

WHITE PAPER

# Device lifecycle management with **AXIS Device Manager Extend**

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# 1 Introduction

AXIS Device Manager Extend is a software application which provides system administrators with an interface for discovering, monitoring, and operating Axis devices on their organization's networks.

This white paper presents an overview of AXIS Device Manager Extend and its components. We briefly discuss the application's benefits and display some typical system setups.

## 2 Background - AXIS Device Manager and AXIS Device Manager Extend

AXIS Device Manager Extend is a software application separate from the appreciated device management tool AXIS Device Manager.

AXIS Device Manager Extend is ideally suited for customers who want an intuitive graphical dashboard of their extended system's status, with automated system monitoring and the possibility to monitor and manage remote sites. AXIS Device Manager Extend requires an internet connection.

AXIS Device Manager, by comparison, is more suited for initial system configuration or manual maintenance tasks. It can be used offline.

The softwares can be used either individually or concurrently, as each realizes slightly different use cases. There is some overlap in the functionality and the long-term intention is to migrate both softwares into a single united application, providing support for the combined feature set. Together, AXIS Device Manager and AXIS Device Manager Extend offer security system installers and security system administrators easy, cost-effective, and secure ways to manage all major installation, security, and maintenance tasks for their devices.

## 3 Device management with clients and site controllers

AXIS Device Manager Extend consists of a client (or several clients) and a site controller (or several site controllers). The client provides a user interface while the site controller enables discovery and management of the (local) devices.

The client can be used as an on-demand or always available user interface for managing the AXIS Device Manager Extend system. It can be run on a dedicated machine together with a locally installed site controller or separately from the site controller(s) on a remotely connected laptop. The client presents the user with an intuitive graphical interface where the overall status of the system is readily available.

The site controller is an always available, on-premise management service that is responsible for maintaining the connections with local devices, such as cameras. The site controller also acts as a link to a service platform, where the same API functionality is abstracted remotely to support remote management of sites.

An AXIS Device Manager Extend client can connect directly to manage a single site controller on the same local network. The client can also connect remotely to multiple sites across an organization's network, or even a combination of local and remote sites.

Both the client and the site controller are light weight in terms of the processing resources required. This supports the possibilities to run the client and the site controller together on one PC. But it also enables the option to run them separately. The site controller can, for example, be run on a virtualized server or

even a dedicated hardware server originally purposed for other tasks (such as running a video management system), but with some processing resource still available. The client is envisioned to be run from a laptop or a dedicated server. The client and the site controller architecture support a multitude of configurations of client(s) and site controller(s) in one system.

## **4 The benefits of AXIS Device Manager Extend**

AXIS Device Manager Extend allows you to manage thousands of Axis devices and perform maintenance tasks at scale, regardless of physical location. It will address network performance issues, for example, identifying connectivity failures to devices or identifying unstable devices. The software supports maintenance and proactive planning by showing product warranty and discontinuation dates for the individual devices in the system. For any products that are soon to be discontinued, recommended replacement products will be suggested.

AXIS Device Manager Extend lets you verify that all devices are running the latest and most secure firmware version and push out upgrades (or downgrades) in minutes. You get automated checks for new firmware and recommended firmware upgrades. By setting basic security policies and applying them across your entire network you can also ensure that all devices comply with the most current security policies and practices to maintain cybersecurity control.

You can view app inventory to see which applications and versions are running and easily apply new ones. For example, you can start hundreds of applications at once. There is policy support for AXIS Video Motion Detection, AXIS Motion Guard, AXIS Fence Guard, and AXIS Loitering Guard.

Important events are automatically stored in the system log. This includes items such as user activity, device status, and network status.

