COETZER OPTICAL SYSTEMS (Pty) Ltd

Static fiber optic connection to multiple routers

Overview

A former ISP, sonic , offered six static IP addresses with their monthly service. You don''t need a router.

Key Takeaways

You can connect a single fiber optic line to multiple routers using a switch or point-to-point setup, with proper IP assignment and QoS to manage bandwidth.Basic Setup
• Fiber Termination: The fiber optic line from your ISP terminates at an ONT (Optical Network Terminal) or residential gateway, which converts the optical signal to Ethernet .

• Switch or Router Distribution: Connect the ONT to a high-speed switch (preferably gigabit or faster). From the switch, run Ethernet cables to each router you want to use .

• Router Configuration:
• Each router can operate independently, either in router mode or access point mode depending on your network design .

• Assign static IP addresses to each router within the same subnet if using access point mode, or configure separate subnets if using full router mode .

• If your ISP provides multiple public IPs, you can assign one to each router; otherwise, one router can act as the main gateway and route traffic to the others using point-to-point links .

Bandwidth Management
• To prevent one router or user from consuming all bandwidth, enable QoS (Quality of Service) or Bandwidth Control on each router .

• This allows you to set maximum and minimum speeds per device or port, ensuring fair distribution of the fiber connection across all routers .
Practical Considerations
• Router Placement: Place routers strategically to maximize coverage and minimize interference. Ensure secondary routers support the same frequency bands as the primary router .

• Testing: After setup, test connection speeds and coverage on each floor or apartment to ensure proper performance .

• IP Planning: If using multiple public IPs, coordinate with your ISP to assign them correctly. For private networks, use different subnets or point-to-point IPs to avoid conflicts .
Example Configuration
• ONT → Gigabit Switch → Router 1 (Floor 1) and Router 2 (Floor 2)

• Router 1 and Router 2 can either:
• Operate in access point mode with static IPs in the same subnet, or

• Operate as independent routers with separate subnets and default routes pointing to the main gateway .

• Enable QoS/Bandwidth Control to limit each router's maximum throughput, e.g., 50% of total bandwidth per router if two routers share the connection . By following this approach, you can effectively split a single fiber optic connection to multiple routers while maintaining network stability, fair bandwidth distribution, and independent network management.

Article Content

A single fiber connection into two independent routers

The easiest way to do is, terminate your ISP connection to single router with at least 2 independent LAN interfaces, then you can

Can an ISP provide two static IPs over a single cable?

A former ISP, sonic , offered six static IP addresses with their monthly service. You don''t need a router. You just need a hub or

networking

My ISP (providing fiber optic service) has told me that they will be able to provide 2 static IP addresses through the single fiber optic

Using fiber optic cable to connect multiple routers (both are ...

My ISP gives me an 500mpbs FIBER optic cable connection to my home. Currently I have the connection connected to my router-A

Two routers on a fibre optic network? : r/HomeNetworking

I''m a beginner with networking. We have a fiber connection in our building. The junction box (pictured) has a straight connection from

One fibre line into two separate networks? : r/HomeNetworking

In place of the existing device that plugs into the ISP service (call it FW1) a router is used, for example a Mikrotik PowerBox Pro (R1),

Example Static IP Configurations

Make sure the router connected to the Fiber Jack is set to DHCP and that one of its ports is set with one of the static IPs as the

Is it possible to connect two wifi routers to same fiber modem

My house there is a one fiber broadband port and fiber modem connected to this port using fiber cable. Then Wireless router

Using multiple static IPs

I have multiple sites with multiple static IPs on a single cable modem. This is a standard business setup. Now with that

A single fiber connection into two independent routers

Hello, I''m going to have a single 1Gbit/s fiber connection to my home. I would like to divide that connection between two floors in my

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