California's MetroLink®
Upgrades with JumboSwitch®

Case Study

Situation

As part of its Services Expansion Project, the Southern California Regional Rail Authority (Metrolink) needed to upgrade its communications and signaling network to meet the demands of increased ridership.

In addition to Ethernet connectivity between Control Points, it needed a "communications pipe" for backhauling existing 900Mhz radio/voice communications. Metrolink also intended to backhaul traffic from PTC radio towers.

Because of extreme heat in some locations in the summertime, hardware units for the upgrade needed to be temperature hardened to +80º.

Other important elements for future expansion included building in flexibility and scalability and adding voice capability for private network telephone service to replace current use of cell phones.

Solution

Reinforcing its goal to support PTC, future growth and scalability, Metrolink opted to go with the JumboSwitch multi-service Ethernet Switch platform.

In addition to giving Metrolink the option to grow its communications architecture to support PTC, the JumboSwitch lowered Metrolink's network build-out costs, training, certifications and maintenance. It also met Metrolink's environmental requirements for a rugged switch that would withstand temperatures up to +80ºC.

Because the JumboSwitch's TDM over IP capabilities, it was able to connect remote Control Points to radio towers with Analog/Dry Contact interface cards. JumboSwitch telephone and T1 cards are available for future needs and expansion.
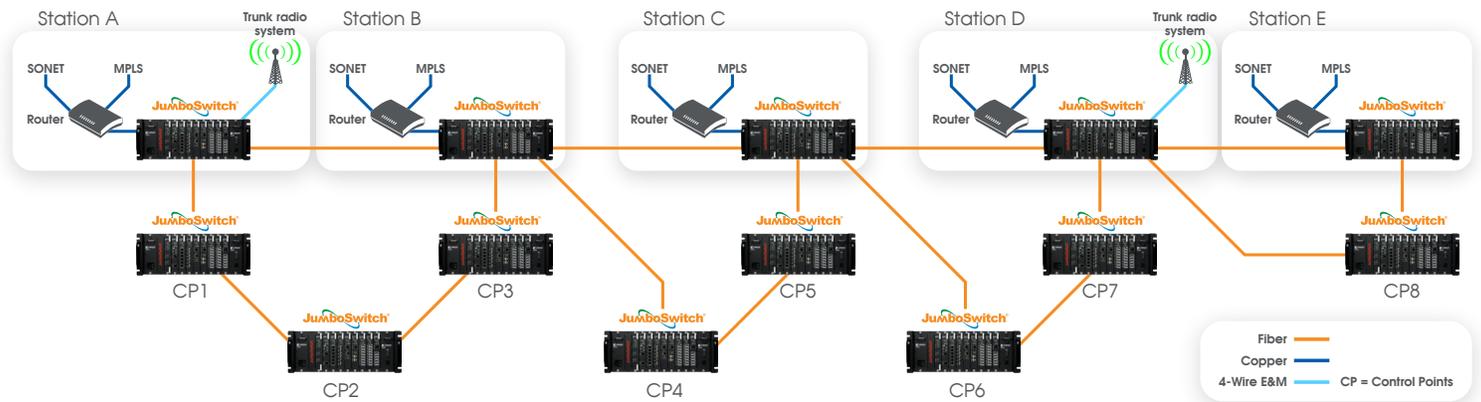
Metrolink's network now features 67 communication shelters and Control Points, each one consisting of a JumboSwitch and SONET node, MPLS connection T1, Router at the Shelters.

The JumboSwitch installation is running smoothly and Metrolink plans to employ it in additional rail line locations moving forward as Metrolink continues to build out its communications network.

Products Used

- JumboSwitch® 4U Chassis
  - *TCRM197*
- 6-port copper gigabit Ethernet switch cards
  - *TC3841*
- 6-port SFP gigabit Ethernet switch cards
  - *TC3842*
- 1-4-ch. 600 ohm analog and dry contact over IP gateway cards
  - *TC3846-6*

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Metrolink and Centralized Train Controls (simplified). The actual network involves 6 stations and 22 control points (CPs).

About TC Communications

TC Communications specializes in TDM over IP network solutions including Analog Radio, Voice, Serial and T1 products. Applications include Leased Line Replacement, Voter Comparator over IP and Multi-Service communication networks. Focused on mission-critical applications, TC products are designed to help Public Safety networks transition to IP/Ethernet without replacing existing analog equipment. All services including engineering, manufacturing, and support located in Irvine, California, USA since 1991.