

Axis Mobile Streaming

Efficient streaming of video



Table of contents

1. Introduction	3
2. The Axis Mobile Streaming technology	3
2.1 Multiple video streams recording in parallel	3
3. Axis Mobile Streaming in AXIS Camera Companion	4
3.1 Stream profiles in AXIS Camera Companion	4
3.2 Streaming to the mobile viewing app	5
4. User benefits	6
5. Conclusion	6
6. Useful links	7

1. Introduction

Quick and easy access to surveillance video from a mobile device is important especially in systems where constant monitoring does not apply and users need to access video on-the-go even where bandwidth is limited.

2. The Axis Mobile Streaming technology

Up to now, the streaming of high quality video over the mobile network has required optimal conditions, which often has led to a substantial cost for the user. Optimal conditions mean a mobile network that can carry the amount of data required for high quality video, and mobile devices that support high quality video. The user also must be prepared to pay the cost for streaming high quality video over the mobile network. However, with the Axis Mobile Streaming technology it is now possible for the user to access video on-the-go, even where bandwidth is limited.

Axis Mobile Streaming is a technology that utilizes multiple video streams and sends the optimal stream when a client, such as AXIS Camera Companion, requests it. The need for low bandwidth video can be, for example, in the use of mobile apps, to save bandwidth when accessing video remotely, or to relieve a software client with poor performance.

2.1 Multiple video streams recording in parallel

Many cameras on the market have limitations when it comes to their number of stream configurations. All Axis network video products, on the other hand, provide multiple video streams with different frame rates, resolutions and compression levels. This allows the recording of parallel streams of video in different resolutions, see Figure 1.

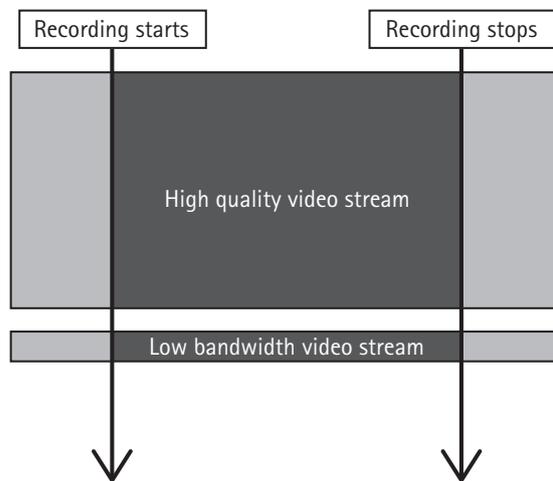


Figure 1: Two video streams recorded in parallel.

3. Axis Mobile Streaming in AXIS Camera Companion

AXIS Camera Companion is a surveillance solution optimized for systems of up to 16 cameras. The system comprises software running on standard Axis network cameras, storage on SD cards or Network-Attached Storage (NAS) devices, software clients for PC and smartphones, and standard network equipment, see Figure 2.

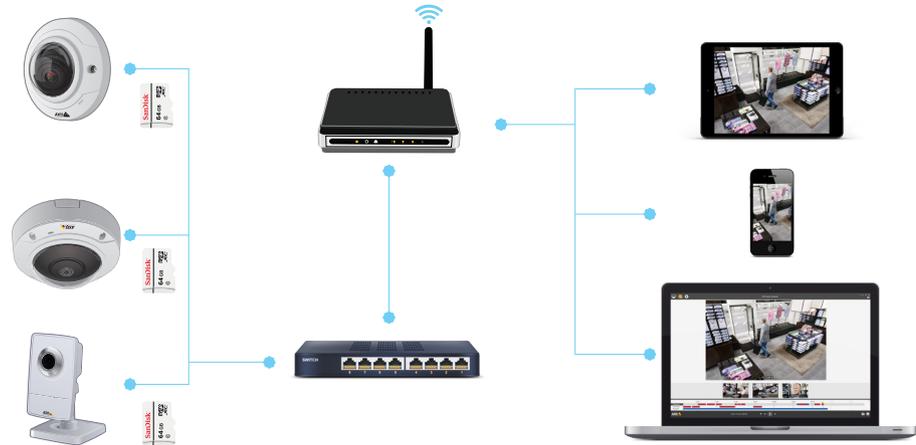


Figure 2: A typical AXIS Camera Companion system setup.

When a surveillance system with AXIS Camera Companion is set up, the PC client automatically configures cameras to record in parallel streams. Each camera keeps track of its own recordings – one low bandwidth and one high quality stream – and nothing is streamed from the camera until the user requests it.

