

# Troubleshooting an AXIS IP Network Camera installation



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## **AXIS Communications Academy Webinar Series**

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### Audio Conference Details

*Conference Telephone Number: 1-212-444-0108*

*Participant Code: 7766324731*

*Participant audio will be muted until Q & A session following the presentation*

## This is Axis

- > Founded in 1984
- > IT company driving the shift towards digital video surveillance products
- > Global partnerships through distributors, resellers and system integrators
- > Offering the market's broadest portfolio of network video products
- > Focused on Network Video Solutions (99%)
- > Worldwide presence in more than 20 countries, 850 employees\*
- > Listed on NASDAQ OMX, under the ticker AXIS

\*June, 30 2010

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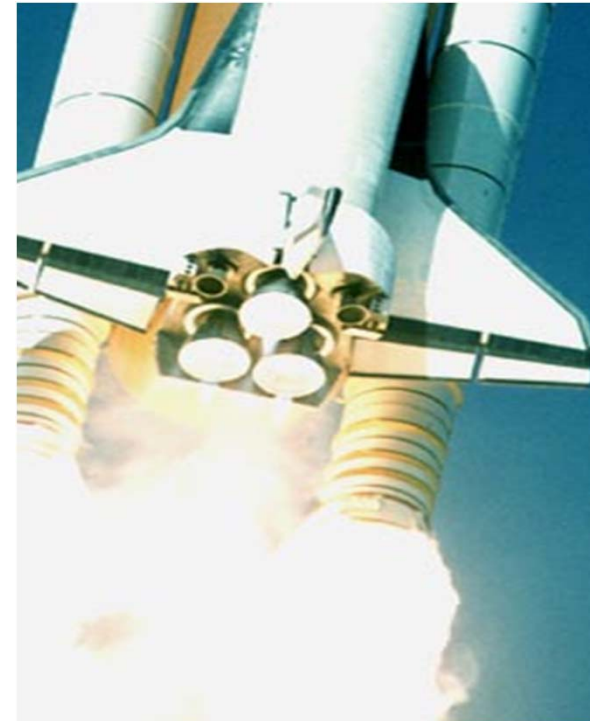
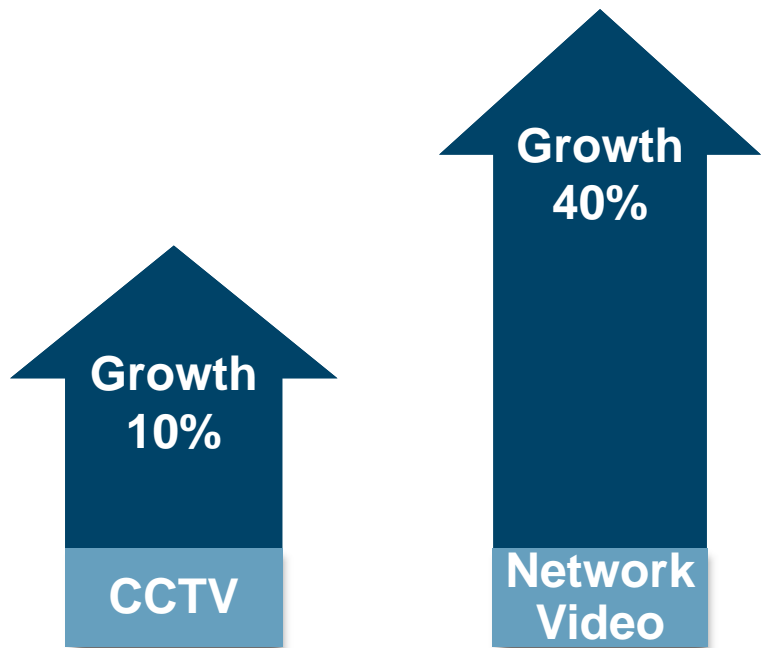
## Axis' two main product areas

- > Network Video Solutions
  - Worldwide #1 position
  - More than 2,000,000 network cameras installed
- > Network Print & Scan
  - Worldwide #2 position in Print
  - Installed base of more than 3,000,000 units

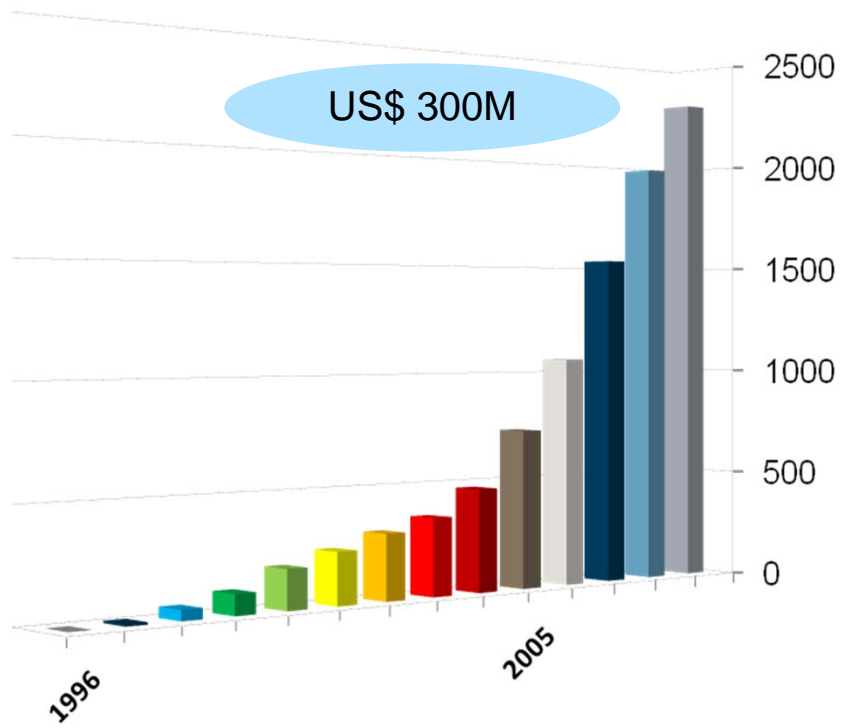


## Growth of the global market

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## Axis video sales 1996-2009



## Emerging market trends

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- > Digital replacement of analog equipment
- > Open architecture software
- > Using and sharing IT networks for surveillance
- > The merger of Security and IT functions
- > Strong security concern



*source: J.P. Freeman*

## Emerging technology trends

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**HDTV**

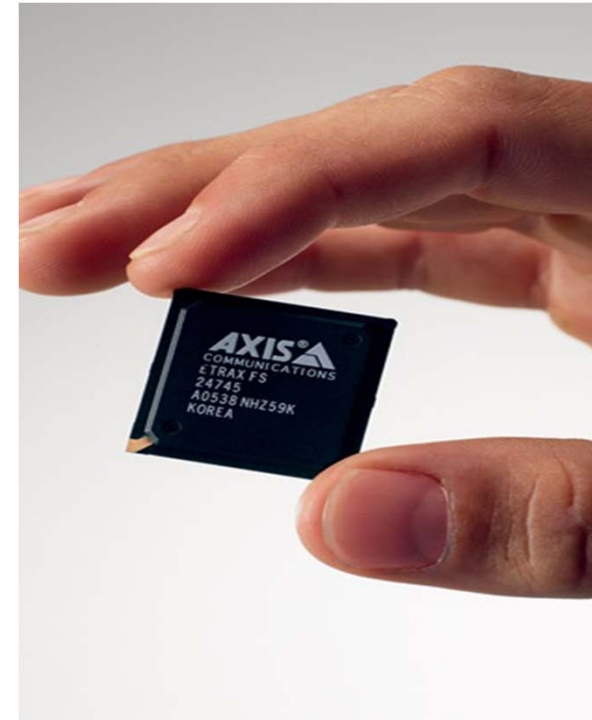
**Compression**

**Intelligence**



## Technology leadership

- > Continuously high investment in R&D
- > In-house developed ASIC technology
  - ETRAX for networking
  - ARTPEC for network video functions
- > Innovative network solutions
  - 1991 First to introduce a multi-protocol print server
  - 1996 First to introduce a network camera
- > Open standards



# Troubleshooting 101



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## Troubleshooting basics...

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- > Use ACM to aid troubleshooting process
- > Verify the cabling adheres to the IEEE standards
- > If using PoE, verify sufficient power available from the switch for all devices connected
- > Try multiple ports on PoE switch or multiple power adaptors
- > Verify IP addressing is correct & subnet or VLAN configuration is correct
- > Ensure AXIS Media Control applet is installed for video viewing

## Keep with the standards...

### Extract of Ethernet Standard variations

Type	Data rate	Transmission media	Distance
10BASE-T	10 MBit/s	Twisted Pair Cable (TP) Cat. 3	100 m
100BASE-TX	100 MBit/s	Twisted Pair Cable (TP) Cat. 5	100 m
100BASE-FX	100 MBit/s	Fiber Optic Cable (MMF)	2.000 m
1000BASE-SX	1.000 MBit/s	Fiber Optic Cable (MMF)	500 m
1000BASE-LX	1.000 MBit/s	Fiber Optic Cable (MMF or SMF)	2 m to 5 km
1000BASE-T	1.000 MBit/s	Twisted Pair Cable (TP) Cat. 5e	100 m
10GBASE-LX4	10.000 MBit/s	Fiber Optic Cable (MMF or SMF)	2 m to 10 km
10GBASE-T	10.000 MBit/s	Twisted Pair Cable (TP) Cat. 6a to 7	100 m

# Power over Ethernet Overview

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- > The current standard for nominal powering is 802.3af
  - 48 V DC, 15.4 W max on the switch or midspan side (Power Sourcing Equipment – PSE)
  - 12.95 W on the device/camera side (Powered Device – PD)
  - Often referred to as "PoE"
- > Does not affect data transmission rates or maximum cable lengths
- > Backwards compatible (will not damage equipment not using PoE)
- > High Powered/PoE+ standard is 802.3at
  - 48 V DC, 30.0 W max on the switch or midspan side (Power Sourcing Equipment – PSE)
  - 25.5 W on the device/camera side (Powered Device – PD)
  - Often referred to as "Hi-PoE"

