	Plug in a USB storage device.	Scenario: Use for upgrading or debugging.
6	LAN	CAT 6 Gigabit Ethernet cable	Connect the camera's LAN port to the intranet.	Scenario 1: Use for connecting a primary camera to a secondary camera for cascading. Scenario 2: Access the camera's web interface.
7	3.5mm stereo line-in	Polycom EagleEye Director II RCA audio breakout cable	Connect the RealPresence Group Series system's line-out port to the 3.5mm line-in port.	Scenario: Use a RealPresence Group Series system with a single camera that receives a copy of far-end audio as a reference.
8	Power	Power cable	Using the power cable, connect the camera to a power source.	Scenario: All.

Related Concepts

[Cascading Two Cameras](#) on page 25

Indicator Lights

Indicator lights display when the EagleEye Director II camera powers on.

LED Indicator Light Status

LED Light Color	Description
Blue	Power on, and the camera is in active state
Blinking Blue	Receive IR or the camera powering on

LED Light Color	Description
Fast Blinking Blue	Adjust the status of the analytics camera
Amber	Standby/sleep
Alternate Amber and Blue	Software update and factory restore
Blinking Amber	USB disk is plugged in
Green	In a call
Blinking Purple	Pair systems and devices; select Identify on the Polycom Trio system
Blinking Red	Can't detect the EagleEye IV camera.

Related Concepts

[Troubleshooting](#) on page 34

Related Tasks

[Perform a Factory Restore](#) on page 35

Using a Polycom EagleEye IV Camera

Two Polycom EagleEye IV cameras are used with the EagleEye Director II camera. For available accessories, refer to the *Polycom EagleEye Director II Release Notes*. For more information on the EagleEye Digital Extender and Digital Breakout Adapter accessories, refer to the *RealPresence Group Series Integrator Reference Guide*.

Replace the EagleEye IV Camera

On the EagleEye Director II camera, you can replace an EagleEye IV camera with another EagleEye IV camera.

Procedure

1. Power off the EagleEye Director II camera.
2. Disconnect and remove the existing EagleEye IV camera.
3. Connect the desired EagleEye IV camera.
4. Power on the EagleEye Director II camera.

Skype for Business

To use the EagleEye Director II camera as a USB camera for Skype for Business calls, the client computer requires some configuration.

Enable the Camera in Skype for Business Client

Before you can use the EagleEye Director II camera with Skype for Business, you must select it as a video device in the client computer.

Procedure

1. In the Skype for Business client, select  **Options** > **Tools** > **Video Device Settings**.
2. Select **EagleEye Director II camera** from the list.
3. Select **OK**.

Installing the App

Topics:

- [Install the EagleEye Director II App](#)

You can install the EagleEye Director II App using a setup wizard.

Install the EagleEye Director II App

The EagleEye Director II App allows administrators to view connected, available, and recently connected devices.

Ensure that you do the following before installation:

- Install the Microsoft .NET Framework on your computer. For version information, refer to the *Polycom EagleEye Director II Release Notes*.
- Download the installation .exe file from [Polycom Support](#).

Procedure

1. Select the .exe file to download it.
2. Select the .exe file to launch the application, then follow the setup wizard instructions to complete the installation.

Related Concepts

[Polycom and Partner Resources](#) on page 4

Using the App

Topics:

- [View Device Status](#)
- [Connect to a Device](#)
- [Add Device](#)
- [Configure Settings in the App](#)

The EagleEye Director II App displays status information about the currently connected camera. It also provides configurable settings.

The app can discover a camera and its IP address in the following ways:

- The camera is connected to the same sub-network as the local computer with the app.
- The camera is directly connected to the computer with the app.

Note: Windows 10 is highly recommended for the EagleEye Director II App. Windows 7 and Windows 8 don't support the Bluetooth iBeacon used to discover the EagleEye Director II camera.

If no Bluetooth is available on the computer, connect the camera using a network cable to the local computer.

View Device Status

To access IP addresses and other status information, you can use the EagleEye Director II App.

The app lists which cameras are currently connected, cameras that are available for connection, and cameras that have been recently connected.

Procedure

1. Launch the EagleEye Director II App.
All connected, available, and recently connected devices display.
2. Select a device to view its status information.
The app lists important information about the currently connected camera, such as the serial number, IP address, connection mode, and other details.

