

Article Overview

A network switch alone cannot provide internet access; it connects devices locally, and a router or modem is required to access the internet.

Understanding the Role of a Switch

A network switch is a device that connects multiple devices within a local area network (LAN), such as computers, printers, and storage devices, allowing them to communicate and share resources efficiently . Switches operate at the data link layer and forward data packets between devices on the same network. They do not assign IP addresses or provide internet connectivity on their own .

Connecting Devices Locally

To set up a LAN using a switch:

- o Choose a switch with enough ports for all devices. For small networks, a 5- or 8-port unmanaged switch is sufficient, while larger setups may require 2.5GbE or 10GbE switches for higher speeds .
- o Connect devices using Ethernet cables. Each device should be plugged into a switch port.
- o Assign IP addresses manually if no router is present. Each device must have a unique IP in the same subnet (e.g., 192.168.1.X with subnet mask 255.255.255.0), .
- o Set the default gateway and DNS server if needed. For local-only networks, the switch's IP can serve as a placeholder, but internet access requires a router or modem .

Enabling Internet Access

To provide internet access through a switch:

- o Connect a router or modem to one of the switch ports. The router handles DHCP, NAT, and routing to the internet .
- o Devices connected to the switch will receive IP addresses from the router and can access the internet while still communicating locally.
- o If the switch is connected to a managed router, you can configure VLANs, bandwidth limits, and security settings for better control .

Local-Only Networks

If internet access is not required, a switch can create a fully functional LAN for:

- o File sharing between computers

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- o Accessing shared printers or NAS devices
- o Running local servers or lab networks This setup is ideal for small offices, LAN parties, or testing environments .

Summary

- o Switch alone: Connects devices locally, no internet.
- o Switch + router/modem: Provides both local connectivity and internet access.
- o IP configuration: Required for local communication; DHCP from a router simplifies setup.
- o Managed switches: Offer advanced control, security, and traffic management for larger networks . By understanding the distinction between a switch and a router, you can design a network that meets your needs, whether for local resource sharing or full internet connectivity.

A local network is a network that uses a private IP address space. Enterprise administrators can also configure Local Network

Summary Network & Internet settings in Windows allow you to manage your network connections and internet settings. Whether you

In this tutorial, we'll teach you how to set up a local area network with a switch without an internet connection. A local

Introduction Understanding the Basics of Network Switches Network switches play a crucial

A network switch is a central communication device for local area Ethernet networks. Many home broadband routers

Internal Switch is a pre-installed virtual switch. It serves to connect a virtual machine to the management host machine

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I have a switch connecting several computers with my ISP. All the computers gets external IPs from my ISP. When

A local area network or LAN is comprised of cables, access points, switches, routers and other components that when connected in

Set up your own private LAN with or without a routerA local area network (LAN) is a network

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Introduction Anyone wanting to enhance connectivity at home or the workplace has to know how to set up a local area

We tested several network switches to help find the right one for your needs and budget.

This guide shows you several practical ways to build a local area network without a router, including a wired switch-based LAN, a

Share your wireless internet access to Hyper-V virtual machines from Windows 10 using an internal virtual switch.

Hi! I need to create a "private test lab" in HyperV. I need that all VM inside will be "isolated" (must no see any computer

What is a network switch? A network switch connects devices within a network (often a local area network, or LAN *) and forwards

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