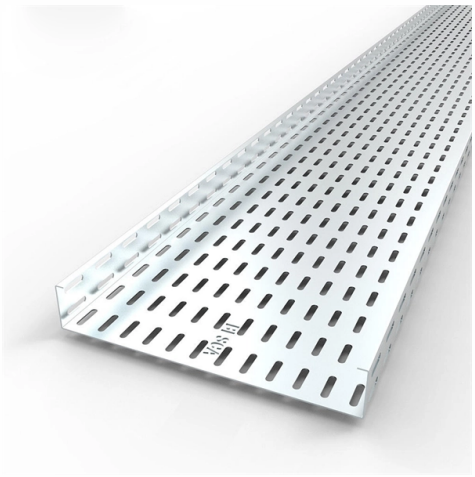
# Do fiber optic cables and routers have to be placed next to each other



## Overview

Fiber optic cables should not be mixed with copper cables as the heavier copper cables can stress the fiber cables. Sometimes the fiber is hung below cable trays to protect it from masses of copper.

## Key Takeaways

Fiber optic cables and routers do not need to be placed right next to each other; they can be connected via Ethernet cables over significant distances without affecting performance.

### Fiber-to-

### Router Connection

In a typical fiber-optic internet setup, a fiber cable runs from a terminal outside your home to an Optical Network Terminal (ONT) inside or outside your home.

### The ON

T converts the light signals from the fiber into electrical signals that your router can use. The connection between the ONT and the router is made using a high-speed Ethernet cable, usually Cat6 or better, which ensures stable and fast data transfer.

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### Distance Flexibility

Ethernet cables connecting the ONT to the router can be up to 328 feet (100 meters) long without noticeable impact on internet speed. This means your router can be placed in a more central location in your home for optimal Wi-Fi coverage, rather than being constrained to the location of the ONT. If your home is larger, you can also use mesh Wi-Fi systems to extend coverage while keeping the router at a convenient location.

### Electrical Isolation and Safety

One advantage of fiber-optic connections is that they provide electrical isolation, protecting your network from power surges and interference that can affect copper Ethernet or coaxial cables. This allows for safer and more flexible placement of network devices, including routers and switches, without worrying about electrical hazards.

### Practical Recommendations

Place your router in a central, elevated location to maximize Wi-Fi coverage and minimize interference from walls, metal objects, or appliances. Use high-quality Ethernet cables (Cat6 or better) to connect the ONT to the router, especially if the distance is significant. If your ONT and router are combined in a single device, placement flexibility is limited, but otherwise, the router can be positioned independently for optimal signal distribution.

Avoid bending fiber cables beyond manufacturer recommendations to prevent signal loss or microfractures. In summary, fiber optic cables and routers do not need to be next to each other. Using Ethernet connections, you can place your router wherever it provides the best Wi-Fi coverage while maintaining a reliable high-speed connection from the ONT.

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The ONT (about the size of a Master Socket) is placed on an inside wall within a metre of a power socket. A good installer will work with on on location of the ONT so long as it''s feasable. As

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Fiber optic technology has revolutionized the telecommunications industry, enabling faster and more reliable data transmission. One essential component of a fiber optic network is the

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