

RIVO MULTITRADE OPTICAL SYSTEMS

Two routers connected by fiber optic cables and network cables

STAINLESS STEEL WIRE MESH

Long-lasting and durable

Comprehensive specifications

Customized non-standard products



Overview

Your current router is combining 2 separate devices that matter here, a router, and an access point.

Key Takeaways

Two routers can be connected using fiber optic cables for high-speed backbone links and Ethernet cables for local network extension, provided proper hardware and configuration are used.

Hardware Requirements

- Routers with SFP Ports: Both routers should have SFP (Small Form-factor Pluggable) ports compatible with the fiber modules you plan to use, such as single-mode or multimode SFPs depending on distance and fiber type .
- Fiber Optic Cables: Use pre-manufactured fiber patch cables with the correct connectors (e.g., LC-LC) and polish type (UPC or APC). Duplex cables are typically used for full-duplex communication .
- SFP Modules: For single-mode fiber, modules like MikroTik S-3553LC20D can transmit over long distances (up to 20 km). BiDi modules can use a single fiber strand with different wavelengths for each direction .



- Ethernet Cables: Use at least CAT5e or CAT6 cables for LAN connections between routers or to devices, ensuring gigabit speeds if required .

Connection MethodsFiber Optic Backbone

- Connect the SFP ports of both routers using the fiber optic cable and compatible SFP modules.

- Ensure the fiber type matches the SFP module specifications (single-mode for long distances, multimode for short distances) .

- Duplex fiber is recommended for standard full-duplex communication; BiDi modules can reduce the number of strands needed .

Ethernet LAN Extension

- Connect the secondary router to the primary router using an Ethernet cable.
- For a seamless network, configure the secondary router in Access Point mode or LAN-to-LAN mode, disable DHCP on the secondary router, and assign it a static IP within the primary router's subnet .
- This setup avoids double NAT and allows devices connected to either router to communicate on the same network .

Configuration Tips

- IP Addressing: Assign a static IP to the secondary router within the same subnet as the primary router but outside the DHCP range to prevent conflicts .
- SSID Management: Use different SSIDs for each router if you want to distinguish networks, or the same SSID for seamless roaming .
- Advanced Settings: Optimize performance by checking firmware updates, enabling proper QoS, and ensuring frequency bands do not interfere .
- Testing: Verify connectivity over both fiber and Ethernet links, ensuring devices can access the internet and communicate across routers.

Practical Considerations

- Distance and Loss: Fiber loss is approximately 0.5 dB/km for high-quality fibers; ensure SFP modules' Tx power and Rx sensitivity are compatible with the cable length .
- Network Segmentation: If you need separate networks (e.g., guest Wi-Fi or IoT devices), connect the secondary router via WAN port and configure a different subnet .
- Avoid Direct Dual Router Connection to ONT: Most ISPs provide a single public IP; connecting two routers directly to the fiber modem is generally not supported without special ISP provisioning . By combining fiber optic connections for high-speed backbone links and Ethernet for local distribution, you can achieve a robust, high-performance network with extended coverage and flexibility. Proper hardware selection, cabling, and configuration are key to ensuring stability and avoiding conflicts.

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Conclusion Connecting two routers on the same fibre optic line can be an effective solution to extend your network

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