# Power over Ethernet powering standards

Table 1 IEEE 802.3af PSE and Powered Device Power Classifications

<b>Class</b>	<b>Usage</b>	<b>Minimum Power Levels Output at the PSE</b>	<b>Maximum Power Levels at the Powered Device</b>
0	Default	15.4W	0.44 to 12.95W
1	Optional	4.0W	0.44 to 3.84W
2	Optional	7.0W	3.84 to 6.49W
3	Optional	15.4W	6.49 to 12.95W
4	Reserved for Future Use	Treat as Class 0	Reserved for Future Use: A class 4 signature cannot be provided by a compliant powered device

# Identifying network properties

- > ipconfig /all command showing IP addressing information, including subnet and DHCP status

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

R:\>ipconfig /all

Windows IP Configuration

Host Name . . . . . : laprunara
Primary Dns Suffix . . . . . : axis.com
Node Type . . . . . : Peer-Peer
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : se.axis.com
                                      axis.com
                                      axis.se

Ethernet adapter Wireless Network Connection:

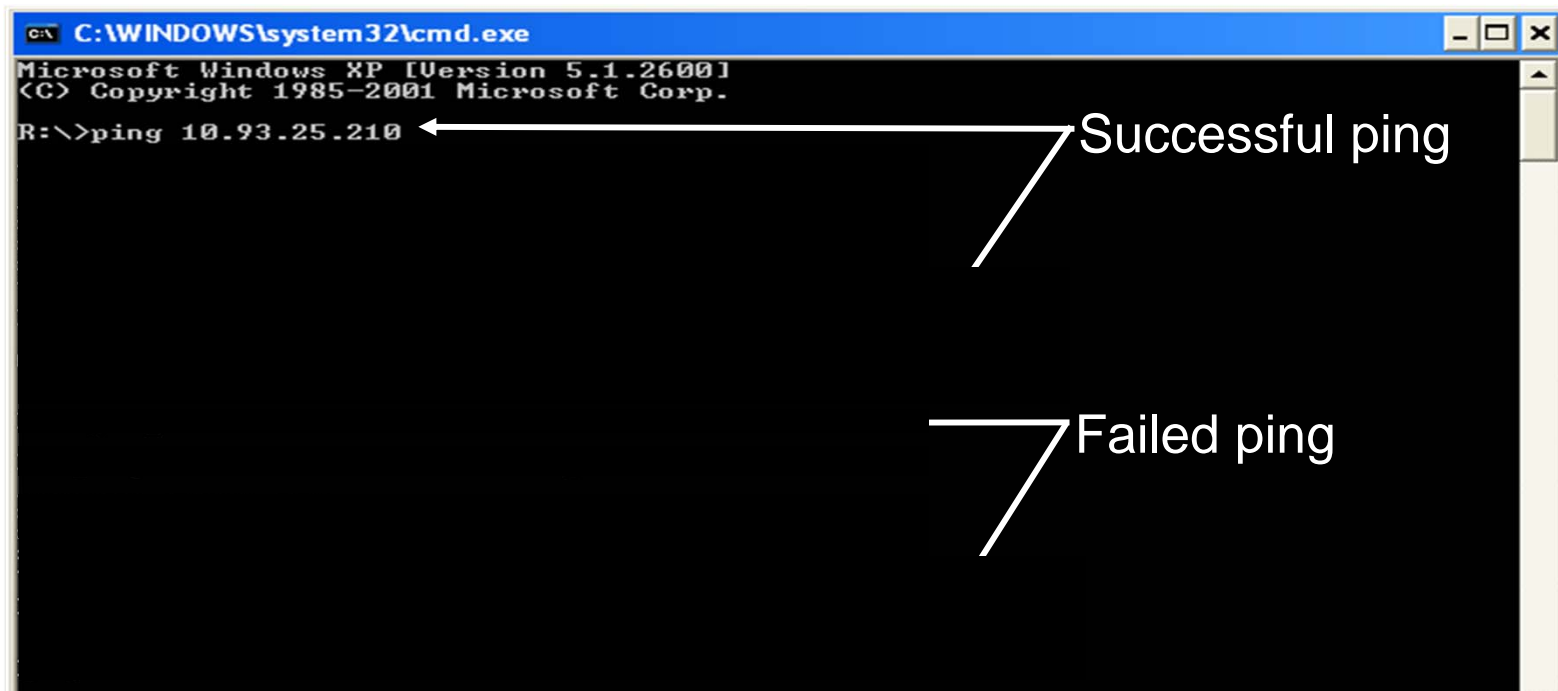
Media State . . . . . : Media disconnected
Description . . . . . : Intel(R) Wireless WiFi Link 4965AG
Physical Address. . . . . : 00-13-E8-4A-47-ED

Ethernet adapter Local Area Connection:

Connection-specific DNS Suffix . . . : se.axis.com
Description . . . . . : Intel(R) 82566MM Gigabit Network Connection
Physical Address. . . . . : 00-1B-24-73-DD-D0
Dhcp Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . . : Yes
IP Address. . . . . : 10.92.127.142
Subnet Mask . . . . . : 255.255.0.0
Default Gateway . . . . . : 10.92.0.1
DHCP Server . . . . . : 10.0.2.43
DNS Servers . . . . . : 10.0.2.200
                                      10.0.2.201
                                      10.0.2.202
Primary WINS Server . . . . . : 10.0.5.50
Lease Obtained. . . . . : den 5 juni 2008 11:38:00
Lease Expires . . . . . : den 5 juni 2008 12:04:40
```

# Internet Control Message Protocol (ICMP)

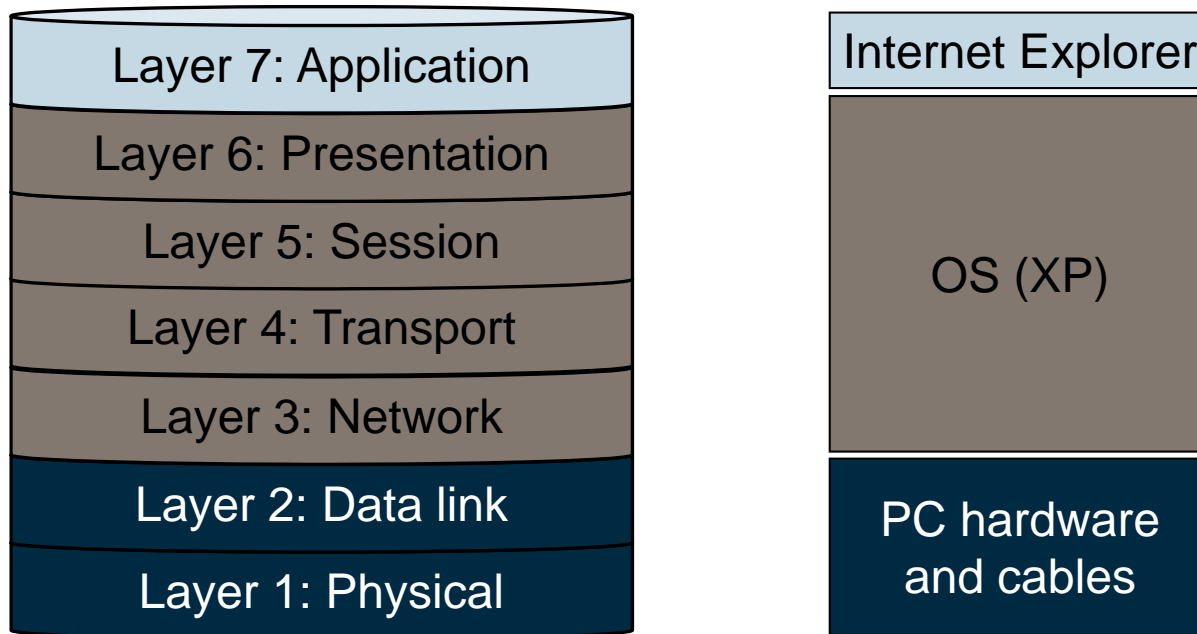
- > Using ping command to verify device connectivity



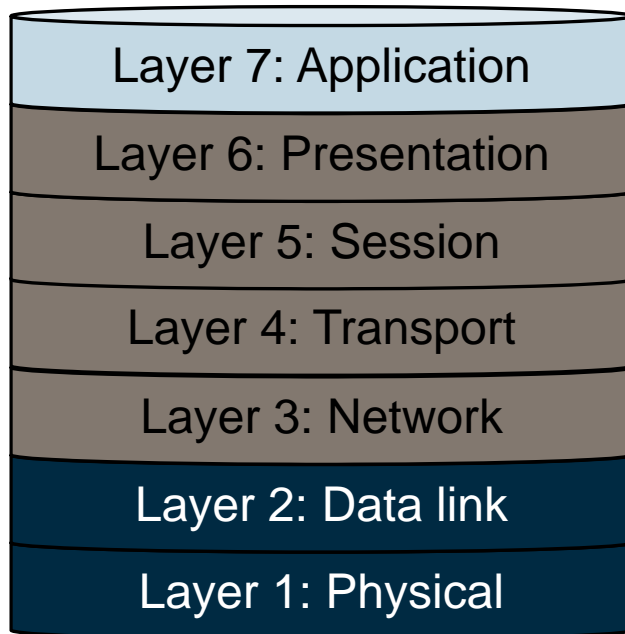
The image shows a screenshot of a Windows XP command prompt window. The title bar reads "C:\WINDOWS\system32\cmd.exe". The window content displays the following text: "Microsoft Windows XP [Version 5.1.2600] Copyright 1985-2001 Microsoft Corp. R:\>ping 10.93.25.210". A white arrow points from the text "Successful ping" to the command "ping 10.93.25.210". Another white arrow points from the text "Failed ping" to a blank space below the command.

## A good place to start...

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## A good place to start...The Physical Layer



Can you access the device via FTP?

Does your browser have any errors displayed?

Do you have access to camera but no video is displayed?

Does ACM indicator an HTTP connection error?

Are any devices connected to that switch accessible?

Is the LED indicators correctly flashing?

Is the device powered on?

Is the cable connected?

# Axis Camera Management

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- Use ACM for an aid to troubleshooting
- > Automatic discovery of AXIS devices on the network either on the local network or other subnets
- > Utilize the Detail View for camera status
- > Create a template from the camera to restore the camera in the event a factory default is required
- > ACM can aid in the firmware upgrade process to ensure the latest software is installed

## Axis Camera Management Error Messages

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- > **IP Invalid** - The device's static IP address is outside the valid IP range of the local network, but it is still possible to configure the device, upgrade it, etc. using AXIS Camera Management.
- > **Not Accessible** - The device cannot be contacted, which may be due to a problem with the network connection or the device itself
- > **IP Invalid/Not Accessible** - A combination of both IP Invalid and Not Accessible
- > **Credentials Mismatch** - The user name and password used by AXIS Camera Management to access the device does not match any of the administrator accounts on the device
- > **HTTP failed (Ping or UDP ok)** - AXIS Camera Management can access the device using PING and/or receives packets from the device using UDP, but the connection fails when using HTTP or HTTPS. This situation can be caused by incorrect proxy settings, an HTTP/HTTPS mismatch or neither HTTP nor HTTPS has been enabled in the device
- > **Invalid Certificate** - The device cannot be accessed because HTTPS is enabled and only devices with a valid certificate can be contacted
- > **IP/Credentials Invalid** - Both the IP and Credentials are invalid
- > **No Credentials** - AXIS Camera Management does not have credentials specified for the device

# AXIS Camera Management – Status of cameras

Choose the detailed view to show camera status

The screenshot shows the 'AXIS Camera Management' application window. The interface includes a menu bar (File, Edit, View, Tools, Help), a toolbar with various icons, and a 'Groups' sidebar on the left. The main area displays a table of camera devices. The table has columns for Name, Status, Address, Serial Number, Model, and Firmware. Two rows are circled in red: one with 'Credentials Mismatch' and another with 'Not Accessible'. Arrows point from these rows to text labels on the right side of the image.

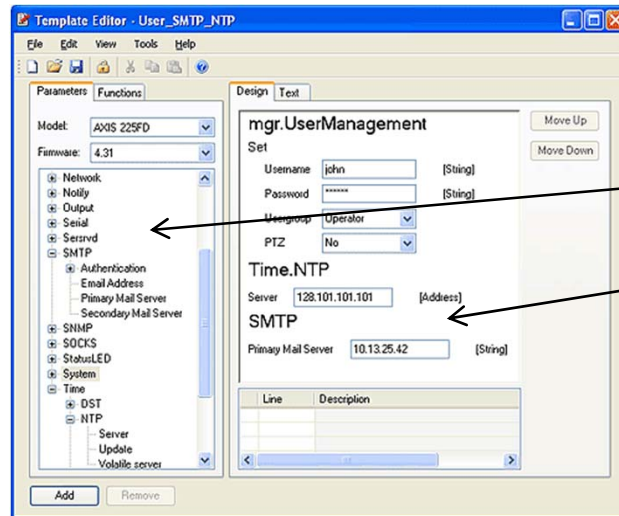
Name	Status	Address	Serial Number	Model	Firmware
AXIS 207 - 0040...	OK	10.92.140.207	00408C6D9B5D	AXIS 207	4.40
AXIS 207 - 0040...	OK	gaus.se.axis.com	00408C70AF41	AXIS 207	4.40
AXIS 207 - 0040...	OK	andersr2.se.axis.co...	00408C70C92F	AXIS 207	4.40.1
AXIS 207W - 004...	OK	dh10-91-127-13.se...	00408C77D779	AXIS 207W	4.33
AXIS 207W - 004...	OK	10.93.37.207	00408C7A19D0	AXIS 207W	4.40.1
AXIS 211 - 0040...	OK	dh10-92-127-222.s...	00408C65738F	AXIS 211	4.40
AXIS 211 - 0040...	OK	dh10-81-127-35.se...	00408C6F9997	AXIS 211	4.40
AXIS 211A - 004...	OK	dh10-85-127-225.s...	00408C182147	AXIS 211A	4.40
AXIS 211A - 004...	OK	dh10-91-127-141.s...	00408C70D9F4	AXIS 211A	4.40
AXIS 215 PTZ - ...	OK	dh10-85-127-64.se...	00408C1828A9	AXIS 215 P...	4.40
AXIS 215 PTZ - ...	OK	10.92.43.215	00408C1828E2	AXIS 215 P...	4.40
AXIS 211A - 004...	Credentials Mismatch	dh10-94-127-122.s...	00408C718C27	AXIS 211A	4.40
AXIS 211A - 004...	Not Accessible	169.254.52.249	00408C718BAA	AXIS 211A	4.40

Incorrect username/password

Device no longer accessible

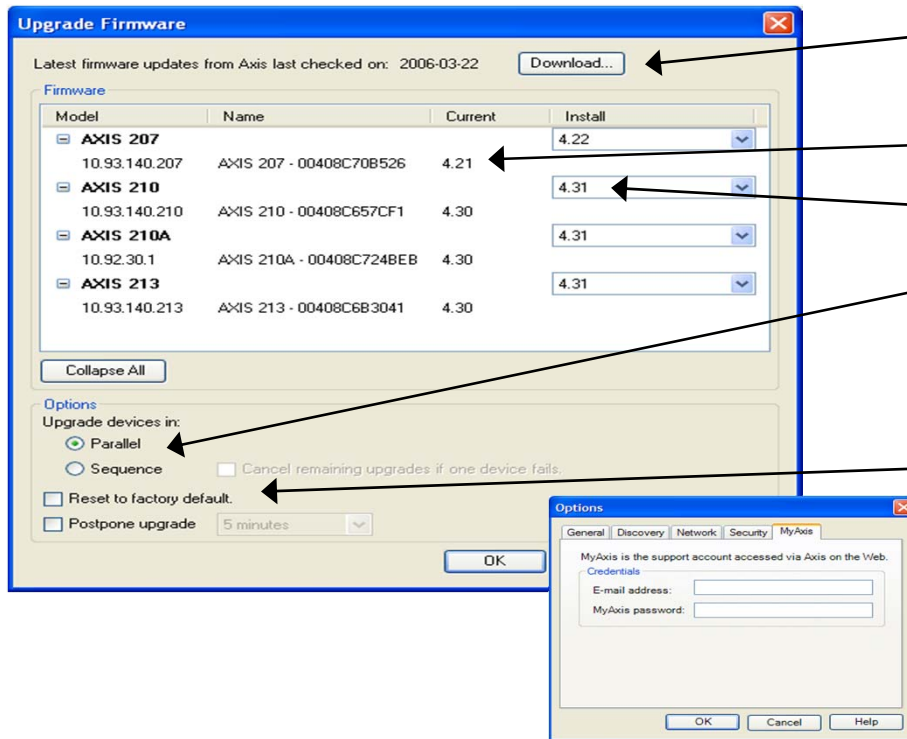
# AXIS Camera Management Templates

- > Configure all device parameters, either Online directly into the unit or Offline – into a file for upload to single or multiple units
- > Backup and restore functionality



select and add parameters from the sections on the left  
enter/change the parameter values in the *Design* area on the right.

# AXIS Camera Management – FW upgrade



Download latest firmware from Axis  
(using *myAxis*)

Select unit(s) to upgrade

Select firmware

Select upgrade mode

– Parallel

– Sequential

Upgrade options

– Reset to factory defaults

– Stop on errors

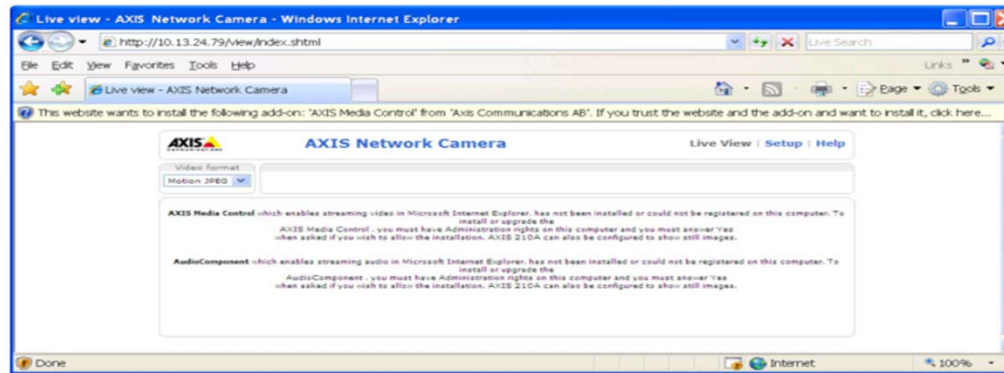
# **AXIS Media Control: Installation and troubleshooting**



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[www.axis.com](http://www.axis.com)

# Install AXIS Media Control - ActiveX component



3. (Windows Vista, Windows 2008 Server) A User Account popup will ask if you want to install AMC. Click Continue.

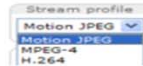


4. A Security Warning dialog will appear. Click Install to proceed with the installation.



# Install ActiveX H264

On the Live View page of your Axis camera, you can select to view live video over your network or over the Internet, using either Motion JPEG, MPEG-4 or H.264. If you select H.264, you will be prompted to install an H.264 decoder.



**Note:** A system administrator may prevent users from installing and updating the H.264 decoder. If you have a problem installing the MPEG-4 decoder, please see your system administrator.

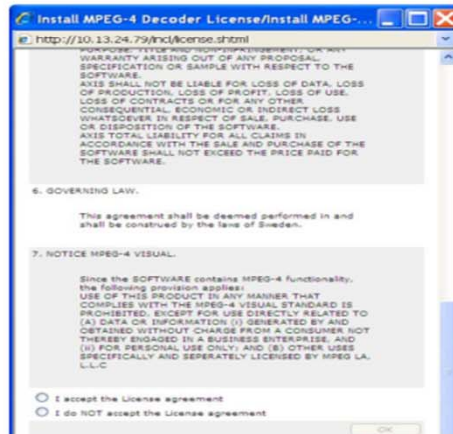
1. To start the installation, select the [Click here to install or upgrade the H.264 Decoder](#) link in the Live View page as shown in the figure below.

[Click here to install or upgrade the H.264 Decoder.](#)

The H.264 Decoder, which enables streaming video in Microsoft Internet Explorer, has not been installed or could not be registered on this computer.

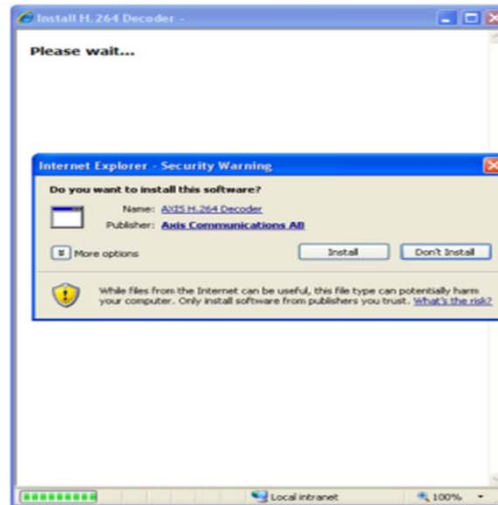
To [install or upgrade](#) the H.264 Decoder, you must have Administration rights on this computer and you must answer Yes when asked if you wish to allow the installation. AXIS Q7401 Video Encoder can also be configured to show still images.

2. Read through the H.264 license agreement that appears, and if you agree to the conditions, select I accept the License agreement and click OK.

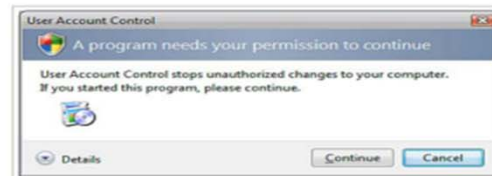


# Install ActiveX H264

3. An Internet Explorer Security warning popup will ask if you want to continue the installation. Click **Install**.



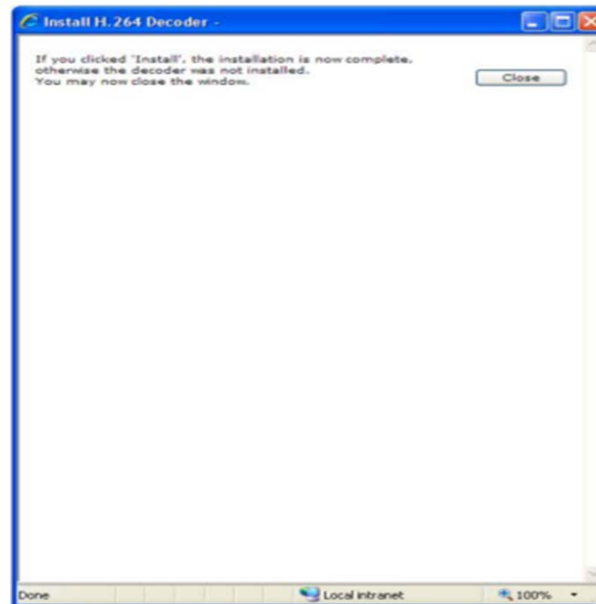
4. (Windows Vista, Windows 2008 Server) A User Account popup will ask if you want to continue the installation. Click **Continue**.



# Install ActiveX H264

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5. Click Close to complete the installation.



