Direct connection to overseas optical fiber cables



Overview

These cables, composed of optical fibers encased in protective layers, stretch across oceanic floors, linking major economic centers worldwide.

Key Takeaways

Overseas internet traffic primarily travels through undersea fiber-optic cables, connecting continents via landing stations and high-capacity fiber networks.

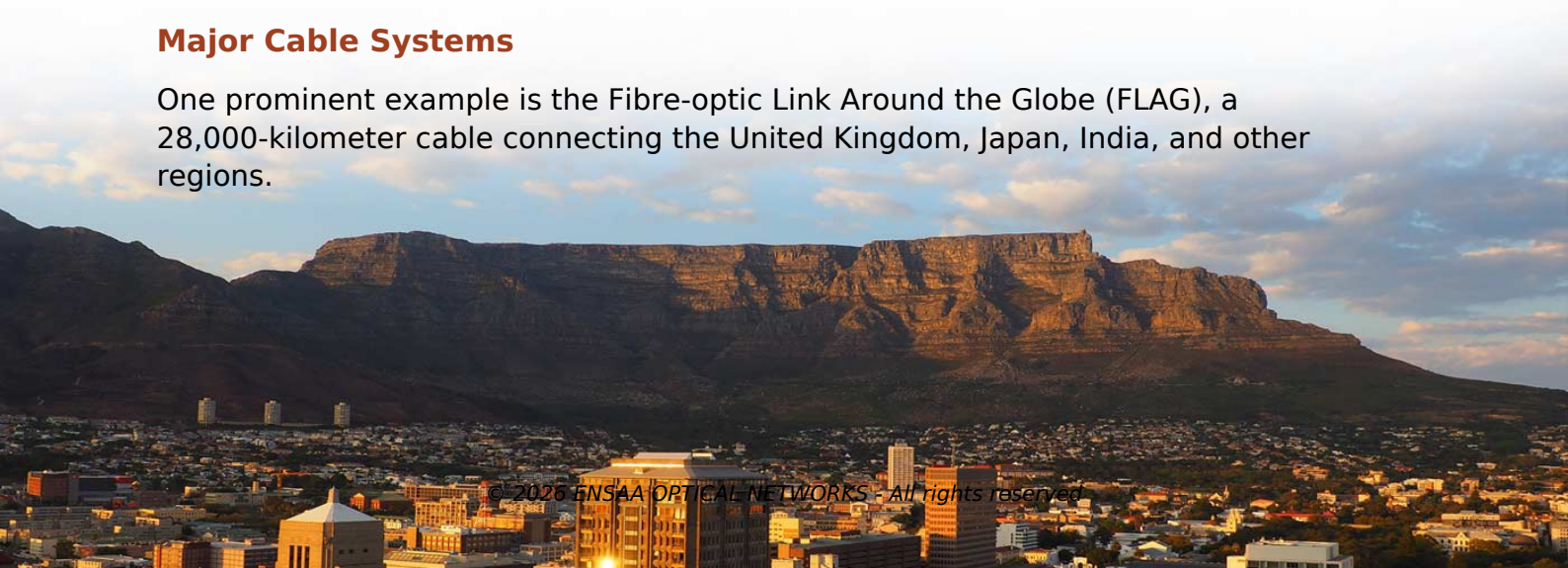
Overview of Submarine Fiber-

Optic Cables

International internet connectivity relies on submarine fiber-optic cables, which are glass fiber lines laid on or slightly beneath the ocean floor. These cables transmit data as light signals at nearly the speed of light, with repeaters installed every 50–100 km to maintain signal strength and ensure high-speed transmission across thousands of kilometers. Each cable contains multiple fiber pairs, each capable of carrying multiple terabits of data per second, making them the backbone of global internet traffic.

Major Cable Systems

One prominent example is the Fibre-optic Link Around the Globe (FLAG), a 28,000-kilometer cable connecting the United Kingdom, Japan, India, and other regions.



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FLA

G carries over 120,000 voice channels and was designed to link Europe and Asia with high-speed connectivity. Globally, there are over 500 active submarine cables spanning more than 1. 4 million kilometers, delivering petabytes of data every second.

How Direct Connections Work

To establish a direct connection to overseas fiber-optic cables: Local Access: Your device connects to a local ISP or data center. National Infrastructure: Data travels through national networks to a cable landing station, which is the physical point where the undersea cable reaches land. Undersea Transmission: The signal is transmitted through the submarine cable to the destination continent.

Destination Routing: At the landing station abroad, data is routed to the target server or network via local infrastructure. These landing stations are often located near major coastal hubs and population centers, forming critical nodes in the global network.

Additional Considerations

Redundancy and Parallel Routes: Multiple cables often run in parallel to prevent disruptions. Chokepoints, such as the Red Sea, can create temporary congestion if a cable is damaged. Internet Exchange Points (IXPs): These facilitate efficient routing between networks and can enhance direct connectivity to international networks.

Satellite Backup: Satellites provide minimal global traffic support, mainly for remote areas, but are not a primary method for high-volume intercontinental data transfer.

Resources for Visualization

Interactive maps like the Submarine Cable Map and TeleGeography's visualizations allow users to explore cable routes, landing stations, and global connectivity patterns. These tools are useful for understanding the physical infrastructure behind direct overseas connections. In summary, direct connections to overseas optical fiber cables involve accessing local networks that link to submarine cables via landing stations, enabling high-speed, high-capacity international data transfer across continents.

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European Union submarine internet cables

Submarine internet cables, also referred to as submarine communications cables or submarine fiber optic cables, are essential infrastructure that connect different locations and data centers to reliably

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