

Case study

County of LA Fire Department counts on cellular failover to keep emergency vehicles online in critical moments



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Image courtesy of Getty Images

Ericsson NetCloud Manager and Cradlepoint dual-modem routers improve fleet monitoring and updates

Customer:
County of LA Fire Department

Industry:
Public safety

Use Case:
Ericsson NetCloud Manager

Success story highlights

Challenge — The County of Los Angeles Fire Department (LACoFD) had an aging and decentralized in-vehicle network that used a privately-built LTE network alongside a commercial network, which was congested by millions of LA-area residents. This left public safety agencies competing for access and bandwidth, which was especially problematic during emergencies.

Solution — LACoFD deployed Ericsson NetCloud Manager and dual-modem routers in more than 1,000 fire apparatuses and 400 support vehicles. This solution included Wi-Fi, GPS with telematics integration, and cloud configuration controls and analytics.

Benefits — With dual-modem functionality for multi-carrier failover, support for nationwide public safety networks, and a slew of management features at its disposal, LACoFD has a more reliable, comprehensive, and manageable network for its widespread vehicles.

"Our Ericsson Cradlepoint routers are working so seamlessly that the firefighters don't even think about it. They can focus on their critical work instead of on technology."

Scott England, telecommunications systems consulting engineer, County of Los Angeles Fire Department

Background and challenges

Beyond providing firefighting and emergency medical services to LA County citizens, LACoFD is the coordinator for all mutual aid — federal, state, county, and city — operations in the region. It is a secondary public safety answering point (PSAP) assisting 42 primary PSAPs with over 800,000 inbound and outbound calls and 400,000 responses yearly.

The agency operates a fleet of hundreds of apparatuses and service vehicles, most of which include mobile data computers, tablets, and other communication and IoT devices.

Aging connectivity and communication solutions

LACoFD struggled with an aging network. Millions of local residents often congested its legacy commercial broadband service, forcing public safety agencies to compete for bandwidth. The outdated networking solution posed additional challenges, including dead zones, and similarly antiquated equipment could not keep pace with rapidly advancing cellular technology.

Lack of centralized management

Legacy networking equipment was incompatible with a centralized management solution, making configuration updates highly time-consuming for IT teams. The department required a comprehensive network management solution that could relay granular network traffic and security details, monitor and adapt for network health, and allow IT administrators to configure the network remotely to deliver optimal network performance for improved operations.



Images courtesy of County of LA Fire Department

Solution

LACoFD deployed Ericsson NetCloud Manager and Cradlepoint routers in 1,000 fire apparatuses and 400 support vehicles. The dual-modem routers provided simultaneous support for public cellular networks as well as nationwide public safety networks, enabling seamless wireless-to-wireless failover.

"Our Ericsson Cradlepoint routers are working so seamlessly that the firefighters don't even think about it. They can focus on their critical work instead of on technology," said Scott England, telecommunications systems consulting engineer for LACoFD.

NetCloud enables the department to centrally monitor, manage, and troubleshoot network connectivity and data security. The agency also collaborates with Ericsson's highly experienced support experts as it scales up and rolls out new technologies.

Benefits

Seamless failover across fluctuating landscapes

During emergencies, dual-modem routers in the LACoFD fleets have access to dedicated public safety networks and can intelligently switch between multiple cellular carriers as network conditions fluctuate.

Based on predetermined metrics and policies, the routers constantly monitor factors such as latency, jitter, signal strength, and data usage; when certain thresholds are crossed, network traffic automatically shifts to the second cellular carrier.

“With dual modems, if a fire apparatus drives into an area that is a dead spot for one carrier, the solution automatically switches to the other carrier. This failover has been so seamless that the firefighters don’t even notice a difference on the applications they are running. It has been remarkable,” England said.

Actionable coverage insights

With GPS information, location tracking, and easy-to-read map views, Ericsson solutions allow the fire department to track where each vehicle has traveled and its cellular performance at each point. LACoFD uses this network performance data to track when the router switches carriers, which provides insights into each carrier’s dead zones and strongest coverage areas.

Using this critical cellular coverage information, the department can work with each carrier to build out coverage in critical areas.

Secure Wi-Fi on separate networks

Whether at an emergency site locally or outside the region, LACoFD can use Ericsson Cradlepoint routers to quickly set up two secure, isolated Wi-Fi networks: one for mission-critical dispatch devices and the other as a guest network.

“Ericsson understands that our first responders work 24/7. The support team is always there for us by providing technical expertise through their hotline and other support tools,” England said.

The critical dispatch network is devoted to high-priority traffic such as dispatch calls, automatic vehicle location (AVL), ePCRs, department tablets, and other devices that support critical operations. The configuration ensures emergency calls always get through. The guest network allows firefighters and other mutual aid partners to connect personal devices that contribute to department operations.

Centralized monitoring and management

LACoFD team members use NetCloud Manager for real-time access to information such as the number of devices online and offline, as well as data usage. They can even use the tool to monitor network traffic analytics based on application activity, then make adjustments to optimize performance.

NetCloud Manager enables LACoFD to roll out these updates and modem firmware upgrades all at once, instead of driving each vehicle back to headquarters every time an issue arises. The team can make fleetwide changes from one screen in minutes instead of days or weeks via manual intervention.

Comprehensive security for sensitive information

Ericsson’s solution provides comprehensive network security features, including a firewall, VPN capabilities, content filtering for guest Wi-Fi, and an online dashboard that details security-related activity and incidents from the devices connected to LACoFD’s network. This enables the administrator to monitor network activity from a single pane of glass.

Learn more at cradlepoint.com



Image courtesy of County of LA Fire Department