Related Tasks

[Enable WiFi](#) on page 16

Connect to a Device

You can create a connection to a device using the EagleEye Director II App.

Procedure

- » On the **Status** screen, select an EagleEye Director II camera from the **Available Devices** list.

After successfully connecting, the status information displays, and you can configure settings for the camera.

Add Device

In the EagleEye Director II App, you can add another EagleEye Director II camera to the available devices list, then select that camera to connect to it.

Procedure

1. On the **Status** screen, select **Add Device**.
2. Enter the IP address for the camera.

The camera is added to the **Available Devices** list.

Configure Settings in the App

Configuration settings in the EagleEye Director II App are available for selecting the connection mode, tracking mode, and manually using the camera controls.

Procedure

1. Select the **Camera** tab.
2. Select any of the following settings to configure the camera.

Setting	Description
Mode	Select Automatic , Group Series , or Bring Your Own Device . The camera's connection mode displays on the Status screen.
Tracking	Select the check box to enable automatic tracking. Clear the check box to manually control the camera.
Camera Control	Disable Tracking to enable manual camera control. Use the arrow buttons to tilt and pan the camera. Use the plus and minus buttons to increase and decrease the camera zoom.

Related Tasks

[Configure a Connection Mode](#) on page 17

Setting Up Connections

Topics:

- [Connect to the Camera Web Interface](#)
- [Change Your Language](#)
- [Name Your Device](#)
- [Set Up a Network Connection with 802.1x Authentication](#)
- [Enable WiFi](#)
- [Configure a Connection Mode](#)

To customize settings for the EagleEye Director II camera, such as white balance, color saturation levels, or camera tracking, you can connect to the camera's web interface. You can also configure camera and tracking settings in the web interface of the RealPresence Group Series system. The last changes to the settings, no matter which web interface is used, are applied.

Connect to the Camera Web Interface

To connect to the web interface for the EagleEye Director II camera for the first time, you must complete a few configuration steps.

- Discover the camera IP address using the EagleEye Director II App.
- To cascade two cameras using a direct Ethernet cable connection, WiFi must be enabled for web interface access.

Procedure

1. Power on the EagleEye Director II camera.
2. In a web browser, enter the camera's IP address that you discovered using the EagleEye Director II App.
3. Enter the username `admin` with the default password (last six digits of the camera's serial number).

Polycom recommends that you change your password from the default for security reasons.

4. Select **Login**.

If this is the first time you have accessed the web interface, you must select a region.

Change Your Language

You can change the language displayed in the EagleEye Director II camera web interface.

Procedure

- » Select the drop down arrow with the language label, then select your language from the list.

Note: This button is located at the top right of all screens, and on the **Welcome** screen when you first log in.

Name Your Device

Name your EagleEye Director II camera to distinguish the device from other cameras or other devices in a connection list. During a call, you can't name or rename your device.

Procedure

1. In the web interface, go to **General Settings > Device Name**.
2. Enter a descriptive name for your device. For instance, name it using the location or owner's name.
3. Select **Save**.

Set Up a Network Connection with 802.1x Authentication

If you need the EagleEye Director II camera to access a network that requires 802.1x authentication, you must configure settings in the camera web interface.

- Discover the EagleEye Director II camera IP address using the EagleEye Director II App.
- Use an Ethernet cable to connect the camera to your local computer.

Procedure

1. In the camera's web interface, select **Network Settings > Ethernet**.
2. At **802.1x**, select **Enable**.
3. At **Identity**, enter a name that identifies this setting.
4. At **Password**, enter a password.
5. Go to **General Settings > Device Name**.
6. If you have not entered a device name, do it now.
7. Log out of the web interface.

Enable WiFi

To cascade two cameras using a direct Ethernet cable connection, enable WiFi for web interface access.

- Discover the camera IP address using the EagleEye Director II App.
- Use an Ethernet cable to connect the camera to your local computer.

Procedure

1. In the camera web interface, select **Network Settings > WiFi** and select **Enable WiFi**.
2. Enter the user name and password for authentication.
3. Use the EagleEye Director II App to discover the WiFi address for the new connection.
If the WiFi address is not found, WiFi authentication might have failed. Repeat the previous steps.

