

Fiber optic cable cannot be connected to network cable



AI Overview

Fiber optic cables cannot be directly connected to RJ45 network cables because they use fundamentally different signal types and connectors.

Signal Type Differences

RJ45 Ethernet cables transmit electrical signals over twisted-pair copper wires, while fiber optic cables transmit light pulses through glass or plastic fibers. Electrical signals cannot travel through fiber, and light signals cannot be interpreted by copper-based network interfaces without conversion hardware, making a direct connection impossible .

Connector Incompatibility

RJ45 connectors rely on metal contacts to transmit electrical signals, whereas fiber connectors (such as LC, SC, or ST) require precise optical alignment to transmit light. Attempting to plug a fiber cable into an RJ45 port will not physically or functionally work .

Device Requirements

To connect fiber to a copper network, devices must have optical transceivers (SFP, SFP+, or QSFP modules) or media converters that convert electrical signals to optical signals and vice versa. Without these devices, routers, switches, or network cards c...

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