

Tonga is used for optical fiber cables

Article Overview

The Tonga Cable System is an 827-kilometer submarine fiber-optic cable connecting Tonga to Fiji, providing international internet connectivity for the entire nation.

Overview

The Tonga Cable System links Sopo, Nukunono in Tonga to Suva, Fiji, where it connects to other international networks, including the Southern Cross Cable Network . Commissioned in August 2013, the cable was designed with two fiber pairs and an initial operational capacity in the low tens of gigabits per second, suitable for Tonga's national traffic profile at the time . Over the years, optical upgrades have increased its practical capacity without altering the physical cable .

Ownership and Funding

The cable is owned and operated by Tonga Cable Limited (TCL), a joint venture between the Government of Tonga, Tonga Communications Corporation, and Digicel Tonga . The project was financed with support from the Asian Development Bank (ADB) and the World Bank, with a total investment of approximately \$32.8 million, covering civil works, cable procurement, consulting, and taxes . The construction contract was executed by SubCom (formerly TE SubCom).

Extensions and Domestic Connectivity

In April 2018, the cable was extended with a 410-kilometer domestic inter-island segment, connecting the main island of Tongatapu to the outer island groups of Ha'apai and Vavau. This extension, sometimes called the Tonga Domestic Cable Extension (TDCE), improved broadband access across the archipelago .

Disruptions and Repairs

The Tonga Cable has experienced several major disruptions:

- o January 2019: The cable broke, temporarily cutting internet access; satellite communications were used as a backup .
- o January 2022: The Hunga Tonga-Hunga Ha'apai volcanic eruption caused underwater density currents that severed the cable, disconnecting Tonga from the international internet for 38 days .
- o Repairs are complex, requiring specialist ships from SubCom, often deployed from Port Moresby, Papua New Guinea, and can take weeks depending on conditions .

Impact and Significance

Tonga is used for optical fiber cables

The Tonga Cable System provides substantially higher initial capacity (10 Gbps) compared to satellite alternatives and reduces international connectivity costs by at least 50% . It has been critical in stimulating broadband adoption, lowering telecommunications costs, and supporting economic development in Tonga . The cable is considered national infrastructure, emphasizing reliability and accessibility over commercial profit, reflecting its role as a developmental asset .

Technical Summary

- o Length: 827 km (Tonga-Fiji)
- o Landing Points: Sopo (Nukunono, Tonga), Suva (Fiji)
- o Fiber Pairs: 2
- o Initial Capacity: Low tens of Gbps, upgraded over time
- o Domestic Extension: 410 km to Ha'apai and Vavau
- o Operators: Tonga Cable Limited, Digicel Tonga, Tonga Communications Corporation
- o Funding: ADB, World Bank, Government of Tonga The Tonga Cable System remains the sole international fiber link for Tonga, making it a critical piece of infrastructure for the country's connectivity and digital development .

Yvonne Yong explains how a single fibre optic cable connected Tonga to the rest of the world.

Tonga Cable Limited (TCL) owns and manages the fibre-optic submarine cable, connecting Tonga to Fiji,

The South Pacific archipelago of Tonga could spend days, or even weeks, cut off from the rest of world because of

Fiber-optic Cable A fiber-optic cable, also known as an optical-fiber cable, is an assembly similar to an electrical cable but containing

How are fiber-optic cables stretched across continents? For each fiber-optic cable connection that links continents,

A volcanic eruption in the South Pacific Ocean in January 2022 caused a tsunami and

Tonga is among the most remote countries in the world, with a population spread across dozens of small islands. The World Bank is

Tonga Cable System is a submarine fiber-optic cable system connecting Tonga with Fiji, where it connects to other international

Tonga is used for optical fiber cables

A volcanic eruption in the South Pacific Ocean in January 2022 caused a tsunami and damaged an undersea fiber

The expected life of the new submarine fiber optic cable is 25 years. TCL expects to commence preparatory work for cable

It is estimated that there are more than 430 cables around the world, spanning distances of

The Tonga-Fiji Submarine Cable System (also known as Tonga Cable) is a 827km fiber optic submarine cable system linking

Use our fiber 101 tutorials and videos and get the fiber optic basics to learn why optical fiber has

TeleGeography's comprehensive and regularly updated interactive map of the world's major submarine cable systems

The plethora of fiber optic cable types can seem overwhelming, but choosing the right cable

The Tonga-Fiji Submarine Cable Project will provide a submarine fiber optic cable system linking Tonga to Fiji where an existing

Web: <https://www.kremgroup.co.za>