Related Tasks

[View Device Status](#) on page 13

Configure a Connection Mode

By selecting a mode in the web interface, you can set up an EagleEye Director II camera to work with a RealPresence Group Series system, or to work with a local computer.

Procedure

1. Navigate to **General Settings > Mode**.
2. At **Mode**, select one of the following options.

Mode Options

Setting	Description
Automatic	Automatically detects a Group Series connection or a Bring Your Own Device connection. If you connect the camera to both a RealPresence Group Series system (using HDCI) and a computer (using USB), the camera does not work as expected.
Group Series	Camera works with a RealPresence Group Series system. If you connect your camera to a computer in this mode, the computer does not detect the camera as its USB camera.
Connect Your Own Device	Camera works with a local computer so that you can use the camera as a USB camera. This mode is for computer connections only. If you connect the camera to the RealPresence Group Series system in this mode, the video conferencing system cannot detect the camera.

3. Select **Save**.

Related Concepts

[Cascading Two Cameras](#) on page 25

Related Tasks

[Configure Settings in the App](#) on page 14

Configuring Settings

Topics:

- [Configure Camera Tracking](#)
- [Configuring the PIP Layout](#)

You can configure settings in the EagleEye Director II camera's web interface for your environment.

Configure Camera Tracking

Tracking settings allow the camera to frame the speaker or the meeting participants, adjust the tracking speed, and change the subject frame size.

Note: The following settings are also available in the RealPresence Group Series web interface. The last changes to these settings are applied for the camera, whether you change the settings in the RealPresence Group Series system settings, or in the EagleEye Director II settings.

Procedure

1. In the web interface, go to **Camera Settings > Tracking**.
2. Configure the following settings.

Setting	Description
Tracking Mode	<ul style="list-style-type: none">▪ Frame Speaker: Frames the active speaker.▪ Frame Group: Frames the conference participants.▪ Off: Disables automatic tracking and switches to manual mode. Note: If you select Off in the camera web interface, you can't turn this setting on from the RealPresence Group Series system's local interface or from the EagleEye Director II App.
Tracking Speed	<ul style="list-style-type: none">▪ Slow: Tracks transitions slowly.▪ Normal: Tracks transitions at a normal rate.▪ Fast: Tracks transitions quickly.
Framing Size	<ul style="list-style-type: none">▪ Wide: Most expansive frame.▪ Medium: Average-sized frame.▪ Tight: Close-up frame.

Related Tasks

[Configure Cascading](#) on page 26

Improve Video Quality

Room lighting can affect video quality. If the room is too bright or dark for camera tracking to work properly, you can improve the video quality by adjusting certain settings in the web interface.

Note: The following settings are also available in the RealPresence Group Series web interface. The last changes to these settings are applied for the camera, whether you change the settings in the RealPresence Group Series system settings, or in the EagleEye Director II settings.

Procedure

1. Go to **Camera Settings > Cameras**.
2. Configure the following settings.

Setting	Description
Backlight Compensation	Specifies whether to have the camera automatically adjust for a bright background. Backlight compensation is best used in situations where the subject appears darker than the background.
White Balance	<p>Specifies how the camera compensates for variations in room light sources. Select Automatic, Manual, or a color temperature value.</p> <p>Automatic: Polycom recommends this setting for most situations. It calculates the best white balance setting based on lighting conditions in the room.</p> <p>Manual: Use this setting for rooms where the Auto and fixed values do not provide acceptable color reproduction.</p> <p>After you set this setting to Manual, fill the camera's field of view with a flat white object, such as a piece of paper. For best results, the object should be uniformly illuminated with light that is representative of the room lighting that will be used in the conference, rather than light from a display, another area, or a shadow. After the object is in place, select Calibrate.</p> <p>Color Temperature Value:</p> <p>3200 K (tungsten bulb)</p> <p>3680 K (warm office fluorescent)</p> <p>4160 K (cool office fluorescent)</p> <p>4640 K (cool white fluorescent)</p> <p>5120 K(neutral daylight)</p> <p>5600 K(cool daylight)</p>
Brightness	Adjust how bright you want the room to appear. Enter a value from -10 to 10.
Color Saturation	Determines how the camera system transmits hues in certain lighting conditions. For example, a wall looks different in the day than at night.