## AXIS Media Control – ActiveX component troubleshooting

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*If no video is displayed, verify the AMC applet is installed.*

### **Steps to take when Axis Media Control can't be installed:\***

1. *Trusted site:* Add your Axis device as a trusted site; Open Tools > Internet Options > Security > Trusted Sites Press "Sites..." button  
Add the Axis device's IP-address, then click on the general tab and delete your temporary internet files, then close out Internet Explorer and restart
2. Confirm that you have logged in with *Administration rights* on the computer
3. In Vista, disable 'User Access Control'
4. Answer "Yes" when asked if you wish to *allow the installation*.
5. Go to your Add/Remove programs and delete 'Axis Media Control Embedded'. Then go back & access the camera again, the download should complete successfully.
6. Temporarily disable any *firewall or Antivirus programs*. They may prevent installing AMC or ActiveX components.
7. Under Tools>Internet Options>Security>*Security level for this zone:* Temporarily set this to low if possible.
8. Under Tools>Internet Options>Advanced> Scroll down to 'Security' and temporarily enable '*allow active content to run in files on My Computer*'
9. Confirm *no proxy server* is in use. Under Tools>Internet Options>Connections>LAN Settings. If one is, check 'Bypass Proxy for local addresses' and specify the camera's IP address.
10. Download the *latest version of AMC* from here: <http://www.axis.com/techsup/software/amc/software.php>

\*Created by lmcgrory

\*Created on 9/25/07

[www.axis.com](http://www.axis.com)



# Image Issues



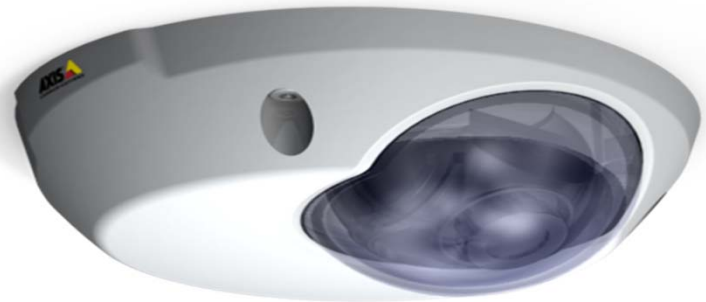
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[www.axis.com](http://www.axis.com)

## What are some common Image Issues?

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- Blurred images
- Halo effects
- Color effects
- Focus Issues
- Lines in Picture
- Black Image
- Camera Noise
- Interlacing



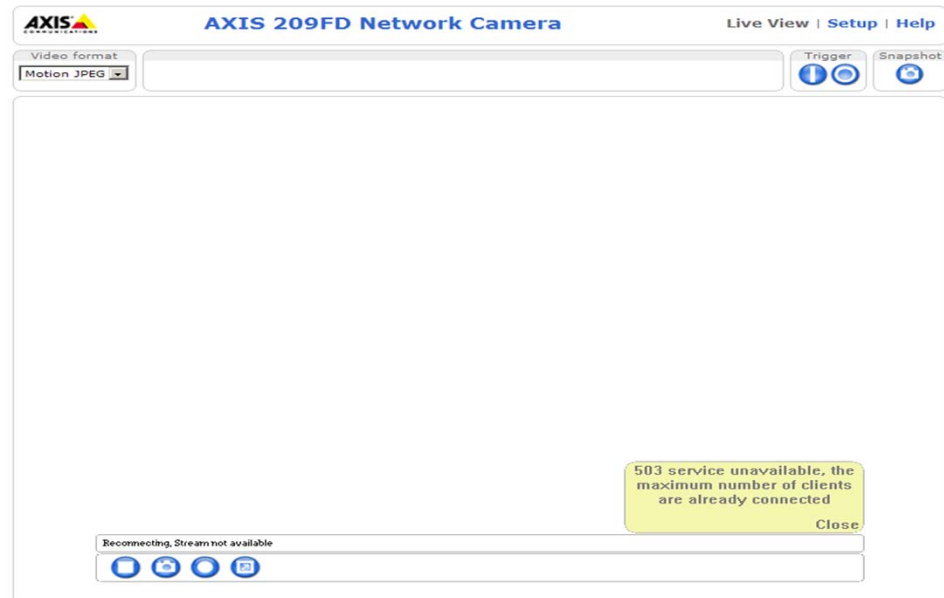
## Common Image quality issues

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- > 503 problem and no video
  - Check Connection list to see how many clients are connected
  - Try factory default and isolated environment before doing RMA
- > Loosing connection to video and white image might be both HW and FW issue
- > Black image/white image – DC iris/connection to sensor
- > For low light
  - Priority between Low noise/Motion
- > Focus

## 503 error

- > Number of clients really exceeded – see Connection list
- > Hardware
- > Firmware
- > Try in isolated environment, access <http://IP/axis-cgi/jpg/image.cgi>
  - *Strange configuration with empty default router, always try factory default and simple configuration IP, valid subnet mask and default router*



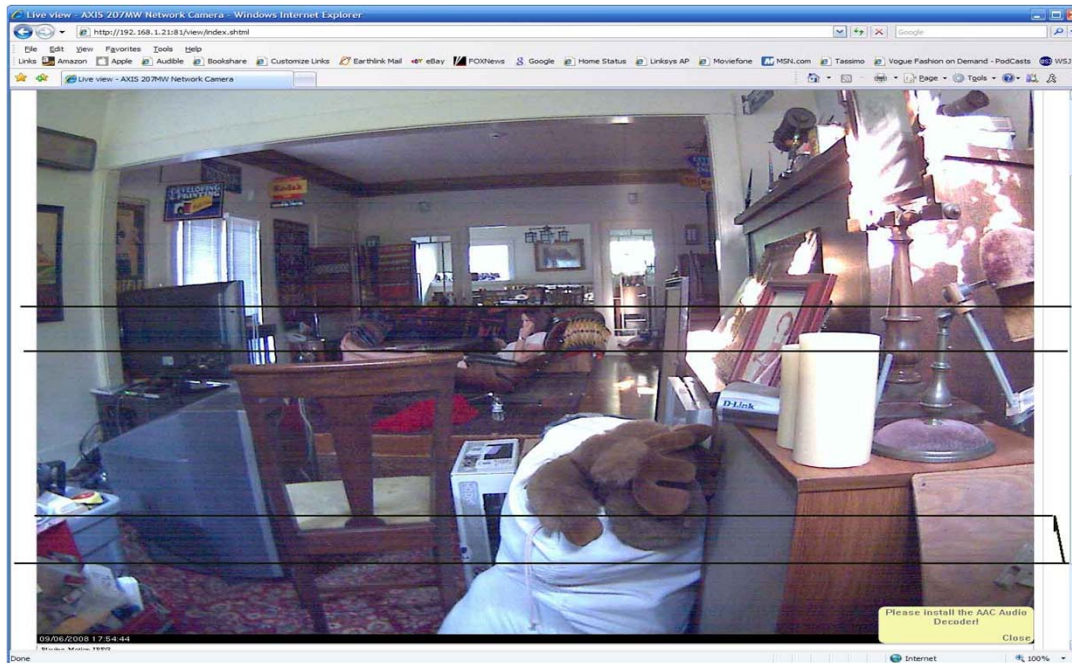
## Interlace image appearance with fast moving objects

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A solution is to verify the deinterlace filter is enabled in the encoder or a progressive scan camera is used

# Noisy Image



Noise lines in an image might be a symptom of an image sensor problem

## Soft focus in B & W mode (image slightly out of focus)



Soft focus in black & white mode with a day/night camera most likely due to a non IR-corrected lens being used.

## Black/white or differently colored image

- > When up to hardware:
  - Black – DC iris connector or regulation electronics might be broken
    - On P1346 you need to restart the camera after changing to DC iris lens
  - White – Could also be a sensor problem or connection to the sensor problem inside the camera
  - Different other effects, possibly the issue in hardware, but not excluded that firmware can be improved or compensate
  - Keep the camera inside the operating temperature/humidity range



## IR cut filter issue?

- > Purple toned image possibly indicates an IR Cut filter malfunction
- > On day/night cameras, switching the IR cut filter off/on a few times can sometimes reset the filter and remedy the issue
- > Careful not to confuse with white balance settings, try fixed options as a test



## Motion and low noise priority in low light

- > When **Low noise is priority**, the camera will increase exposure time to 1/6 s (or configured Max Exposure time and then start to apply gain
- > When **Motion is priority**, the camera will increase the exposure time to 1/30 s and then start to add gain, if not enough, it will go to Max Exposure time
- > **Prioritize motion** to avoid motion blur (increase frame rate in low light), increases noise
  - And/or decrease max shutter time
- > Noise is normally decreased either by increasing Max Exposure time (drawback motion blur) or decreasing Max gain



## Image Quality issue fixes?

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- > Verify sufficient lighting in the scene, add light if necessary
- > Verify camera is not looking into the lighting source
- > Verify DC-iris (if equipped) is enabled
- > If possible, try to refocus the camera without housing/dome in place
- > Try using a different lens to verify functionality
- > Check and clean the lens and bubble if a dome camera
  - lens can be cleaned with Isopropanol and a Q-tip
- > Use another browser or PC to connect to the camera
- > If housing is used, test image with camera removed from housing

## Image Quality issue fixes?

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- > Try adjusting focus manually in different scenes if not satisfied with the auto focus on PTZ cameras/domes to determine if HW issue
- > PTZ Camera/dome can auto adjust to light sources, use manual focus on the scene
- > Firmware v5.06.1 for P13 Series 'saved back focus after restart' fix
- > Use an IR corrected lens for day/night cameras
- > Use Advanced focus, adjust focus window on P13 Series
- > Calibration might need to be done on P33 Series (see web interface)

# Connectivity issues



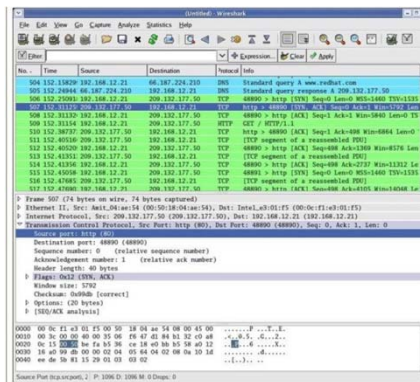
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[www.axis.com](http://www.axis.com)

# General Connectivity Troubleshooting steps and documentation

In some cases, the Axis camera can disconnect from the network after a period of uptime. A restart of the camera often resolves this issue. As the camera is part of a network installation and often used with recording software applications, the identification of the cause for this disconnection can be difficult. Many variables are involved.

Because the issue is usually random, a network trace can be useful. If possible, using a tool like Wireshark, make a network trace of regular communication to and from the camera.



## General Connectivity Troubleshooting steps and documentation

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*Verify latest firmware version is installed on the camera(s) with this behavior  
Perform a power restart and back up the current configuration with ACM*

### **Detail and verify the following:**

- How many video products (including other models/vendors) are installed?
- Are the cameras installed indoor/outdoor?
- What is that environmental temperature when a camera disconnects?
- Are the cameras powered via PoE or alternative power supplies?
- Does it happen on a regular basis? When?
- Does it happen exactly after the same number of days?
- Does it happen at a specific time (hour)?

When the issue occurs, is it possible to access the camera in an alternate methods, such as: *ping, ftp, setup pages, Live View*

## General Connectivity Troubleshooting steps and documentation

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*Are there any exact steps you can take from restart of the product to make it to stop responding? If yes, detail as closely as possible.*

**Document as much of the following info as possible:**

Which power connection is used?

- Cable length and wire diameter from power supply to camera
- Voltage and current output of the power supply
- What is the measured voltage at camera when disconnected and when operating?

LED status on the camera

If PoE is used:

- Which PoE switch/Midspan?
- How many units are connected to the same PoE switch?
