



Integration Note

Manufacturer:	Axis
Model Number(s):	214PTZ
Minimum Core Module Version:	4.0 Build 1452
Comments:	AXIS IP Utility 2.21.0, Camera Firmware 4.40
Document Revision Date:	2/13/2013

OVERVIEW AND SUPPORTED FEATURES

Installing this Axis camera can be broken down into the following steps:

1. Install cameras at desired locations, and pull power and Cat5 cabling as needed. Refer to the Axis documentation for mounting details.
2. Connect the cameras electrically to the home network and configure the cameras. See **Camera Configuration** below.
3. Integrate the cameras into the **g!** system and test proper operation. This step is outlined in **g! Configuration Details**.

THE AXIS CAMERAS SUPPORT THE FOLLOWING FEATURES:

Audio In: The camera includes a microphone jack. Sound that is picked up by the camera can be played at the Viewer interface.

Motion Detection: The camera's motion detection feature is supported to trigger events in the Event Mapper. To initiate the **g!** DVR recording, for example.

Any feature not specifically noted as "supported" is not supported.

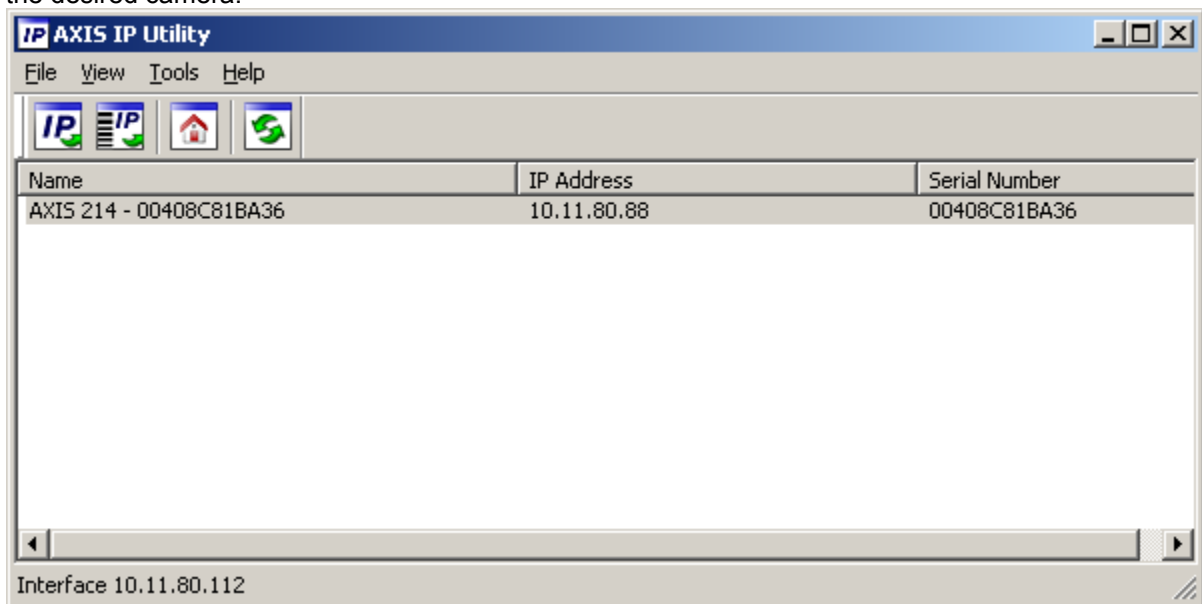
CAMERA CONFIGURATION

The camera configuration is done with software provided by Axis, which must be run from a computer with Windows also connected to the same network as the camera. Alternatively the camera can be setup by searching for it on the network and browsing to its IP to access its web server setup pages.

The software program from Axis is the **AXIS IP Utility**, and the version used for this document is shown in the header above.

CAMERA SETTINGS

1. Start the AXIS IP Utility Setup Program.
2. Wait a moment to allow the software to find the camera: the following screen appears, then select the desired camera.



3. Click the "Home" button in the utility to get to the camera's configuration screen. You will be prompted for a user name and password. The default user name is "root", and the default password is "root"
4. Click the "Setup" Link in the upper right corner of the home page.