By default, the AXIS Camera Companion mobile client requests the low bandwidth stream, but the user can easily switch to high quality video when needed. Streaming the low bandwidth video saves data traffic over the mobile network.

3.1 Stream profiles in AXIS Camera Companion

When utilizing Axis Mobile Streaming, an Axis camera or video encoder is set to record two different stream profiles. Each profile uses a separate, individually optimized video stream in the camera. The profiles are called:

- > High quality profile
- > Low bandwidth profile

Default values for the high quality profile are a resolution of 1920×1080 pixels (Full HD), with a frame rate of 15 fps (frames/second). For the low bandwidth profile the default resolution is 640×360 pixels, with a frame rate of 5 fps. See Table 1 for an overview.

Stream profile	Default values	
	Resolution (pixels)	Frame rate (fps)
High quality	1920 x 1080	15
Low bandwidth	640 x 360	5

Table 1: Overview of the stream profiles and their default values.

If needed, the default values can be configured by the user in the Video Quality Settings dialog in the AXIS Camera Companion PC client, as shown in Figure 3.

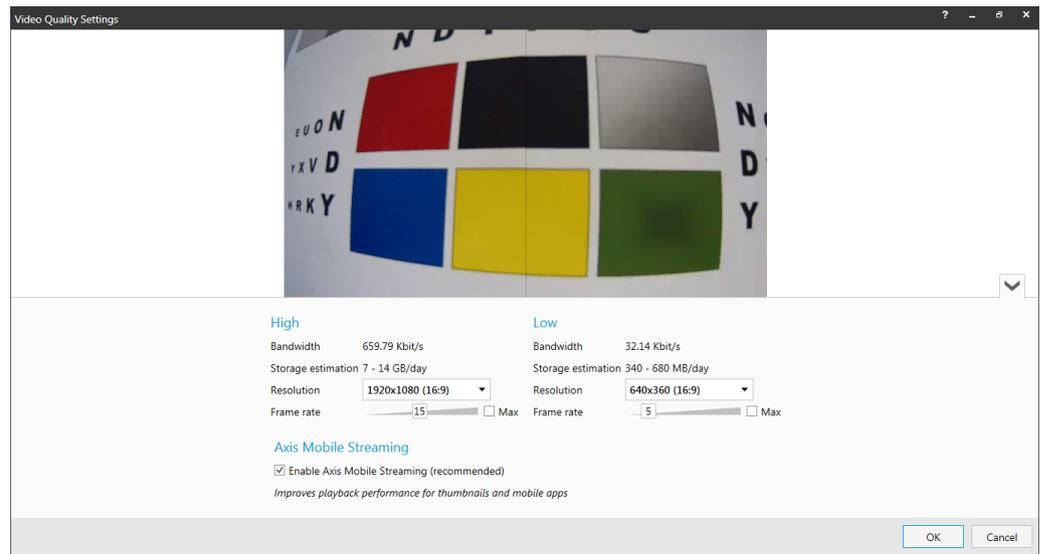


Figure 3: Profile configuration for Axis Mobile Streaming.

3.2 Streaming to the mobile viewing app

The mobile viewing app for AXIS Camera Companion makes it possible to view live and recorded video from any site in an AXIS Camera Companion surveillance system. The app is available for iPhone, iPad and Android phones.

High quality recordings are also stored in parallel in a low bandwidth video stream. The low bandwidth recording uses approximately 5% of the storage space needed for high quality recording. The extra 5% of storage is the cost needed to achieve efficient streaming of video to mobile devices. As a default, the mobile client requests the low bandwidth profile, where the resolution is limited to 640 pixels in width, but where there is no limitation of the frame rate.

At any given time, the user can switch between the low bandwidth profile and the high quality profile. For example, the user might be watching a surveillance site using the low bandwidth profile when something interesting is spotted. By switching to the high quality profile, the user can watch the event in greater detail. Images and video sequences can be stored on the mobile device and shared when needed, for example when sending high quality images to the police.