Setting	Description
	When saturation is zero, the color appears as a shade of gray. Enter a value from -5 to 5.

- Optional. Use the **Calibrate** button to adjust the **White Balance** with one click. This option is useful when you discover that the color temperature value is not appropriate and you do not want to use **Automatic** mode to control the white balance.

Configuring the PIP Layout

Picture in Picture (PIP) displays a group view or a room view to the far-end site. You can configure the PIP setting to display in 5 different layouts.

Configure the PIP Window Position

You can change the PIP window position that displays in a video conference call.

Procedure

- In the camera web interface, select **Camera Settings > Tracking**.
- At **PIP Layout**, select one of the window positions available.

Related Tasks

[Configure Cascading](#) on page 26

Improving Tracking Accuracy

If you're using EagleEye Director II camera with a Polycom Trio 8800 system in a Microsoft Surface Hub or MSR Dock environment, the Polycom Trio system can enhance your EagleEye Director II camera tracking accuracy.

Once paired and configured, the Polycom Trio system adds Acoustic Echo Cancellation (AEC) functionality that allows the EagleEye Director II camera to ignore audio output from the Polycom Trio system speakers. This results in better EagleEye Director II camera tracking.

For information on pairing and configuring, refer to the *Polycom UC Software with Skype for Business for Polycom Trio Deployment Guide* and the *EagleEye Director II Setup Sheet* on [Polycom Support](#).

Camera Tracking Presets

Topics:

- [Configure Frame Speaker Presets](#)
- [Configure Frame Group Presets](#)
- [Configure Tracking Off Preset](#)

To configure camera tracking positions for speakers and call participants in the same room, you can use presets.

Speaker tracking and group tracking presets work together. If there's an active speaker in the room, the camera uses speaker presets to frame the speaker. When no one is talking, the camera uses group tracking presets to zoom out and frame the call participants.

Configure Frame Speaker Presets

The EagleEye Director II camera detects people in the room and automatically pans to focus on the current speaker by default. By using camera preset options, you can configure the camera to focus on an area instead of the speaker.

For example, to frame three different areas, you can use **Speaker Tracking Preset** to create three presets. When the microphone picks up the active speaker, it automatically moves to the preset with the closest audio coordinates. The cameras automatically focus on the speaking participants using the preset positions.

Camera and Preset Behaviors

Activity	Camera Default Behavior	Speaker Preset Behavior
Someone is talking	Frame speaker	Frame a pre-defined area
No one is talking	Frame all call participants	Frame a pre-defined area

Procedure

1. In the web interface, go to **Camera Settings > Presets > Frame Speaker Presets**.
2. Do one of the following:
 - Select **Add Preset +**.
 - Select a box with an existing preset.
3. Use the camera controls to position the camera.

Note: Position the left and right cameras to the same view.

4. Select the **Enable Frame Speaker Presets** check box.
5. Select **Save**.
6. Repeat steps 2 through 5 for the remaining presets.

Configure Frame Group Presets

Create two camera position presets for the right and left cameras. The camera automatically frames the meeting group using the preset positions.

Procedure

1. In the web interface, go to **Camera Settings > Presets > Group Tracking Presets**.
2. Do one of the following:
 - Select **Add Preset+**.
 - Select a box with an existing preset.
3. Use the camera controls to position the camera.

Note: Position the left and right cameras to the same view.

4. Select the **Enable Group Tracking Presets** check box.
5. Click **Save**.
6. Repeat steps 2 through 5 for the remaining presets.

Configure Tracking Off Preset

You can save a single camera position for when tracking is off.

Procedure

1. In the web interface, go to **Camera Settings > Presets > Tracking Off Preset**.
2. Do one of the following:
 - Select **Add Preset+**.
 - Select the box with the existing preset.
3. Use the camera controls to position the camera.
4. Select the **Enable Tracking Off Presets** check box.
5. Click **Save**.

Using the Camera

Topics:

- [Analytics Camera](#)

After you have set up, positioned, and configured the camera settings, you can begin using the camera.

Analytics Camera

The analytics camera provides participant count details and PIP video for the EagleEye Director II camera.

