

Are industrial switches routers



AI Overview

No, industrial switches are not routers, though some managed switches can include limited routing capabilities.

Key Differences

Industrial switches primarily operate at Layer 2 (Data Link Layer) of the OSI model. They connect multiple devices within a local area network (LAN), such as automation equipment, controllers, and sensors, and forward data based on MAC addresses. Switches ensure that data is delivered efficiently to the correct device without broadcasting to all ports, which improves network performance and security in industrial environments. Industrial routers, on the other hand, operate at Layer 3 (Network Layer). Their main function is to connect different networks or subnets, such as linking a factory LAN to a corporate network or the internet. Routers manage IP addresses, perform Network Address Translation (NAT), assign addresses via DHCP, and can provide firewall and VPN services for security.

Managed Switches with Routing Features

Some managed industrial switches can perform limited routing functions, often referred to as Layer 3 switches. These devices can route traffic between VLANs or subnets within the same network, but they do not replace a full-featured router for connecting to external networks or managing WAN traffic.

Roles in Industrial Networks...

Article Content

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What is Network Switching? Switching in IT and computer networking is the transfer of data packets, or blocks of data, through a

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Types of Industrial Grade Network Switches

A Layer-3 industrial switch adds routing capabilities to the industrial ruggedness. In other words, in addition to switching (Layer 2), it

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The difference between PLC gateway, industrial router and switch

In this article, you can learn about PLC gateways, industrial routers, switches, and all information related to these

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What is a switch vs a router?

What is a router? Just as a switch connects multiple devices to create a network, a router connects multiple switches, and their

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Basics of Industrial ethernet, bus, switches, routers

When you talk about office and home networking, typically you're talking about Ethernet-based networks—computers,

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Routers vs. Switches vs. Access Points

Switches – connect devices within a single network, transfer incoming and outgoing internet traffic between the

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Router vs Switch

What's the difference between Router and Switch? Routers and switches are both computer networking

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Industrial Ethernet Switches

Modernize your operations with Cisco Industrial Ethernet switches: Increase productivity, boost security, and empower industrial AI.

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Switch vs. Router vs. Hub: How to Choose

What is the difference between an Ethernet switch and a network switch, hub and router? Find out how to decide which

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Unique Features of Industrial Routers and Their Differences from

Additionally, it's important to distinguish industrial routers from switches, as these two devices serve different

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What is the difference between a router and a switch? While switches and hubs carry data within a single network, routers are used

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Introduction to Network Switches for Industrial Applications Industrial network switches connect automation

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Industrial Ethernet

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What Is a Switch?

The comprehensive definition of a switch, covering network devices like routers and hubs, command functions in

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Introduction to Network Switches for Industrial Applications

Industrial network switches connect automation equipment, controllers, and other such devices. Learn about

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Modem vs. Router: Here's the Difference (And Why It Matters)

What Is the Difference Between a Modem and a Router? Your router creates a network between the computers in

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Industrial Switch vs Normal Switch, What's the Difference

What is an industrial ethernet switch? Struggling to choose between an industrial and a normal switch? This guide breaks down

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15 Differences Between Switches and Routers

Switches and routers are both responsible for relaying information between networked endpoints. Learn how they are

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What is an Industrial Switch? Industrial Ethernet Switch Guide 2026

An industrial switch (industrial Ethernet switch) is a hardened networking device designed for OT environments such as factories,

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How to Combine Industrial Switches and Routers for Use

The combination of industrial switches and routers is crucial for building stable and efficient IIoT networks. Through thorough needs

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Using Industrial Routers as Industrial Switches

In traditional industrial environments, routers and switches serve distinct purposes, but with technological advancements and the

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What is a network switch? | Switch vs. router

A network switch forwards data between devices, unlike routers, which forward data between networks. Learn about Ethernet

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