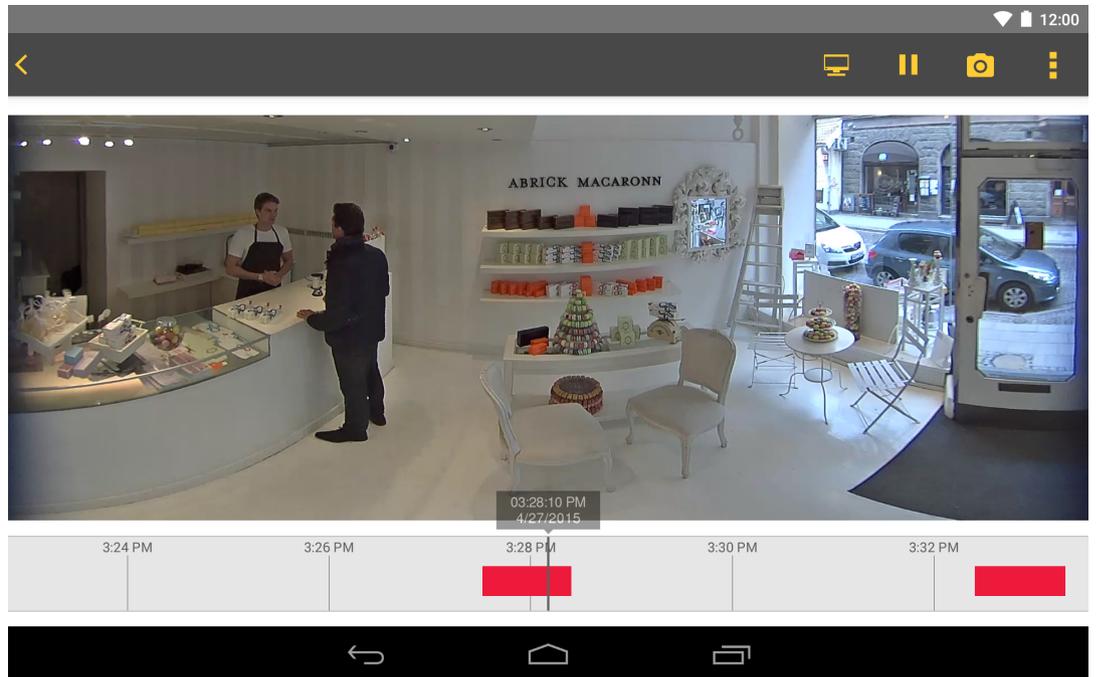


Figure 4: Example of a surveillance situation viewed in high quality. The red color indicates a recording that is triggered by video motion detection.

4. User benefits

Using Axis Mobile Streaming, the user can search through vast amounts of low bandwidth video, using only a fraction of the bandwidth needed for Full HD video. The image quality is still more than sufficient to watch the events on the screen of a mobile phone. The user can then easily switch to streaming high quality video to view specific events in greater detail. If access to the mobile network is limited when the user requests high quality video, the mobile client automatically switches to the low bandwidth stream instead.

The user can easily access video remotely monitoring, for example, their office or shop, using their existing mobile phone. With Axis Mobile Streaming there is no need to upgrade a mobile phone or subscription, since the technology can be used on most mobile devices, whether it is an iPhone, iPad or Android phone.

Axis Mobile Streaming saves costs since its low bandwidth profile significantly reduces data traffic over the mobile network. This can mean up to 95% saved bandwidth.

5. Conclusion

Axis Mobile Streaming combines mobile streaming with the capability of Axis network cameras to deliver multiple streams of video. The result is a technology that makes it quick and easy to access video at any time, from anywhere, using a mobile device. Storing video for the low bandwidth profile uses approximately 5% more of the available storage space, but it gives several advantages, such as:

- > Remote and wireless access to surveillance video
- > Quick and easy access even where bandwidth is limited
- > No need to change mobile phones
- > Reduced costs since the bandwidth needed to access video on-the-go is reduced
- > Future-proof for 4K Ultra HD

6. Useful links

For more information, see the following links:

Axis Communications – 'AXIS Camera Companion – The easiest way to network video surveillance':
www.axis.com/products/cam_companion_software/index.htm

Axis Communications – 'AXIS Camera Companion – Quick and easy access to your surveillance system from your mobile device': www.axis.com/products/cam_companion_software/mobile_app.htm

Free download of AXIS Camera Companion PC client:
www.axis.com/products/cam_companion_software/mobile_app.htm

Axis Communications – '4K Ultra HD' :
www.axis.com/products/video/about_networkvideo/4KultraHD.htm

About Axis Communications

Axis offers intelligent security solutions that enable a smarter, safer world. As the global market leader in network video, Axis is driving the industry by continually launching innovative network products based on an open platform – delivering high value to its customers and carried through a global partner network. Axis has long-term relationships with partners and provides them with knowledge and ground-breaking network products in existing and new markets.

Axis has more than 1,800 dedicated employees in more than 40 countries around the world, supported by a network of over 80,000 partners across 179 countries. Founded in 1984, Axis is a Sweden-based company listed on NASDAQ Stockholm under the ticker AXIS.

For more information about Axis, please visit our website www.axis.com.