## 5 Typical system setups

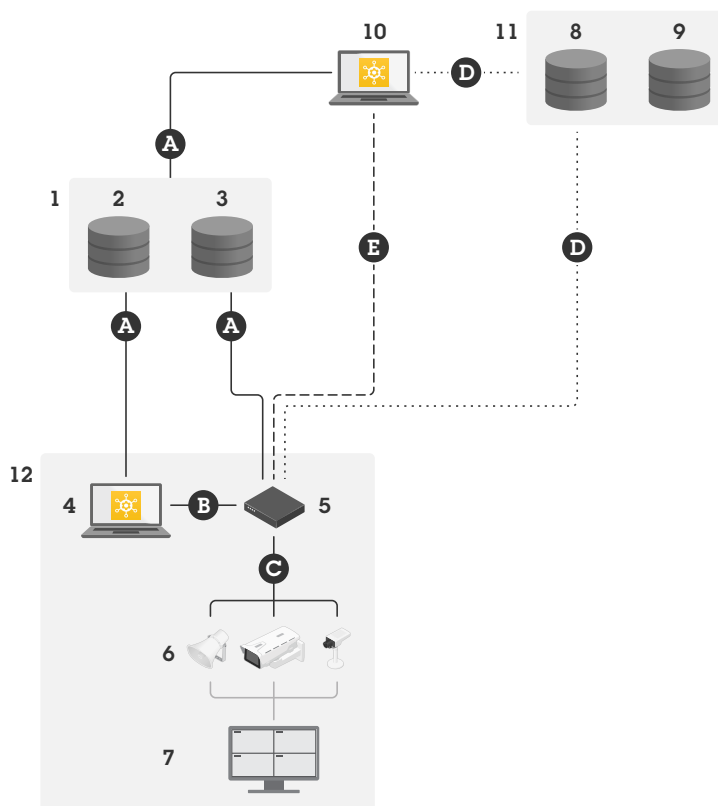
Table 5.1 Guide to the connections in the system setup graphs in the following sections.

Connection	URL and IP	Port	Protocol	Comment
A	prod.adm.connect.axis.com (52.224.128.152 or 40.127.155.231)	443	HTTPS	Required.
B	HTTP discovery (from client to site controllers)	37080	HTTP	Needed to provision the site. Optional after provision.
	Data transfer (between client and site controller)	37443	HTTPS	
	Multicast discovery (from client to site controllers)	6801	UDP	
	Multicast discovery (from site controllers to client)	6801	UDP	
C	Data transfer (between site controller and devices)	80 / custom port, 443	HTTP, HTTPS	Required.
	Unicast discovery	1900	SSDP, Bonjour	
	Multicast discovery	1900, 5353	Multicast	
	HTTP discovery	80, 443	HTTP/HTTPS	
D	signaling.prod.webrtc.connect.axis.com	443	HTTPS	Based on WebRTC standard. Optional and set to off by default.
	*.turn.prod.webrtc.connect.axis.com	443, 5349	HTTPS, DTLS (UDT and TCP)	
E	Peer to peer (P2P)	49152-65535	DTLS (UDT and TCP)	

### 5.1 Single site

In this single-site setup, the connections A and C are mandatory. The client and site controller have a direct connection to each other (via connection B) and connect to a service platform (via A) for updated firmware and other support information. After the system is provisioned, the connection (B) between the

site controller and the local client can be replaced with remote access between the site controller and a remote client (via D or E).