The analytics camera captures group view video only when the EagleEye Director II camera is in tracking mode, or when the analytics camera is in a tilt position. At the same time, the two EagleEye IV cameras in an active state display an LED light. In any other state, the analytics camera does not send video.

The Horizontal Field of View (HFOV) of the analytics camera is 80 degrees. The participants who are outside the HFOV are not detected by the analytics camera and are not counted or shown in the PIP.

As a best practice to achieve the best group framing video quality, keep the people count under 15 participants.

Related Tasks

[Position the Camera](#) on page 6

Adjust the Analytics Camera

To achieve the best framing of call participants in the PIP window, you can tilt the analytics camera.

Keep the following information in mind when using the analytics camera:

- Don't use the remote control to adjust camera tilt.
- Adjusting a cascaded secondary camera with a remote control doesn't work.
- During a call, you can't adjust the analytics camera.

Procedure

1. In the web interface, select **Camera Settings > Analytics Camera**.
2. Select **Up** to tilt the cameras up, or select **Down** to tilt the cameras down.

Cascading Two Cameras

Topics:

- [Scenarios for Meeting Rooms](#)
- [Configure Cascading](#)
- [Disconnect a Cascaded Camera](#)

Cascading involves using two EagleEye Director II cameras in the same conference room. Using more than one camera can add different perspectives and camera angles to improve communication in conference calls.

Note: Since the EagleEye Director II camera uses audio to detect the speaker, if the room is noisy, the camera won't work properly. The EagleEye Director II camera doesn't support a local sound reinforcement system.

Related Tasks

[Configure a Connection Mode](#) on page 17

Related reference

[Cable Connections](#) on page 7

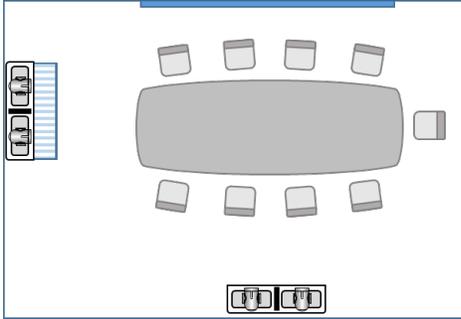
Scenarios for Meeting Rooms

Two EagleEye Director II cameras are suggested as a best practice if you want better coverage in a large conference room or classroom. Determining which camera placement scenario to use for cascading depends upon your video conferencing needs.

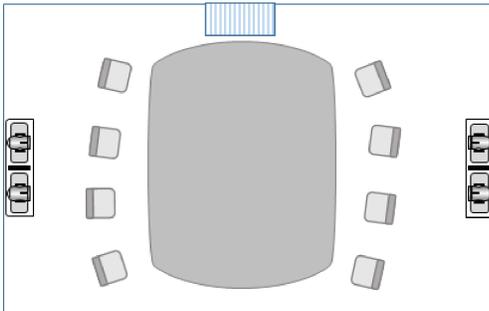
Refer to the following diagrams to determine which placement of the cascaded cameras works best for your environment. Your system placement is indicated in the diagrams by the striped blue box.

Note: Cameras in all of the following scenarios should be mounted on a wall for the best user experience. The cameras should not be directly in line with—or across from—a display. Do not configure a self-view full screen where the cameras would be able to view it.

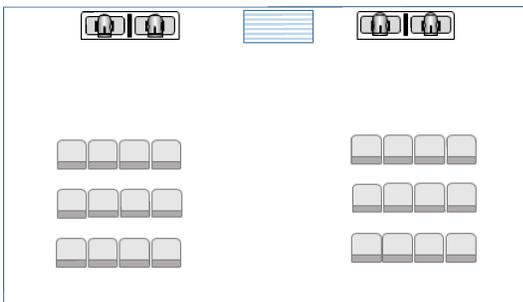
Scenario 1: One camera is positioned on the left or right side of the room, and the other camera is positioned at the front of the room. This configuration works well in conference rooms with a whiteboard on a side wall.



Scenario 2: The cameras are positioned at either side of the room with the system at the front. This configuration works well in classrooms or large seminars.



Scenario 3: One camera is positioned on the left front of the room and the other is positioned on the right front of the room. This configuration works well in classrooms or large seminars.