- What are the power classification classes used by these units?
- Is the heater used?
- Is the fan running/used?
- Was there recently a power failure?

## General Connectivity Troubleshooting steps and documentation

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### *Network check list*

- Which switch model are the cameras connected to?
- What is the status of the LEDs on camera and switch?
- Which cable is used?
  1. shielded (STP) or unshielded (UTP)
  2. standard (Which brand?) or custom made
  3. cable length
- How many cameras are connected to one switch?

### *Software check list*

- Which video stream, M-JPEG, MPEG-4 or H.264, is used?
- How many users have access at the time of disconnections? This includes FTP, telnet connections & Software applications as well.
- Is there an error message displayed in the application?
- Does the application also become unresponsive or crash?

## General Connectivity Troubleshooting steps and documentation

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If S/W application is used:

- Which application is used?
- Which stream and which resolution, compression, frame rate?
- Snapshot of the browser error message
- Which security applications are used?
- Firewall, proxy server, virus scanner and network sniffer

### *Browser check list*

- Which browser is used?
- Which video stream - M-JPEG or MPEG-4 is used?
- How many users have access at the time of disconnections?
- Does deleting the temporary cache of the browser helps

## General Troubleshooting steps



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[www.axis.com](http://www.axis.com)

# Power-cycling a camera with network access – Using ACM

The screenshot displays the AXIS Camera Management (ACM) web interface. The main window shows a list of cameras with columns for Name, Status, Address, Serial Number, Model, and Firmware. A context menu is open over the selected camera 'AXIS 214 - 0040...', showing options like 'Assign IP...', 'Maintenance', 'User Management', and 'Configuration'. The 'Maintenance' submenu is expanded, highlighting 'Restart'.

Name	Status	Address	Serial Number	Model	Firmware
172.20.28.216 - ...	Not Accessible	172.20.28.216	00408CA30E29	AXIS P3344	5.07
AXIS 214 - 0040...	OK	192.168.207.211	00408C813CE8	AXIS 214	4.49
AXIS 215 PTZ - ...	Not Accessible	172.20.28.217	00408CA6CD20		
AXIS M1054 - 00...	Not Accessible	172.20.28.215	00408CAC5124		
AXIS M1114 - 00...	Not Accessible	172.20.28.214	00408CAC2D9E		
AXIS M3114 - 00...	Not Accessible	172.20.28.210	00408CA32B5E		
AXIS M3204 - 00...	Not Accessible	172.20.28.209	00408CA32B3F		
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128D8	AXIS P1344	5.06.1
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128D9	AXIS P1344	5.06.1
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128DA	AXIS P1344	5.06.1
AXIS P1344 - 00...	Not Accessible	169.254.33.48	00408CA128DB	AXIS P1344	5.06.1
AXIS P1344 - 00...	Not Accessible	169.254.32.42	00408CA128DC	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128DD	AXIS P1344	5.06.1
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128DE	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128E0	AXIS P1344	5.06.1
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128E1	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA12916	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA1291B	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA1291C	AXIS P1344	5.06.1
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA1291D	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA12926	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA12927	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA12935	AXIS P1344	5.06.1

# Factory Default a camera with network access – Using ACM

The screenshot displays the AXIS Camera Management (ACM) web interface. The main window shows a list of devices with columns for Name, Status, Address, Serial Number, Model, and Firmware. A context menu is open over the selected device 'AXIS 214 - 0040...', showing options like 'Assign IP...', 'Maintenance', 'User Management', and 'Configuration'. The 'Maintenance' submenu is expanded, highlighting 'Restart' and 'Factory Default...'. The left sidebar shows a tree view of device groups, including 'All Devices (75)', 'New Devices (75)', 'Warnings/Errors (74)', and 'My Groups'.

Name	Status	Address	Serial Number	Model	Firmware
172.20.28.216 - ...	Not Accessible	172.20.28.216	00408CA30E29	AXIS P3344	5.07
AXIS 214 - 0040...	OK	192.168.207.211	00408C813CE8	AXIS 214	4.49
AXIS 215 PTZ - ...	Not Accessible	172.20.28.217	00408CA6CD20		
AXIS M1054 - 00...	Not Accessible	172.20.28.215	00408CAC5124		
AXIS M1114 - 00...	Not Accessible	172.20.28.214	00408CAC2D9E		
AXIS M3114 - 00...	Not Accessible	172.20.28.210	00408CA32B5E		
AXIS M3204 - 00...	Not Accessible	172.20.28.209	00408CA32B3F		
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128D8	AXIS P1344	5.06.1
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128D9	AXIS P1344	5.06.1
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128DA	AXIS P1344	5.06.1
AXIS P1344 - 00...	Not Accessible	169.254.33.48	00408CA128DB	AXIS P1344	5.06.1
AXIS P1344 - 00...	Not Accessible	169.254.32.42	00408CA128DC	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128DD	AXIS P1344	5.06.1
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128DE	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128E0	AXIS P1344	5.06.1
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA128E1	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA12916	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA1291B	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA1291C	AXIS P1344	5.06.1
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA1291D	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA12926	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA12927	AXIS P1344	5.06
AXIS P1344 - 00...	IP Invalid/Not Acces...	192.168.0.90	00408CA12935	AXIS P1344	5.06.1

# Power-cycling a camera with network access – Using camera interface

The screenshot shows the web interface for an AXIS 214 PTZ Network Camera. The page title is "Server Maintenance". On the left is a navigation menu with categories like Basic Configuration, Video & Image, Audio, Live View Config, PTZ Configuration, Event Config, System Options, and About. The "Maintenance" option under System Options is selected. The main content area has three sections: "Maintain Server" with buttons for "Restart", "Restore", and "Default"; "Upgrade Server" with a text input, a "Browse..." button, and an "Upgrade" button; and "Backup" and "Restore" sections, each with a text input, a "Browse..." button, and a corresponding action button. A red arrow points from the text "Click on 'Restart'" to the "Restart" button.

Click on 'Restart'

# Factory Default a camera with network access – Using camera interface

**AXIS** COMMUNICATIONS  
AXIS 214 PTZ Network Camera  
Live View | Setup | Help

Basic Configuration  
Video & Image  
Audio  
Live View Config  
PTZ Configuration  
Event Config  
System Options  
Security  
Date & Time  
Network  
Ports & Devices  
**Maintenance**  
Support  
Advanced  
About

### Server Maintenance

**Maintain Server**

**Restart** Restart the AXIS 214 PTZ Network Camera.

**Restore** Resets all parameters, except the IP parameters, to the original factory settings.

**Default** Resets all parameters to the original factory settings.

**Upgrade Server**  
Upgrade the AXIS 214 with the latest firmware.  
Specify the firmware to upgrade to:  **Browse...** and click **Upgrade**

**Note:** Do not disconnect power to the unit during the upgrade. The unit restarts automatically after the upgrade has completed. (1-10 minutes.)

**Backup**  
Save all parameters and user-defined scripts to a backup file. **Backup**

**Restore**  
Use a saved backup file to return the unit to a previous configuration.  
Specify the backup file to use:  **Browse...** and click **Restore**

Click on 'Restore' to preserve the IP address or 'Default' to hard default the camera

## Factory Default an AXIS P13xx Camera without network access

---

### Using the Control Button

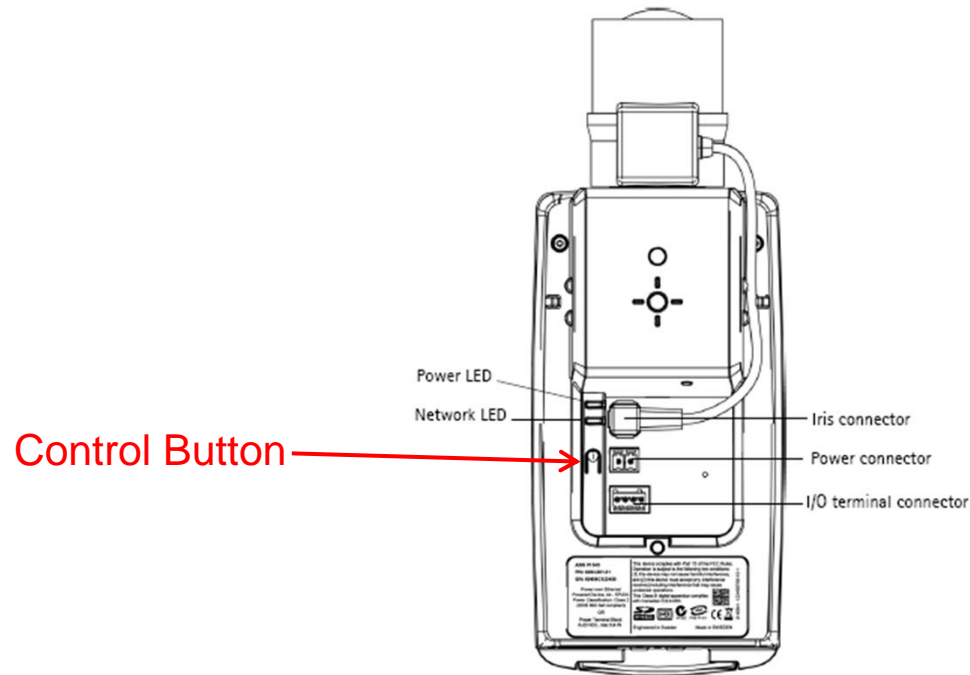
