

Core Switch for Small Surveillance Network



AI Overview

For a small IP surveillance network with 100 Mbps cameras and PoE requirements, a Gigabit core switch with sufficient backplane bandwidth and uplinks is recommended to ensure smooth video streaming and future scalability.

Core Switch Necessity A core switch serves as the central hub in a network, connecting multiple access switches and handling high-speed data exchange between cameras and network video recorders (NVRs) efficiently. For small networks with fewer than 32 cameras, a core switch may not be strictly necessary. However, for networks with 32 or more cameras, using a core switch is recommended to prevent video lag and ensure reliable performance.

Key Considerations

- Bandwidth:** Calculate the total bandwidth required by all cameras. For example, 160 cameras at 5 MP and 30 fps may generate around 1.3 Gbps of traffic. The core switch uplinks should exceed this to avoid congestion.
- Uplink Speed:** Ensure 1 Gbps or higher uplinks from access switches to the core switch. For future-proofing, consider 10 Gbps uplinks if the network may expand.
- PoE Support:** While the core switch typically does not provide PoE, access switches must support PoE or PoE+ to power cameras via Ethernet.
- Port Count:** The core switch should have enough ports to connect all access switches. For small networks, a 24- or 48-port Gigabit switch is usually sufficient.
- Backplane Capacity:** Choose a switch with a high backplane bandwidth to handle simultaneous traffic from multiple access switches without packet loss.

Recommended Setup

- Access Layer:** PoE+ switches (e.g., Cisco SG-300-28MP or similar) to connect cameras and provide power.
- Core Layer:** Managed Gigabit switch (e.g., Cisco Catalyst 3850 or equivalent) with sufficient uplinks to NVRs and high backplane capacity.
- Uplink Configuration:** Aggregate multiple uplinks if needed to increase throughput and redundancy.

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Article Content

Recommended Switches for Small IP Surveillance

With so many options available, selecting network switches for surveillance can be especially daunting for inexperienced users, with little

Best PoE Switches for IP/CCTV Cameras in 2025

Here are our top picks when it comes to the best available 16-port and 24-port PoE switches suitable for an enterprise-grade CCTV surveillance system.

Layer 2 Or Layer 3 Type Switch As Core Switch For IP Video Surveillance ...

We are thinking about using a layer 2/3 smart switch that can create & monitor vlans, switch ports off and on all with remote capabilities. Currently we use separate networks for building

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Which switch for IP cameras? Which poe switch for CCTV to choose?

Choosing the right PoE Switch is a key part of building a network designed for IP surveillance, CCTV cameras. In this article we will discuss what to pay special attention to when choosing a switch for

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IP_VideoSolutionG_17Mar15 dd

Video surveillance based on digital IP technology is revolutionizing the physical security industry. This solution guide will help you understand the basics of IP surveillance, and show you how to plan and

How to choose a PoE switch for surveillance system?

The switch configuration of a large and medium-scale network monitoring system consists of three parts: the access layer, the aggregation layer, and the core layer.

Meraki Switches

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Network switches for network cameras, how to choose?

It downlinks network switches from the convergence layer,uplinks video surveillance platform, storage server, NAS etc equipment, suggesting to use the layer 3 Gigabit core network

Selecting a PoE Switch for Video Camera Surveillance

Learn how to choose the most suitable PoE switch for your security camera system to simplify installation, reduce costs, and improve video quality.

Best PoE Switch for IP Cameras: Top Picks for 2026

Find the best PoE switch for IP cameras in 2026. Explore top-rated models and learn how to choose and install them to secure your home or

How to Choose and Connect PoE Switches for IP

Read this article to discover the key benefits of using PoE switches for IP camera systems and learn how to select the right switch based on port

How many surveillance cameras require a core switch?

For systems with fewer than 32 channels, a core switch is generally unnecessary. For systems with 32 or more cameras, the decision to use a core

What You Should Consider When Choosing Switches

In todays typical business, using PoE (Power over Ethernet) switches for IP camera is very common and popular and should be your first choice.

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Best practice for core and access switches in IP

Hello folks, the subject above tells all about my concerns and the exercise that I am doing. the network is going to handle the IP CCTV traffic only,

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How many surveillance cameras require a core switch?

Typically, a 100Mbps switch is sufficient, but additional redundancy can improve network reliability. Core layer switch: Primary responsibility for

Does It Need a Core Switch for the 100-Channel Surveillance System

Does it need a core switch for the 100-channel surveillance system? Before get the answer, we should know the function of switches in different layers.

Choosing the Right Switch for IP Camera Setup | Hi

Learn the different types of network switches used in CCTV systems, including PoE switches, desktop switches, and gigabit switches for IP camera

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