5. Select “TCP/IP” under “Basic Setup” on the left.

The screenshot shows the 'Basic TCP/IP Settings' page for an AXIS 214 PTZ Network Camera. The left sidebar contains a 'Basic Configuration' menu with options: Instructions, 1. Users, 2. TCP/IP (selected), 3. Date & Time, 4. Video & Image, 5. Audio, and other configuration sections. The main content area is titled 'Basic TCP/IP Settings' and includes sections for Network Settings, IPv4 Address Configuration, IPv6 Address Configuration, and Services. In the IPv4 section, 'Enable IPv4' is checked, and the 'Use the following IP address' option is selected. The IP address is set to 192.168.0.80, the subnet mask to 255.255.255.0, and the default router to 192.168.0.1. A 'Test' button is next to the IP address field. The Services section has 'Enable ARP/Ping setting of IP Address' checked, with 'Settings...' buttons for notification options and the AXIS Internet Dynamic DNS Service. 'Save' and 'Reset' buttons are at the bottom.

6. Set the IP address, Subnet mask, and Default router to the desired value, we suggest setting the first camera to 192.168.0.80, the second to 192.168.0.81, and so forth. See example above.
7. Click Save then Click ok to the warnings, wait 30 seconds, reboot the camera then browse to the camera at the new IP.
8. From the cameras homepage click setup.
9. Select “Date & Time” from the Basic Configurations menu on the left. Configure for your location.

The screenshot shows the 'Date & Time Settings' page for an AXIS 214 PTZ Network Camera. The left sidebar is the same as the previous screenshot, with 'Date & Time' selected. The main content area is titled 'Date & Time Settings' and includes sections for Current Server Time, New Server Time, and Date & Time Format Used in Images. In the New Server Time section, 'Synchronize with computer time' is selected. The time zone is set to GMT-05 (New York, Toronto, Washington DC), and 'Automatically adjust for daylight saving time changes' is checked. The date and time are set to 2008-12-17 14:53:12. In the Date & Time Format Used in Images section, the date format is set to MM/DD/YYYY and the time format is set to 24h with a resolution of 1 second. 'Save' and 'Reset' buttons are at the bottom.

10. The camera can be mounted to a ceiling. If this is true in your situation, select “**Video & Image**” under “**Basic Settings**” and select “**180**” from the “**Rotate Image:**” dropdown.

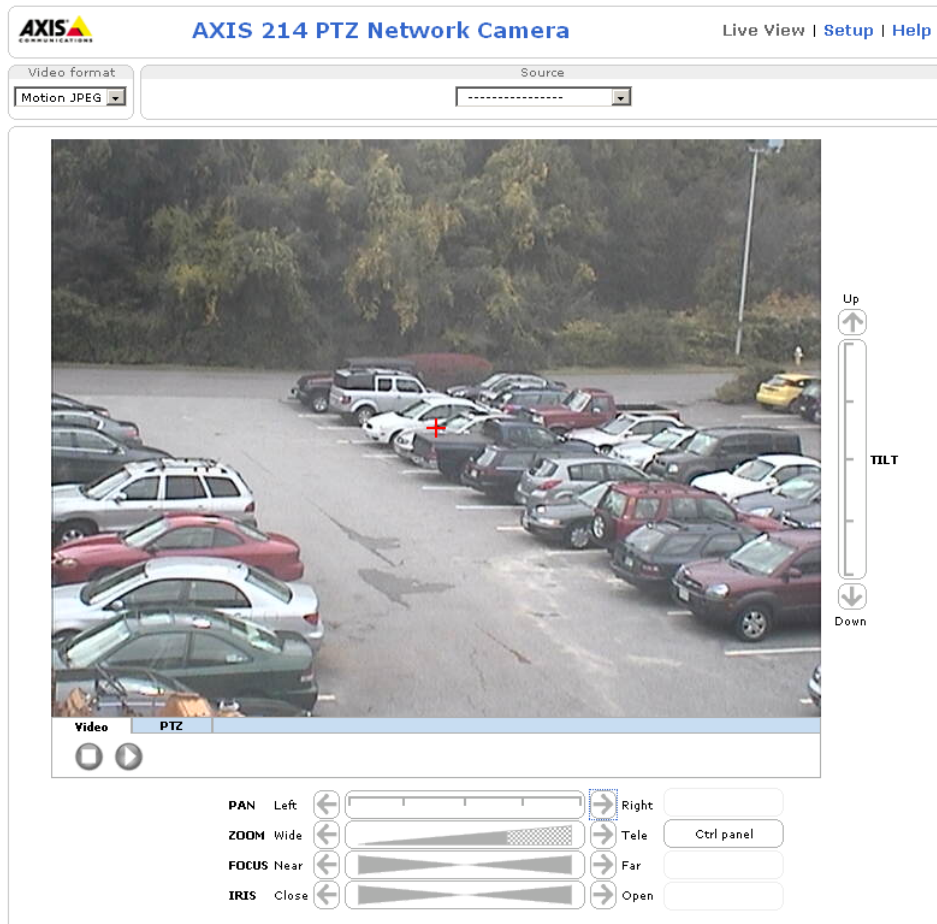
The screenshot shows the 'Image Settings' page for an AXIS 214 PTZ Network Camera. The left sidebar contains a navigation menu with 'Basic Configuration' expanded, showing 'Users', 'TCP/IP', 'Date & Time', 'Video & Image' (selected), 'Audio', 'Live View Config', 'PTZ Configuration', 'Event Configuration', 'System Options', and 'About'. The main content area is titled 'Image Settings' and includes a help icon. It is divided into three sections: 'Image Appearance', 'Overlay Settings', and 'Video Stream'. 'Image Appearance' includes settings for Resolution (4CIF 640 x 480), Aspect ratio correction (checked), 4CIF de-interlacing (checked), Compression (30), Rotate image (0 degrees), White balance (Auto), and Color setting (Color). 'Overlay Settings' includes checkboxes for 'Include overlay image at the coordinates: X 0 Y 0', 'Include date', 'Include time', and 'Include text', along with text color (white) and background color (black) dropdowns, and a 'Place text/date/time at top of image' dropdown. 'Video Stream' includes 'Maximum video stream time' (Unlimited) and 'Maximum frame rate' (Unlimited). At the bottom, there is a 'Test' button and 'Save' and 'Reset' buttons.