This will reset all parameters, including the IP address and the focus position, to the factory default settings:

1. Disconnect power from the camera.
2. Press and hold the Control button and reconnect power.
3. Keep the Control button pressed until the **Status indicator color changes to amber (this may take up to 15 seconds)**.
4. Release the Control button. When the Status indicator changes to green (which may take up to 1 minute), the process is complete and the camera has been reset. The unit now has the default IP address 192.168.0.90
5. Re-assign the IP address, for instructions see the Installation Guide supplied with the camera.
6. Refocus the camera.

*This will reset all parameters, including the IP address, to the Factory Default settings*

## Factory Default an AXIS P13xx Camera without network access

Bottom view



*This will reset all parameters, including the IP address, to the Factory Default settings*

## Factory Default an AXIS fixed dome camera without network access

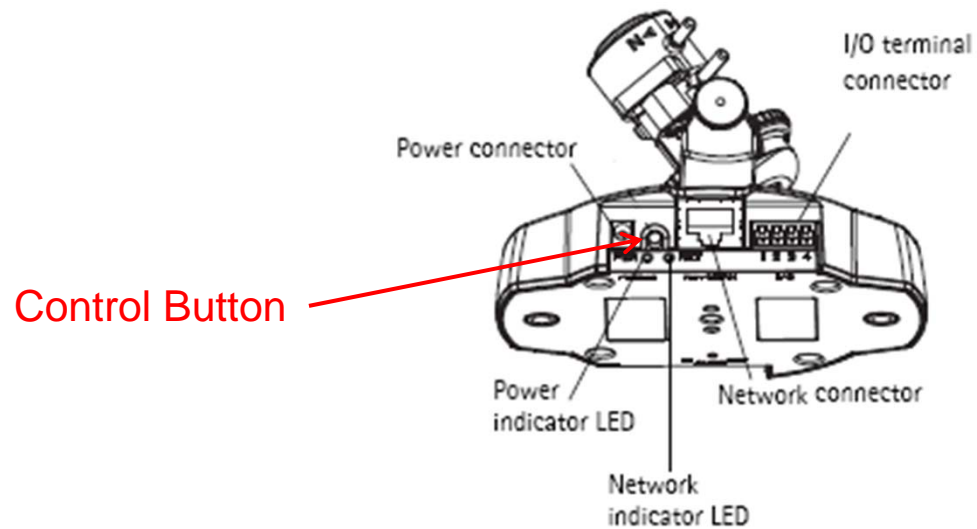
---

### **Using the Control button and the Power button**

1. Remove the dome ring and dome cover, this will automatically disconnect power from the camera. 2. Press and hold the Control button and the Power button at the same time. 3. Continue to hold down the Control button and the Power button until the Status indicator flashes amber (this may take up to 15 seconds). 4. Release the Control button. When the Status indicator changes to green (which may take up to 1 minute) the process is complete and the camera has been reset. The unit now has the default IP address 192.168.0.90 **Note: The Status indicator will display green for 10 seconds only. After that it will be unlit. Refer to the Status indicator table on page 6 for more information.** 5. Release the Power button. 6. Replace the dome ring and dome cover, this will automatically reconnect power to the camera. 7. Re-assign the IP address, see the Installation Guide for instructions.

*This will reset all parameters, including the IP address, to the Factory Default settings*

## Factory Default an AXIS fixed dome camera without network access



*This will reset all parameters, including the IP address, to the Factory Default settings*

## Factory Default a Q6032-E/233D without network access

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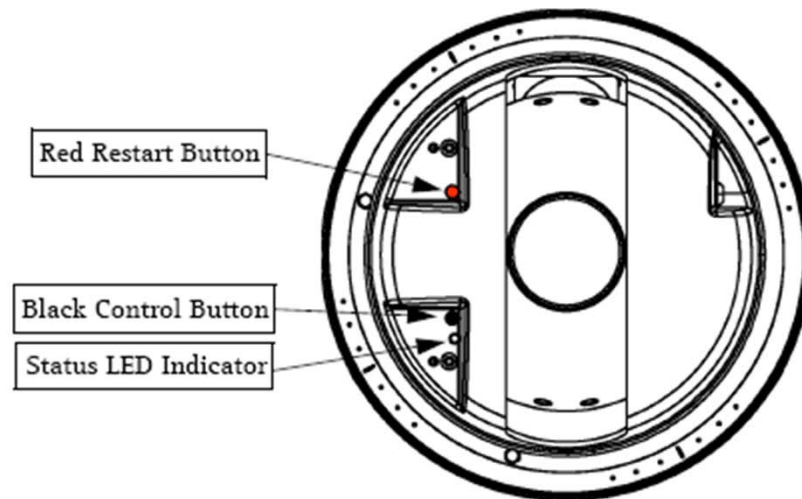
### **Using the Control button and the Power button**

1. Remove the dome ring and dome cover, this will automatically disconnect power from the camera. 2. Press and hold the Control button and the Power button at the same time. 3. Continue to hold down the Control button and the Power button until the Status indicator flashes amber (this may take up to 15 seconds). 4. Release the Control button. When the Status indicator changes to green (which may take up to 1 minute) the process is complete and the camera has been reset. The unit now has the default IP address 192.168.0.90 **Note: The Status indicator will display green for 10 seconds only. After that it will be unlit. Refer to the Status indicator table on page 6 for more information.** 5. Release the Power button. 6. Replace the dome ring and dome cover, this will automatically reconnect power to the camera. 7. Re-assign the IP address, see the Installation Guide for instructions.

*This will reset all parameters, including the IP address, to the Factory Default settings*

## Factory Default a Q6032-E/233D without network access

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*This will reset all parameters, including the IP address, to the Factory Default settings*

## Additional Issues & Troubleshooting



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[www.axis.com](http://www.axis.com)

## Event troubleshooting

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- > Detailed description on what happens and when
  - Is it trigger (like input) or action that fails
- > The Server Report to see configuration is necessary to have
- > Catch the time of failure in the log and the specific configuration
- > Check any firewalls that might block connection with event server, especially when seeing timeouts and connection refused messages in the log
- > Network trace might show what happens more exactly if the issue is in connection to the event server
- > When having a triggered event to get best coverage, use both pre and post buffer and then run unbuffered upload.

## FTP troubleshooting

---

- > Connection refused - no FTP service started, camera's FTP client not on the list of allowed clients
- > Timeout in trying connecting - network problems, firewall blocking connection, trace might show what happens
- > Disable tcp/ECN in Plain Config of camera
- > When error code available:
  - [http://en.wikipedia.org/wiki/List\\_of\\_FTP\\_server\\_return\\_codes](http://en.wikipedia.org/wiki/List_of_FTP_server_return_codes)
  - error 530 - incorrect username/password
  - error 550 - No such file or directory (user missing permission to access the specific file or directory)
  - error 452 - Requested action not taken. Insufficient storage space in system.

# Wireless Troubleshooting

## > Security options

- WPA-/WPA2-PSK
  - A pre-shared key (PSK) is used to initiate WPA security. The pre-shared key is entered on the access point and on each device on the wireless network. The key can be entered either as Manual hex, as 64 hexadecimal (0-9, A-F) characters, or as a Passphrase, using 8 to 63 ASCII characters.
- WPA-/WPA2-Enterprise
  - It uses the 802.1X authentication framework with TKIP or AES encryption. Network users trying to gain access are verified through an authentication server.
- WEP (Wired Equivalent Protection)
  - Select **Open** or **Shared Key System Authentication**, depending on the method

LED	Color	Description
Wireless LED status	Green	Steady for connection to a wireless network. Flashes for network activity.
	Red	Steady for no wireless network connection. Flashes when scanning for wireless networks.
	Unlit	Wired mode.

# AXIS wireless cameras – Troubleshooting

## Wireless issues

- > Known compatibility issue with access points supporting 802.11n:  
*Disable the 802.11n protocol and run only in b/g mode*
- > Hidden SSID issue with M10 series:  
*(fixed in the latest firmware)*
- > Disconnection issues with some access points /routers:  
*Disable the UPnP and Bonjour protocols because these protocols affect the wireless connection*
- > Read the [Wireless Technologies Guide](#) available on Axis web.
- > Check this document available on Inside:  
[How to setup wireless network](#)



## PTZ Troubleshooting

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- > No PTZ Controls visible on live view usually indicates an issue with the PTZ driver.
  - a power restart of the camera can remedy this issue.
- > Camera does not respond to PTZ commands could be a driver, communication or hardware issue.
- > Check Dome status on System Options/Maintenance. Perform a Test.
- > Check power supply/PoE used, ensure it is sufficient power for the model camera.
- > Check if there is freedom of movement for the pan/tilt function.

## General Troubleshooting steps to take



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[www.axis.com](http://www.axis.com)

# Camera specific help topics

**AXIS** COMMUNICATIONS **AXIS 214 PTZ Network Camera** [Live View](#) | [Setup](#) | [Help](#)

- ▶ Basic Configuration
- ▶ Video & Image
- ▶ Audio
- ▶ Live View Config
- ▶ PTZ Configuration
- ▼ **Event Config**
  - Instructions
  - Event Servers
  - Event Types**
  - Motion Detection
  - Port Status
- ▶ System Options
- About

## Event Types

**Event Type List**

Name	Status	Enabl.	Priority	Trig./Sched.	Actions*
------	--------	--------	----------	--------------	----------

[Add triggered...](#) [Add scheduled...](#) [Copy](#) [Modify...](#) [Remove](#)

\* Fu=FTP upload, Hu=HTTP upload, Eu=Email upload, O=Output port, En=Email notification, Hn=HTTP notification, Tn=TCP notification, N=Night vision mode, P=PTZ preset, G=Guard Tour

[Click here for help on this page](#)

