

Connecting optical routers and switches



Overview

Learn about the various fiber-optic components used for running fiber in your house, office, or between buildings.

Key Takeaways

To connect a router to an optical switch, use an Optical Network Terminal (ONT) to convert the fiber signal to Ethernet, then link the router's WAN port to the switch via Ethernet. Step 1: Connect Fiber to the ONT

Fiber optic cables cannot plug directly into a standard router because the signal is optical, not electrical. Your Internet Service Provider (ISP) typically provides an Optical Network Terminal (ONT), which converts the incoming fiber optic signal into an Ethernet signal that your router can use. Connect the fiber cable from the ISP to the ONT's designated optical port, ensuring the connector clicks securely in place and is free from dust or damage .

Step 2: Connect the Router to the ONT

Use a Cat6 or Cat6a Ethernet cable to connect the ONT's Ethernet output (often labeled GE1 or LAN) to the WAN/Internet port on your router. Power on the ONT first, wait for it to stabilize, then power on the router. Access the router's admin panel via a web browser (commonly 192.168.1.1 or 192.168.0.1) to configure your internet connection and Wi-Fi settings .

Step 3: Connect the Router to the Optical Switch



Once the router is online, connect it to the optical switch using another Ethernet cable:

- Plug one end into a LAN port on the router.
- Plug the other end into a supported port on the switch.
- Power on the switch and verify connectivity by checking the LED indicators on both devices .

Step 4: Configure Network Settings

- Ensure the switch is set to auto-negotiate or the correct speed/duplex mode.
- If using VLANs, configure them on both the router and switch to segment traffic as needed.
- Verify that devices connected to the switch receive IP addresses from the router's DHCP server and can access the internet .

Step 5: Test the Connection

- Connect a computer or device to the switch and confirm internet access.
- Run a speed test to ensure the fiber connection is performing as expected.
- Check that all cables are securely connected and that the ONT, router, and switch are in a well-ventilated, powered location . By following these steps, your router will successfully receive the fiber optic internet signal via the ONT and distribute it through the optical switch to multiple devices, ensuring high-speed, reliable connectivity.

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