11. If you will be using a Microphone with the camera select “**Audio**” under basic settings. Check the Enable audio box, set the audio mode, encoding, and bit rate as shown below then click save.

The screenshot shows the 'Audio Settings' page for an AXIS 214 PTZ Network Camera. The left sidebar is the same as in the previous screenshot, with 'Audio' selected under 'Basic Configuration'. The main content area is titled 'Audio Settings' and includes a help icon. It is divided into three sections: 'Enable Audio', 'Audio Channels', and 'Audio Input'. 'Enable Audio' has a checked 'Enable audio' checkbox. 'Audio Channels' includes 'Audio mode' (Simplex - PTZ Network Camera microphone only) and a checkbox for 'Send the sound from the active client to all other clients'. 'Audio Input' includes 'Source' (Microphone), 'Input sensitivity' (High), 'Enable microphone power' (checked), 'Input gain' (0 dB), 'Encoding' (G726), 'Bit rate' (32 kbits/s), and 'Alarm level' (50%). At the bottom, there is an 'Audio Output' section with 'Output gain' (0 dB) and a 'Note: The Java applet only supports G711 audio. QuickTime supports G711.' Below the note are 'Save' and 'Reset' buttons.

12. Click “**Save**” and wait for a few moments: once the settings have been saved you should see a small dialog box that confirms the changes were made. **Reboot the camera** to ensure the settings take effect.

13. Start a browser and type the camera's IP Address into the address bar: you should see the following:

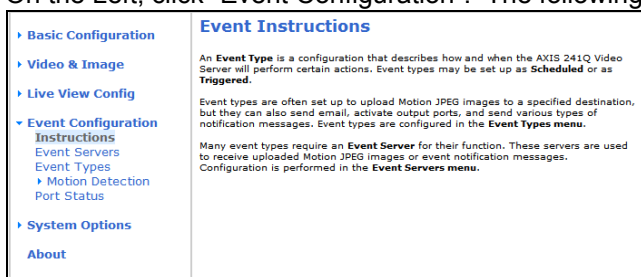


MOTION DETECTION SETUP

Motion detection setup is only required if you will be using motion detection by the camera as an event map trigger. This is most commonly used for the **g!** DVR recording.