Related Tasks

[Position the Camera](#) on page 6

Configure Cascading

Cascading involves using two EagleEye Director II cameras in the same room. In this documentation, the original camera is called primary, while the additional camera is called secondary.

To connect the primary EagleEye Director II camera to a RealPresence Group Series system or to a computer, you must select a mode in the web interface.

Note: The primary camera synchronizes these settings to the secondary camera: Tracking Mode, Tracking Speed, Framing Size, and PIP Position.

Procedure

1. Select **General Settings > Mode** and choose one of the following options.
2. In the primary camera web interface, select **Camera Settings > Cascading**.
3. Select a camera from the list and select **Connect**.

Only standalone EagleEye Director II cameras appear in the list.

Secondary Camera Connection Status

Connection Status	Description
Red icon	Disconnected. The camera might be powered off, or the network cable might have been unplugged for more than one minute.
Green icon	Connected.
Gray icon	Ready for connection. If you manually disconnect the camera, the icon status becomes gray.

Related Tasks

[Configure Camera Tracking](#) on page 18

[Configure the PIP Window Position](#) on page 20

Disconnect a Cascaded Camera

You can disconnect an EagleEye Director II camera from the existing device network.

Procedure

1. Select **Camera Settings > Cascading**.
2. To remove a camera from the network, select the device name and then **Disconnect**.

The **Status** displays a red icon, indicating that the primary camera is disconnected. After the primary camera is disconnected, the secondary device is automatically disconnected from the network.

Securing the Camera

Topics:

- [Security Certificates](#)
- [Passwords](#)

Security Certificates

If your organization has deployed a public key infrastructure (PKI) for securing connections between devices on your network, Polycom recommends that you have a strong understanding of certificate management and how it applies to your EagleEye Director II camera before you integrate it with the PKI.

Cameras can generate requests for certificates (CSRs) that can be sent to a certificate authority (CA) for official issuance. The CA is the trusted entity that issues, or signs, digital certificates for others. Once signed by the CA, you can install the certificate on the camera for use in all TLS connections used by the system.

The cameras support the generation and use of one server certificate in .pem format when used in an environment that has a fully deployed PKI. The camera's web server presents this certificate after receiving connection requests from browsers that attempt to connect to the camera web interface.

For systems deployed in an environment that does not have a fully deployed PKI, you do not need to install these certificates. This is because all systems automatically generate self-signed certificates used to establish secure TLS connections. However, when a full PKI is deployed, self-signed certificates are not trusted by the PKI and signed certificates must be used.

Create a Security Certificate

You can generate security certificates for your organization in the EagleEye Director II camera web interface.

Procedure

1. Go to **General Settings > Certificate**.
2. Enter your information in the text boxes.
3. Select **Create**.
4. Download and save the file to your local computer.

Import a Security Certificate

You can import installed security certificates for your organization in the EagleEye Director II camera web interface.

Procedure

1. Go to **General Settings > Certificate**.
2. Select **Import** and browse to the installed certificate.
3. Open the .csr file and select **Import**.
4. Select **Restart System**.

Passwords

To ensure your camera's security, it's important to change the default admin password. If you want to further enhance password strength, enable a strong password.

Change Your Password

Changing your password from the default is important for security reasons. Your corporate security department might set standards for passwords. As a best practice, communicate passwords to the appropriate people in your organization.

Procedure

1. In the camera web interface, select **Change Password**. This button is located at the top right of all screens.
2. Enter the **Current Password**.
3. Enter a **New Password**.
4. Enter the new password at **Confirm New Password**.
5. Select **Save**.

Require a Strong Password

For enhanced security and to enforce a strong password, you can enable **Password Requirements** in the camera web interface. After you enable this setting, the administrator must follow the new standards to change the password and to login.

Note: To avoid complexity during logins and password changes, don't enable the strong password.

The camera enforces the following rules after you enable a strong password setting.

Rules for Strong Passwords

Rule	Value
Minimum Length	15
Require Lowercase Letters	2
Require Uppercase Letters	2
Require Special Characters	2
Require Numbers	2
Maximum Consecutive Repeated Characters	2

Procedure

1. In the web interface, select **General Settings > Password Requirements**.
2. At **Password Requirements**, select the check box.
3. Select **Save**.

