

Switch with two IP segments



Article Overview

A standard Layer 2 switch cannot route between two IP segments, but a Layer 3 switch or router can manage multiple IP ranges on the same network.

Layer 2 vs Layer 3 Switches

A Layer 2 switch operates at the data link layer and forwards traffic based on MAC addresses. It cannot route traffic between different IP subnets, so devices on separate IP segments require a router to communicate. In contrast, a Layer 3 switch can process IP addresses, maintain routing tables, and forward packets between subnets, effectively combining switching and routing capabilities.

Options for Handling Two IP Segments

- **Secondary IP Addresses on a Router or Layer 3 Switch** You can assign multiple IP addresses to a single interface, allowing one physical network to host multiple logical subnets. For example, a router interface could have 192.168.0.1 and 192.168.1.1, enabling devices on both subnets to communicate through the router.
- **Using VLANs** VLANs (Virtual LANs) allow you to segment a single physical switch into multiple logical networks. Each VLAN can have its own IP subnet, and a Layer 3 switch or router can route traffic between VLANs. This approach is ideal when you want to isolate traffic while still using the same physical infrastructure.
- **Linux or Dedicated Gateway for Routing** If a router cannot handle multiple IPs, a Linux machine or another device with IP forwarding enabled can act as a gateway between the two subnets. You assign it addresses from both IP ranges and configure static routes to enable communication

Article Content

Aug 16, 2025

Can Switches Interconnect Different Network Segments? (With

Layer 2 switches work at the data link layer and forward data frames based on MAC addresses, and they must use

Mar 01, 2026

Sx300 Series Switches Typical Configuration Examples (V200)

Example for Configuring Communication Between Different Network Segments Through Static Routes Overview In addition to

Jan 04, 2026

What is a Network Switch and How Does it Work?

The Switch is a network device that is used to segment the networks into different subnetworks called subnets or LAN

Nov 22, 2025

2 ip ranges 1 Switch

Hi im new here and relatively new to networks i have a job coming up that requires a site to have 2 ip ranges for cctv

May 18, 2026

2 separate networks connected to one switch?

In my organization, we have 2 networks. A network for staff and another network for public Wi-Fi. I will have to use a

Apr 24, 2026

Is it safe to use a single switch for multiple subnets?

You could use one subnet per VLAN to create multiple broadcast domain for multiple ip ranges. And if you want to communication

Jan 04, 2026

Configure 2 different IP ranges on one LAN interface

@ jgomez123 said in Configure 2 different IP ranges on one LAN interface: And if I use a new interface, do I configure

Sep 01, 2025

Configure Multiple IP Addresses on a Single or Multiple NICs

This guide walks you through the process on Windows 10/11 and explains how to Configure Multiple IP Addresses on

Jan 01, 2026

Are Vlan''s used to split my switch into segments?

VLANs are a technology used to sub-divide physical switches into smaller logically-isolated layer 2 broadcast

Jan 28, 2026

L2 communication between different network segments

I was primarily focused on L2 and L3 in the TCP/IP stack. I am also new to the company and will be investigating the

Aug 06, 2025

Assigning IP addresses to multiple switches

I am in need of help on IP assigning to 4 brand NEW Araknis switches that I am replacing with the current netgear/tp

Jan 04, 2026

Switch (Netzwerktechnik) - Wikipedia

Muss ein Switch allerdings Frames in andere Segmente weiterleiten, führt sein Einsatz eher zu einer

Oct 16, 2025

LAN segmentation with different IP addresses

Since you would need a layer-3 device of some sort (i.e. the router you mentioned) to communicate between the two

Nov 29, 2025

Can switches interconnect different network segments? (with ...

When different servers or storage devices are in different network segments, the switch connects these segments to

Jul 28, 2025

Example for Configuring Primary and Secondary IP Addresses for an ...

As shown in Figure 1-6, the Switch has only one idle interface GE 1/0/1 to connect to a LAN. The hosts on the LAN

Mar 24, 2026

Two IP Addresses On Interface

With secondary addressing, multiple IP subnets coexist in the same LAN. It's a handy tool for non-disruptively adding

Jun 06, 2026

How To Configure A Switch For Network Segmentation?

By following this comprehensive guide, you can effectively learn how to configure a switch for network segmentation,

Dec 05, 2025

What are the implications of having two subnets on the same switch?

Can anyone tell me what some of the implications of having two different subnets on the same switch would be if

Aug 21, 2025

7 Types of Network Segmentation Explained

Learn about the different types of network segmentation and methods like physical, virtual, SDN-based that enhance

Mar 04, 2026

2 ip ranges 1 Switch

since you want 2 separate networks, you SHOULD use VLANs to create the logical separation. without them, you

Feb 28, 2026

Comparing Layer 3 and Layer 2 Switches

This article discusses the difference between layer 2 and layer 3 switches and the appropriate use cases

May 21, 2026

How to link two networks with different IP ranges

Pick one of the Linux machines on the network, assign it's interface addresses out of both ranges e.g. 192.168.0.15

Apr 26, 2026

Can switches interconnect different network segments? (with ...

In network communication, the interconnection between different network segments is crucial. As one of the core

Feb 24, 2026

Two subnets on one switch with no VLAN and possible problems

It is perfectly possible -- and not terribly uncommon -- to run two separate layer 3 (i.e, "IP") networks over one layer 2 (i.e, "Ethernet")

Feb 27, 2026

connecting two switches with different ip ranges

I have two switches that assign different DHCP IP addresses. one assigns 192.168.0.x to devices that are connected

Jan 29, 2026

L2 communication between different network segments

Is it possible to communicate between two different network segments within a single vlan? Both devices on VLAN1,

Oct 11, 2025

networking

You have your wifi router connected via the WAN port to the switches. This configuration puts all wifi (and other traffic plugged into

Dec 11, 2025

Best way to segment traffic, VLAN or subnet?

We have a medium-sized network of around 200 nodes and are currently in the process of replacing old daisy-chained switches with

Feb 15, 2026

Using one Layer 3 switch for different segments

i have a 48 port layer 3 switch and want to use 1- internet connectivity with the ISP as data center is giving 1/10 Gig

Mar 07, 2026

Can Multiple Network Segments Be Configured in a VLAN?

Hosts on multiple network segments in the same VLAN can communicate after the primary and secondary IP addresses for a

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://greatpremiersolutions.co.za>

Email: sales@greatpremiersolutions.co.za

Phone: +27 82 914 3675

Address: Unit 5, Silicon Heights, 22 Electron Avenue, Cape Town, 8001, South Africa

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