# Camera specific help topics

**AXIS COMMUNICATIONS**

Live View | Setup | Help

Event Types

An event type is a set of parameters describing how and when the AXIS 214 PTZ Network Camera will perform certain actions. Event types may be set up as **Triggered** or **Scheduled**, according to requirements. See below for an explanation of the two types.

An event type may result in a single event, or it may result in many more, all depending on how often the conditions governing its behavior are met.

The most common kind of event type will upload images to a specified destination. Other actions performed by event types can include the sending of email, the activation of an output port, and the transmission of various types of notification.

**Notes:**

- It is important to note that adding a new event will stop any event that is currently running. A scheduled event will automatically resume, if the time is still within the scheduled period. A triggered event will need to be re-triggered.
- The PTZ Network Camera can be configured for up to 10 event types, of which 4 can be configured for uploads.

**The Event Type List**

The **Event Type List** shows all of the event types currently configured in the AXIS 214 PTZ Network Camera, along with various information about their configuration, as listed below:

- **Name** - the descriptive name provided by the user
- **Enabled** - the event type must be enabled to be used, but can also be temporarily disabled
- **Priority** - describes which priority the event type will have in relation to other event types
- **Trigg/Sched** - shows how the event type is activated - by a trigger or at a set time
- **Actions** - shows the actions performed when triggered

To add a new event, click the **Add triggered** button or the **Add scheduled** button. These buttons open the Event Type setup dialogs, which are used to make all the necessary settings for the new event type.

To copy an event type, click the **Copy** button. This function can be used to quickly create a new event type based on an existing one. The new event can

Priority	Trigg./Sched.	Actions*
----------	---------------	----------

Copy    Modify...    Remove

upload, O=Output port, Tn=TCP notification, N=Night vision mode,

# Upgrade the camera firmware

**AXIS** COMMUNICATIONS **AXIS 214 PTZ Network Camera** [Live View](#) | [Setup](#) | [Help](#)

▸ [Basic Configuration](#)  
▸ [Video & Image](#)  
▸ [Audio](#)  
▸ [Live View Config](#)  
▸ [PTZ Configuration](#)  
▸ [Event Config](#)  
▾ [System Options](#)  
    ▸ [Security](#)  
    ▸ [Date & Time](#)  
    ▸ [Network](#)  
    ▸ [Ports & Devices](#)  
    ▸ **Maintenance**  
    ▸ [Support](#)  
    ▸ [Advanced](#)  
[About](#)

## Server Maintenance

**Maintain Server**

Restart the AXIS 214 PTZ Network Camera.

Resets all parameters, except the IP parameters, to the original factory settings.

Resets all parameters to the original factory settings.

**Upgrade Server**

Upgrade the AXIS 214 with the latest firmware.

Specify the firmware to upgrade to:   and click

**Note:** Do not disconnect power to the unit during the upgrade. The unit restarts automatically after the upgrade has completed. (1-10 minutes.)

**Backup**

Save all parameters and user-defined scripts to a backup file.

**Restore**

Use a saved backup file to return the unit to a previous configuration.

Specify the backup file to use:   and click

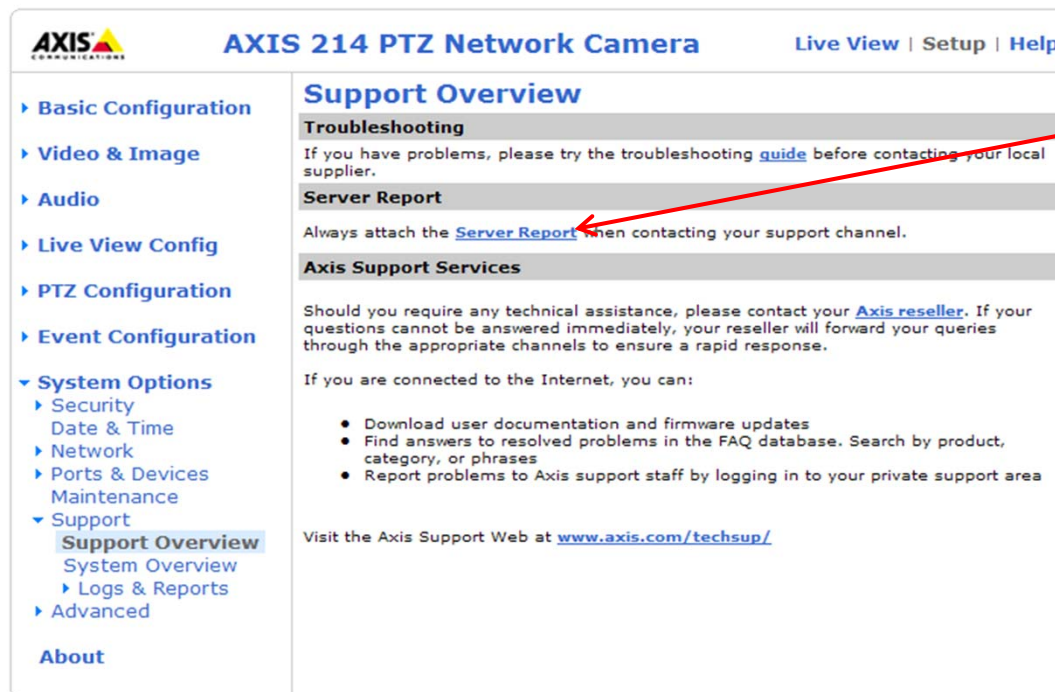
Browse to downloaded firmware file and click 'upgrade'

# Factory default the camera

The screenshot shows the web interface for an AXIS 214 PTZ Network Camera. The page title is 'AXIS 214 PTZ Network Camera' with links for 'Live View', 'Setup', and 'Help'. A left-hand navigation menu includes categories like 'Basic Configuration', 'Video & Image', 'Audio', 'Live View Config', 'PTZ Configuration', 'Event Config', 'System Options' (with sub-items like Security, Date & Time, Network, Ports & Devices, Maintenance, Support, Advanced), and 'About'. The 'Maintenance' section is active, displaying three main areas: 'Maintain Server' with 'Restart', 'Restore', and 'Default' buttons; 'Upgrade Server' with a firmware selection field and 'Browse...' and 'Upgrade' buttons; and 'Backup' and 'Restore' sections with 'Backup' and 'Restore' buttons respectively. A red arrow points to the 'Default' button, which is described as 'Resets all parameters to the original factory settings.'

Perform a hard factory default to reset all parameters back to factory specification

# Obtain a camera server report



**AXIS** COMMUNICATIONS **AXIS 214 PTZ Network Camera** [Live View](#) | [Setup](#) | [Help](#)

▶ [Basic Configuration](#)

▶ [Video & Image](#)

▶ [Audio](#)

▶ [Live View Config](#)

▶ [PTZ Configuration](#)

▶ [Event Configuration](#)

▼ [System Options](#)

▶ [Security](#)

    Date & Time

▶ [Network](#)

▶ [Ports & Devices](#)

    Maintenance

▼ [Support](#)

**Support Overview**

        System Overview

            ▶ [Logs & Reports](#)

▶ [Advanced](#)

[About](#)

### Support Overview

#### Troubleshooting

If you have problems, please try the troubleshooting [guide](#) before contacting your local supplier.

#### Server Report

Always attach the [Server Report](#) when contacting your support channel.

#### Axis Support Services

Should you require any technical assistance, please contact your [Axis reseller](#). If your questions cannot be answered immediately, your reseller will forward your queries through the appropriate channels to ensure a rapid response.

If you are connected to the Internet, you can:

- Download user documentation and firmware updates
- Find answers to resolved problems in the FAQ database. Search by product, category, or phrases
- Report problems to Axis support staff by logging in to your private support area

Visit the Axis Support Web at [www.axis.com/techsup/](http://www.axis.com/techsup/)

Click 'Server Report' to generate a complete log for diagnostic information

# Obtain Camera Firmware and User Manuals

The screenshot shows the Axis Communications website's technical support section. At the top, there is a navigation bar with links for Home, Products, Solutions, Support, Where to buy, and Corporate. Below this is a language selection menu. The main content area is titled "Technical support" and includes a sub-header "Staying with our customers all the way" with buttons for FAQs, Warranty, Pre-sales questions, and Online Helpdesk. Below this is the "Product areas" section, which says "Find information about your Axis product." and features four product categories with images: Network video products, Network print servers, Network document servers, and Custom on-Chip. On the left side, there is a "Support" sidebar with links for Network video, Print servers, Document servers, System-on-Chips, and Discontinued product ranges. Under "Downloads", there are links for Product firmware and Software tools. Under "Customer Services", there are links for FAQ database, Warranty & RMA, Pre-sales questions, Online Helpdesk, Axis Customer Forum, and Developer Pages. At the bottom of the sidebar is a "Subscribe to e-news:" field.

Product Firmware

Product literature and individual support pages

## Setup up a Syslog server to obtain a system log from the camera

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The server software can be obtained from the following link:

[http://www.kiwisyslog.com/software\\_downloads.htm#syslog](http://www.kiwisyslog.com/software_downloads.htm#syslog)

- > Go to syslog.conf: <http://ip/admin-bin/editcgi.cgi?file=/etc/syslog.conf>
- > Add as last line: \*.\* @logserver
  - (logserver = hostname or IP address of a syslog server)
  - Example: \*.\* @10.93.141.1
  - Save the file
  - Restart the AXIS product.

## Contact Technical Services Support

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- > Support requests are made to Axis Technical Support
- > Most efficient – Log in to MyAxis and use the online helpdesk on the Axis website: [www.axis.com/reg/login.php?oldurl=/reg/mycases/index.php](http://www.axis.com/reg/login.php?oldurl=/reg/mycases/index.php)
- > Benefits
  - Ask questions online
  - Highest priority