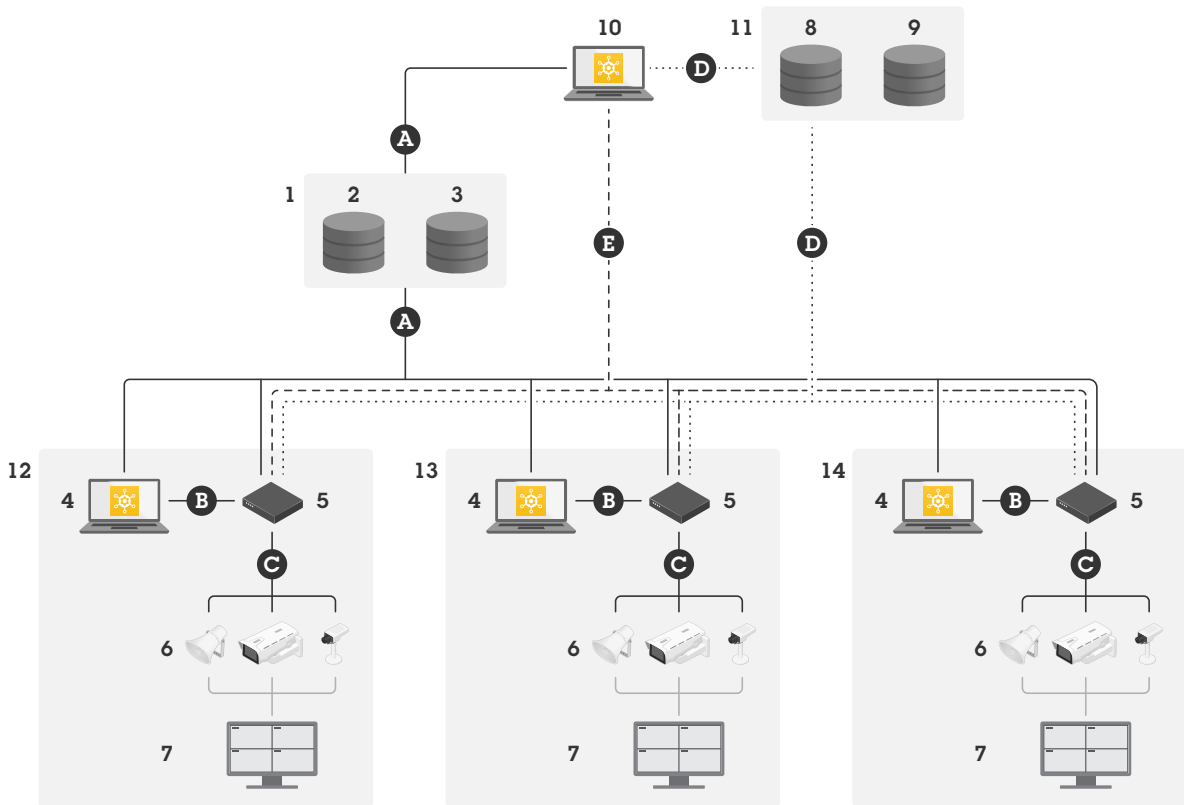
*Typical setup for single-site operations with local and remote access.*

- 1 Axis
- 2 Identity and access management (My Axis)
- 3 Organization data
- 4 Local client (with internet connection)
- 5 Site controller (with internet connection)
- 6 Devices
- 7 VMS (video management software)
- 8 TURN (traversal using relays around NAT)
- 9 Signaling
- 10 Remote client
- 11 Remote access WebRTC servers
- 12 Site

## 5.2 Multiple sites using local and remote access

For efficient remote, multiple-site management a remote client will communicate with each site controller to manage the organization's separate sites.

In this multisite setup, the connections A and C are mandatory. After the system is provisioned, the connections (B) between the site controllers and local clients can be replaced with remote access between the site controllers and the remote client (via D or E).



*Multisite setup using local and remote access.*

- 1 Axis
- 2 Identity and access management (My Axis)
- 3 Organization data
- 4 Local client (with internet connection)
- 5 Site controller (with internet connection)
- 6 Devices
- 7 VMS (video management software)
- 8 TURN (traversal using relays around NAT)
- 9 Signaling
- 10 Remote client
- 11 Remote access WebRTC servers
- 12 Site 1
- 13 Site 2
- 14 Site 3

# About Axis Communications

Axis enables a smarter and safer world by creating network solutions that provide insights for improving security and new ways of doing business. As the industry leader in network video, Axis offers products and services for video surveillance and analytics, access control, intercom and audio systems. Axis has more than 3,800 dedicated employees in over 50 countries and collaborates with partners worldwide to deliver customer solutions. Axis was founded in 1984 and has its headquarters in Lund, Sweden.

For more information about Axis, please visit our website [axis.com](https://axis.com).