Port Usage

Topics:

- [Port Connections](#)

The EagleEye Director II camera uses a range of ports to handle communication with other systems, devices, and network services.

Note: Your network must allow bidirectional communication between the EagleEye Director II camera and other devices.

Port Connections

The following table lists the inbound, outbound, and bidirectional ports used by the EagleEye Director II camera.

Port	Direction	Type	Protocol	Application Protocol	Function
2000	Inbound	Static	UDP		Device discovery for the Polycom Trio system
6000	Inbound	Static	UDP	RTP	Audio from the Polycom Trio system
8000	Inbound	Static	TCP	Web Socket	Signaling with the Polycom Trio system
4933	Bidirectional	Static	UDP		Cascading EagleEye Director II camera control
873	Bidirectional	Static	UDP/TCP	RSYNC	Cascading EagleEye Director II camera RSYNC
319	Bidirectional	Static	UDP	PTP	Cascading EagleEye Director II camera Ptpd2

Port	Direction	Type	Protocol	Application Protocol	Function
320	Bidirectional	Static	UDP	PTP	Cascading EagleEye Director II camera Ptpd2
5000	Bidirectional	Static	UDP	SRTP	Cascading EagleEye Director II camera GStreamer
123	Inbound	Static	UDP	NTP	Ntpd
5353	Bidirectional	Static	UDP	mDNS	Cascading EagleEye Director II camera Avahi
9977	Bidirectional	Static	UDP	SRTP	Cascading EagleEye Director II camera AEC data
9999	Bidirectional	Static	TCP		Cascading EagleEye Director II camera video stream handshake
9988	Bidirectional	Static	TCP		Cascading EagleEye Director II camera AEC handshake
4934	Bidirectional	Static	UDP		Cascading EagleEye Director II camera tracking
443	Inbound	Static	TCP	HTTPS	Secure web server - HTTPS
80	Inbound	Static	TCP	HTTP	Web server - HTTP
32768-61000	Bidirectional	Dynamic	TCP/UDP		RSYNC and other applications that use a dynamic, random port

System Maintenance

Topics:

- [Use the Camera Web Interface to Update Software](#)
- [Update Camera Software Using Windows](#)
- [Update Software Using a USB Storage Device](#)

Use the Camera Web Interface to Update Software

You can use the camera web interface to update your camera software. Using this method for software updates from version 1.x to 2.x is not supported.

Note: When cascading two cameras, you must update the camera software using the primary camera, which automatically sends the software update to the secondary camera. Upgrading steps are the same for all connection modes.

Procedure

1. In the camera web interface, select **Software Updates**.
2. Select **Choose File**.
3. Do one of the following.
 - Select **Open**.
 - Select **Save**, then locate the software package on your local computer or network.
4. After you open the file, follow the on-screen instructions.

Update Camera Software Using Windows

You can use Windows Update on your computer to update your camera software. Software downgrading is not supported using this method.

If the Windows Update server downloads a firmware update and the connected computer is running an unsupported software version, the system prompts an update to the latest software version. View process logs in the Windows Event log. Note that the device update result is not currently valid.

Note: If you are using cascading, the primary camera is updated and then automatically sends the software update to the secondary camera.

Procedure

1. Use Windows Update to manually update the camera software.
If an update does not launch, the server might be busy. Perform the following step.
2. Optional (if the update does not launch). Disconnect the USB cable from the computer, reconnect the USB cable, then try the Windows Update again.

Update Software Using a USB Storage Device

To update the EagleEye Director II camera software version, you can use a USB storage device. Ensure that the device is in FAT32 format and has at least 200MB of available space.

Note: To update software from version 1.x to version 2.x, use this method or the Windows update method.

Procedure

1. Create a folder named `plcm-eed2-cmd` in the USB root directory.
 2. Create a subfolder named `update` in the `plcm-eed2-cmd` folder.
 3. Save the EagleEye Director II update image (`polycom-eagleeyedirector II-xxx-2.0.0.xx-xxxxx.img`) to the `update` folder.
 4. Plug in the camera power cable and allow it to fully power on.
The LED turns solid blue.
 5. Plug the USB storage device into the camera.
The LED blinks amber and then turns solid blue in a few seconds.
-

Note: Do not unplug the USB storage device during the software update process.

