



EllaLink Powers Low-latency Trans-Atlantic Cable System with Infinera ICE6

A Networking Case Study

Over the past decade, network-based applications have steadily replaced locally run applications for many users. Regardless of how network-based applications are used, they all operate far more effectively if the latency of the network is low, making low latency over long distances— such as between Europe and Latin America – extremely attractive for network operators.

However, until recently, high-capacity data services passing between the Iberian Peninsula and Latin America have generally taken a very indirect route – from Europe to the U.S. and then down to Brazil. But this is set to change thanks to the EllaLink express optical platform, which offers a direct route via a high-capacity submarine cable from Sines in Portugal to Fortaleza in Brazil powered by Infinera’s state-of-the-art ICE6 800G coherent technology. Since the physical route length contributes almost all the network latency for long-distance routes, EllaLink halves latency compared to existing high-capacity routes while supporting total capacity of up to 100 Tb/s with wavelength data rates between 500 Gb/s and 700 Gb/s.

EllaLink

Customer

EllaLink, a state-of-the-art submarine cable system linking Portugal and Brazil

Challenge

Offer secure, high-capacity, low-latency connectivity over a direct single-hop transmission path between continents

Solution

Infinera ICE6 800G coherent technology on the GX Series Compact Modular Platform

Results

The first high-capacity direct link between the Iberian Peninsula and Latin America

“I am proud to announce that we have successfully completed the 6,000-km submarine cable installation, providing EllaLink with the robust system it needs to support the network through its lifetime. Infinera’s ICE6 solution is an ideal fit for us, outperforming other available 800G equipment. Coupled with our differentiated fiber routes, Infinera and ICE6 will provide us the means to offer our customers advanced products and services from day one, in May 2021.”

– Diego Matas, Chief Operations Officer, EllaLink

SCALABLE COMPACT MODULAR CONNECTIVITY POWERED BY ICE6 800G OPTICAL ENGINE

EllaLink will also benefit from the unique innovations in Infinera’s ICE6 technology, such as long-codeword probabilistic constellation shaping (LC-PCS) and Intelligent Power Management (IPM), which provide industry-leading performance. Infinera’s solution enables EllaLink to create products that benefit its customers by providing a wide range of accessible and flexible services, including direct PoP-to-PoP connections and advanced spectrum sharing.

EllaLink was designed to make the most of the latest generation of coherent transponders by using a large-area, low-loss optical fiber with no chromatic dispersion compensation over the length of the cable. This type of positive dispersion cable was specifically designed to optimize the performance of coherent transponders because they have a much lower nonlinear penalty than older, dispersion-managed cables. Infinera's ICE6-based coherent optical engine takes advantage of this to demonstrate outstanding optical performance.

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BENEFITS OF INFINERA ICE6 AND GX SERIES

The sixth-generation Infinite Capacity Engine (ICE6) is a 1.6 Tb/s optical engine that delivers two independently programmable wavelengths at up to 800 Gb/s each. ICE6 utilizes second-generation digital Nyquist subcarriers, advanced PIC technology, and 7-nm DSP silicon geometry to break performance and spectral efficiency barriers. ICE6 enables network operators to meet the demands of rapid bandwidth growth by providing the greatest capacity at the greatest reach, resulting in a solution with the lowest cost and power per bit and the highest spectral efficiency possible.

Featuring a flexible sled-based design and with some of the industry's lowest power consumption and highest density, the Groove (GX) Series leverages ICE6 to offer superior optical performance of up to 800G per wavelength along with feature-packed automation. The platform provides a powerful, compact, and flexible solution for a broad range of metro, regional, and long-haul connectivity applications.

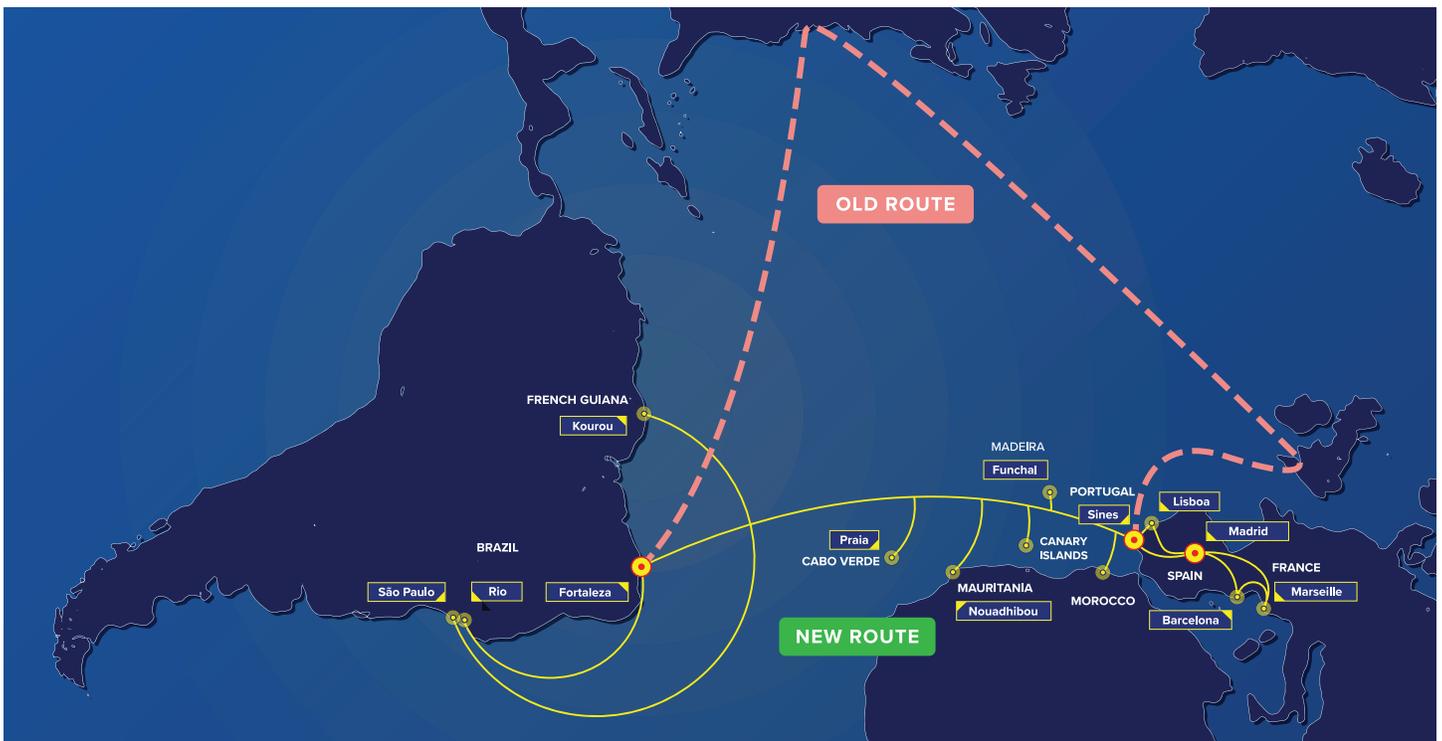


Figure 1: Network Map