  - Trackable
  - History log
- > Partner Phone Support
  - Monday thru Friday
  - 9:00am to 8:00pm EST
  - (888) 832-2947
  - (888) TEC-AXIS

## United States and Canada

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Local office

Axis Communications INC  
100 Apollo Drive  
Chelmsford, MA 01824  
USA

800 444-2947

Director of Technical Services

James Marcella

Technical Services Manager

Joe da Silva

Partner Support line

888-832-2947

[www.axis.com/corporate/contact.htm](http://www.axis.com/corporate/contact.htm)



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[www.axis.com](http://www.axis.com)

**AXIS**  
COMMUNICATIONS

## Additional Training Information



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[www.axis.com](http://www.axis.com)

# Additional Classroom Trainings Available

## Course calendar

Check the course and location you wish to attend in order to register. Registration for the Fundamentals and Advanced courses are done via the Axis Shop. Course fees are paid directly by credit card. [General conditions](#)

**Note:** Fundamentals and Advanced courses are only open to members of our Channel Partner Program. Learn more about the [Axis Channel Partner Program](#). To become a member, complete the [registration form](#).

### Fundamentals for 2010

The [Axis Communications' Academy Fundamentals](#) 3-day class will be offered

#### Advanced Modules for 2010

The [Managing video surveillance with AXIS Camera Station 3.1](#) 1-day class will be offered and

The [Advanced Encoder Training](#) 1-day class will be offered.

<input type="checkbox"/>	Dates	Location	Course	Fee
<input type="checkbox"/>	July 13-15, 2010	Rochester, NY	3-day Fundamentals	USD 500
<input type="checkbox"/>	July 20-22, 2010	Salt Lake City, UT	3-day Fundamentals	USD 500
<input type="checkbox"/>	July 20-22, 2010	Chelmsford, MA	3-day Fundamentals	USD 500
<input type="checkbox"/>	Aug 3-5, 2010	Detroit, MI	3-day Fundamentals	USD 500
<input type="checkbox"/>	Aug 10-12, 2010	Des Moines, IA	3-day Fundamentals	USD 500
<input type="checkbox"/>	Aug 17-19, 2010	Washington, DC	3-day Fundamentals	USD 500
<input type="checkbox"/>	Aug 24-26, 2010	Chelmsford, MA	3-Day Fundamentals	USD 500
<input type="checkbox"/>	Aug 24-26, 2010	Anaheim, CA	3-day Fundamentals	USD 500
<input type="checkbox"/>	Aug 27, 2010	Anaheim, CA	1-day Advanced Encoder Training	USD 250
<input type="checkbox"/>	Aug 31-Sept 2, 2010	Cincinnati, OH	3-day Fundamentals	USD 500
<input type="checkbox"/>	Sept. 8, 2010	Chelmsford, MA	1-day Advanced ACS 3.1 training	USD 250
<input type="checkbox"/>			1-day Advanced Encoder	USD

*Click on the pictures for more info on training location and accommodations.*

*For MA, the hotel is for accommodations only because the training will be held in our Chelmsford office.*

### For all Chelmsford Trainings



### 2010 Trainings

July 13-15



Rochester, NY

July 20-22



Salt Lake City, UT

Aug 3-5



# Advanced Training Available

## Axis Communications' Academy



[Academy Overview](#)   [Fundamentals](#)   [Advanced Modules](#)   [Course calendar](#)   [Webinars](#)

### Advanced Modules-1 Day Trainings

The Advanced modules within Axis Communications' Academy, packaged as one-day trainings, are focused courses to meet specific educational requirements of installers and technical specialists.

#### Managing video surveillance with AXIS Camera Station 3.10

AXIS Camera Station is a complete video management system for up to 50 cameras. Designed for Axis network video products, this video management software offers easy installation and setup with automatic camera discovery, multi-configuration of devices and a powerful Event Configuration Wizard. This course will give you the skills you need to successfully deploy and manage a mid-size video surveillance system. [Detailed agenda](#) (pdf).

**This course is now recognized by the NBFAA, and completion of this course now qualifies for .7 CEU's. Also, the course qualifies for 6 BICSI CEC's.**

#### Advanced Encoder training course

Axis Communications has a full complement of video encoders which allow you to connect analog cameras (even analog PTZ cameras!) to ip networks so that you can obtain all of the benefits of a networked solution while preserving your investments. This course will introduce you to our encoder products, teach you which to use for every application, and how to completely install and configure them thru a balance of lecture and hands-on exercises. [Detailed agenda](#) (pdf).

**This course is now recognized by the NBFAA, and completion of this course now qualifies for .7 CEU's. Also, the course qualifies for 7 BICSI CEC's.**

[Register here](#)

*For MA, the hotel is for accommodations only because the training will be held in our Chelmsford office.*

**The Hotel Recommended for all Chelmsford trainings**



**Cost of \$250 for encoder class includes:**

- One day training and training materials
- One (1) AXIS Q7401 Video Encoder
- All meals during session

**Cost of \$250 for ACS class includes:**

# Webinar Trainings Available

## Webinars

If you are a new to Axis Communications, or new to the industry, these free, online trainings are a great tool to get you up to speed on Network Video as well as Axis Communications, the world leader in Network Video.

### Are you registered with Axis and have Partner Pages access?

If not,

- [Register in the Axis Channel Partner Program](#) or

- [Register in the Axis A&E Program](#)

**YOU MUST HAVE PARTNER PAGE ACCESS TO BE ABLE TO REGISTER FOR THE WEBINARS BELOW. YOU WILL BE PROMPTED FOR YOUR USERNAME AND PASSWORD.**

### Upcoming webinar sessions 2010

#### Comparing Storage Systems

One of the advantages of an IP surveillance system is the flexibility that you now have in regards to storing your video. But now the question is, what storage is best for my needs? What are my options? In this presentation, we will take a look at the various storage offerings, from small or simple types, to larger systems with more built in features and functions. [Presentation](#) (pdf)

*no courses currently scheduled*

#### Axis Communications Product Overview

This presentation is designed to showcase our various product offerings, also walks through various features and functions of our cameras. [Presentation](#) (pdf)

July 8, 2010. 12-1 pm Eastern Time

#### Lens Selection -the myths and facts

## About Axis' Webinars

Axis webinars are online trainings which usually last about one hour. The presenter walks through a presentation, then opens the session up for a question and answer period.

The webinars are held through Microsoft Office Live Meeting.

### First Time Users:

To save time before the meeting, [check your system](#) to make sure it is ready to use Microsoft Office Live Meeting.

For more help on how to get started, please read the [general instructions](#) to Axis webinars.

Contact [thomas.hanley@axis.com](mailto:thomas.hanley@axis.com) if you have problems registering.

## Web-based courses for Axis partners



# Web-based, Self-based Trainings Available

## Axis Communications' Academy

Number one in network video knowledge

Overview

Classroom-based

Web-based

### Web-based courses

Axis Communications' Academy gives you the opportunity to attend online courses anywhere in the world at any time. They help you to stay updated on Axis' product portfolio, services and solutions.

You must have Partner Pages access to be able to take the courses below. If you are not a member of any Axis Partner Programs, please [register](#) here.



Web-based product training for **AXIS Camera Station\***: This online course, targeted towards salespersons and system designers, will give a brief overview of AXIS Camera Station. Length: 30-45 min



AXIS Q1910/Q1910-E Thermal Network Cameras: Learn about ensuring reliable detection in dark and challenging conditions. Length: 15 min



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 innovation  
 environment  
 protect  
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 thermal  
 global  
 outdoor  
 ease of use  
 H.264  
 integration  
 image usability  
 focus  
 video encoder