Note: We recommend using **Internet Explorer** as your browser when setting up motion detection as we have found this process may be slow with other browsers.

1. Access the Video Server's configuration by opening a web browser and entering the camera's IP address. Enter the root user credentials.
2. Click the "Setup" link in the upper right.
3. On the Left, click "Event Configuration". The following window will appear:

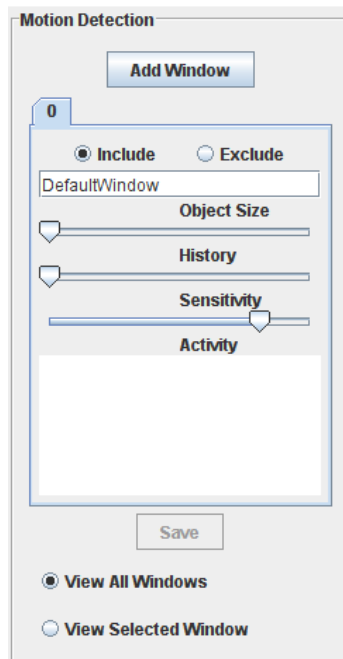


4. Select "Motion Detection" to access the following screen:



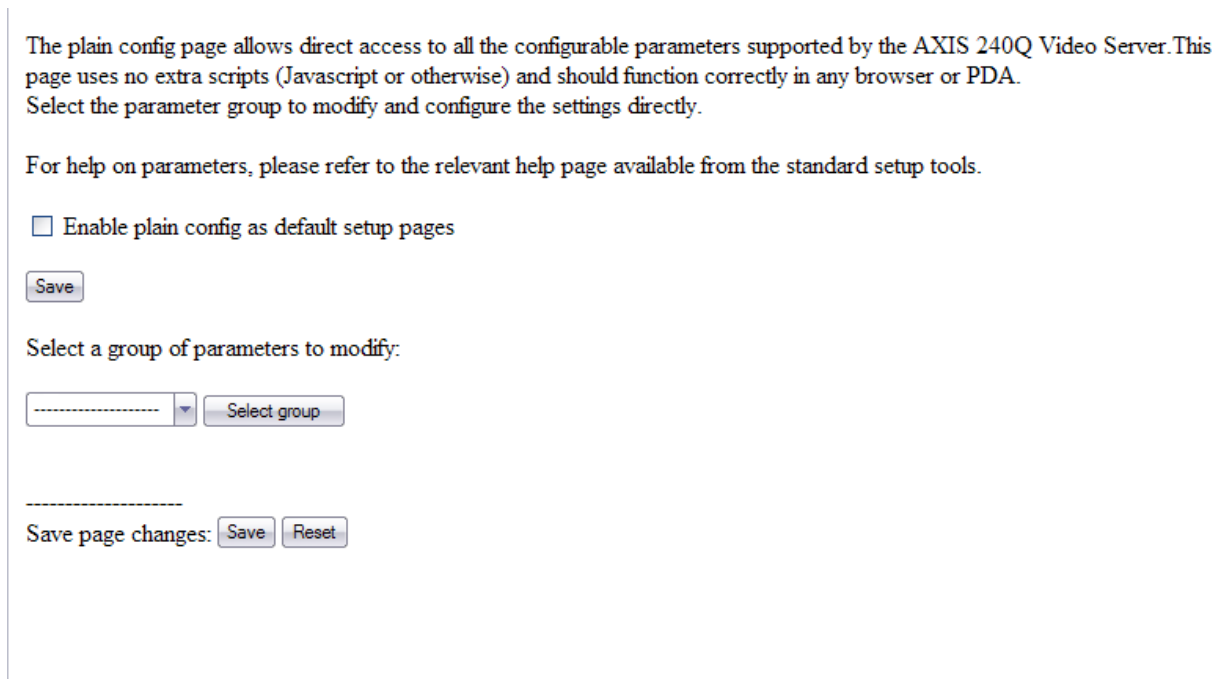
5. Click **Add Window** to add an include window to the image. For motion detection the camera will need at least one include window to define the area to look for motion. Additional include windows may be added as well as exclude windows to mask motion from items that may frequently move but are not desired to be considered motion.
6. For example: To limit the area where the server is looking for motion, decrease the size of the Default Window and drag it to center on the area of the image where relevant motion is expected. This will limit the number of false triggers due to background motion, thus conserving disk space. If you wish to capture all motion that the camera sees, this window can be left full screen. Additional windows can also be added, and the windows can be set to "Include" or "Exclude" depending on your preference. An "Exclude" window might be useful if there is a tree or flag in the image that is frequently moved by the wind, and it is not desired to trigger and event if the tree or flag moves.

