What is the network speed of a 100Mbps fiber optic router

Overview

A router with a 100Mbps WAN port cannot deliver more than 100Mbps of internet speed, regardless of its wireless signal rate.

Key Takeaways

A 100Mbps fiber optic router supports a maximum network speed of 100 megabits per second (Mbps), which is the upper limit for both upload and download under ideal conditions.

Technical Overview

A 100Mbps fiber optic router typically uses 100BASE-FX or 100BASE-TX standards, which are part of the Fast Ethernet family. In fiber deployments, a 100BASE-FX SFP transceiver converts electrical signals from the router into optical signals for transmission over multimode fiber, usually at a 1310nm wavelength, supporting distances up to 2 km. The router operates in full-duplex mode, allowing simultaneous sending and receiving of data at 100 Mbps each way, effectively doubling the potential throughput in ideal conditions.

Practical Implications

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Download and Upload Speeds: The maximum theoretical speed is 100 Mbps, which means downloading a 1GB file would take roughly 80 seconds under optimal conditions. Household Usage: This speed is sufficient for multiple devices performing standard activities like streaming HD video, online gaming, video conferencing, and web browsing. Limitations: If the router only has 10/100 Mbps WAN/LAN ports, it cannot exceed 100 Mbps even if the ISP provides higher speeds.

Upgrading to a gigabit router is necessary to achieve speeds above 100 Mbps.

Factors Affecting Actual Speed

Network Congestion: Multiple devices sharing the connection can reduce effective throughput. Distance and Fiber Quality: Signal degradation over longer fiber runs or poor-quality cables can lower speed. Router Hardware: Older routers may not handle full 100 Mbps efficiently, especially under heavy load.

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P Limitations: The speed from the ISP may be capped at 100 Mbps, regardless of router capability.

Summary

A 100Mbps fiber optic router provides a maximum network speed of 100 Mbps, suitable for most standard home and small office applications. While it offers reliable performance over fiber with good noise immunity and stable connections, it is not capable of gigabit speeds. For higher-speed internet plans or heavy multi-device usage, a gigabit-capable router is recommended.

Article Content

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