6. Unplug the camera power cable, but leave the USB storage device plugged in.
7. Plug in the camera power cable and allow it to power on.
When the software upgrade is complete, the LED blinks blue and powers on. Once the blue LED is solid and no longer blinking, the restart is complete.
8. Remove the USB storage device.
The update log is saved in the `[USB root directory]/eed2out/[EED2 SN]/log`.

Troubleshooting

Topics:

- [Diagnostics](#)
- [Restart Your Camera](#)
- [Reset Your Camera](#)
- [Perform a Factory Restore](#)

To troubleshoot issues, use the camera diagnostics, such as viewing indicator lights and audio meters, or downloading log files.

Related reference

[Indicator Lights](#) on page 9

Diagnostics

To assist in troubleshooting, access system diagnostics.

Test the Microphones

The diagnostic audio meters measure the strength of audio signals from 10 internal microphones, far-end site audio, and any device connected to the line-in audio.

The meters display audio signals for each microphone and the line-in ports. The audio signals function only when the associated input is connected.

Procedure

1. Select **Diagnostics > Audio**.
2. To test the microphones, speak aloud and verify that you see signals for the four vertical microphones and six horizontal microphones.

If no signal indication appears for a specific microphone, manually power off the camera and then power it back on.

Download Log Files

Download log files to assist in troubleshooting.

Procedure

1. In the web interface, select **Diagnostics > Logs**.
2. Select **Download Logs**.
3. Download the system log .tar file and specify a location on your computer to save the file.

Call Detail Report (CDR)

The Call Detail Report (CDR) provides a history of the EagleEye Director II camera and a RealPresence Group Series system during calls. You can enable the CDR in the RealPresence Group Series system web interface.

The camera people count report is sent to RealPresence Group Series system during a call. The system generates a people count report at beginning of a call and the end of a call, and provides a maximum people count. For more details, refer to *RealPresence Group Series Administrator Guide*.

Restart Your Camera

You can restart your camera from the web interface. During a call, you can't restart your camera.

Procedure

- » In the camera web interface, select **General Settings > Restart**.
The camera restarts and returns to the login screen.

Reset Your Camera

To reset the configurations on your camera to the factory defaults, use the reset system setting.

Note the following details regarding camera resets:

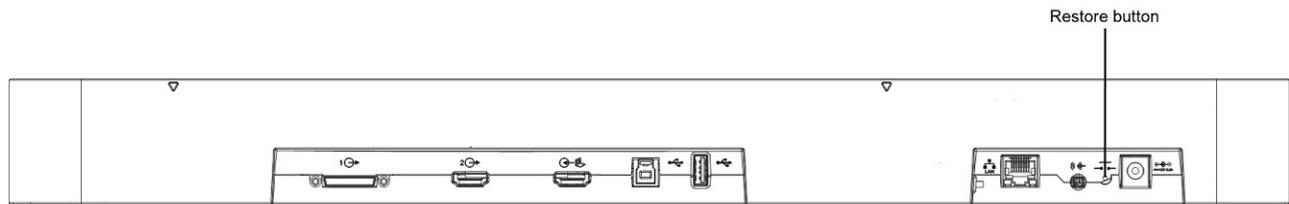
- This operation doesn't remove imported CA certificates.
- During a call, you can't reset your camera.

Procedure

- » In the camera web interface, select **General Settings > Reset System**.
Your camera restarts.

Perform a Factory Restore

A factory restore completely erases the system and restores it to the factory software version and default configuration. During a factory restore, the LED indicator on the front of the EagleEye Director II camera alternates between blue and amber.



Note: Do not power off the camera during the factory restore process.

Procedure

1. With the camera is powered off, insert a straightened paper clip through the pinhole and press and hold the **Restore** button.
2. While holding the **Restore** button, plug in the power cable to power on the camera.
3. Hold the **Restore** button for an additional five seconds, and then release it when the LED alternates amber and blue.

The camera enters factory restore mode. The factory restore takes approximately eight minutes to complete. The camera automatically powers off and back on when the process is complete.

Related reference

[Indicator Lights](#) on page 9