7. For configuring the Motion Detection sensitivity there are three values that can be individually set for all included windows, “Object Size”, “History”, and “Sensitivity”:



- Object Size refers to the number of pixels that need to change to trigger a motion event. The larger the object size, the less sensitive the detection. It is recommended that this be set to the minimum value possible.
- History refers to the length of time a moving object remains in the window before it is considered to be a non-moving part of the scene. A high setting will continue to trigger motion as long as the object is moving. A low setting will trigger motions when the object initially moves but then will be ignored. It is recommended that this slider be set high somewhere above 80%.
- Sensitivity refers to the difference in luminance from one frame to the next. A low setting will only trigger motion if there is a great difference in luminance, i.e. a bright object suddenly appears on a dark background. It is recommended to set this slider as high as possible. Typically greater than 90%. This setting will most likely need adjustment during initial setup to obtain the most reliable motion detection.

8. Select “**System Options**” on the left, then choose “**Advanced**”, then “**Plain Config**” to access the screen below:



9. Using the dropdown box, select **“Image”** as the group of parameters to modify. In the first section, “Image”, check the box for **“Trigger Data Enabled”**:

Image	
Referrers enabled:	<input type="checkbox"/>
Referrers:	<input type="text"/>
Max viewers:	<input type="text" value="20"/> [0..20]
Nbr of configs:	<input type="text" value="5"/>
Overlay path:	<input "="" type="text" value="/etc/overlays/axis("/>
Privacy mask type:	<input type="text" value="None"/>
Date format:	<input type="text" value="YYYY-MM-DD"/>
Own date format:	<input type="text" value="%F"/>
Own date format enabled:	<input type="checkbox"/>
Time format:	<input type="text" value="24"/>
Own time format:	<input type="text" value="%T"/>
Own time format enabled:	<input type="checkbox"/>
Time resolution:	<input type="text" value="1"/>
Trigger data enabled:	<input checked="" type="checkbox"/>

10. Scroll down to the entry for Image Trigger Data and place a check in the box labeled **“Motion Level Enabled”**:

Image IO TriggerData:	
IO enabled:	<input checked="" type="checkbox"/>
Audio enabled:	<input checked="" type="checkbox"/>
Motion detection enabled:	<input checked="" type="checkbox"/>
Motion level enabled:	<input checked="" type="checkbox"/>
Video loss enabled:	<input checked="" type="checkbox"/>
User triggers:	<input type="text"/>
Save page changes:	<input type="button" value="Save"/> <input type="button" value="Reset"/>

11. Click Save then close the browser
12. **Reboot the camera every time any motion detection adjustments are completed on the server to allow g! to reconnect and begin detecting motion.**

See the DVR Technical Note for information on setting up motion detection in the g! Software.

g! CONFIGURATION DETAILS

The following table provides settings used in the **g!** Configurator. Please refer to the *Configurator Reference Guide* for more details.

In the table below:

- “<User Defined>”, etc. Type in the desired name for the item.

Devices	Variable Name	Setting
Communication Device	N/A (See Note 1)	N/A (See Note 1)
Video Cameras	Name	<User Defined> (Default: AXIS 214PTZ)
	Device Type	AXIS 214PTZ
	Location	<User Defined> (Not Required)
	IP Address	<User Defined> (Default: 192.168.0.80) (See Note 2)
	Port	80
	Login Name	<User Defined> (Default: root)
	Password	<User Defined> (Default: root)
	Default Resolution	<Select> (Default: <Don't Change>)
	Record Tolerance	<Select> (Default: <0% (Keep All Frames)>)
	Motion Detect	<Select> (Default: Enabled)
	Software Motion Trigger	<Select> (Default: 0%) (See Note 3)

Notes:

1. No **Communication Device** is needed: just add **Video Cameras**.
2. By default, set the first camera to 192.168.0.80, the second to 192.168.0.81, and so on.
3. Refer to the DVR integration note for details.