SUCCESS STORY

City and County of San Francisco Department of Emergency Management

San Francisco Keeps Citizens Safe with Reliable Emergency Management

San Francisco's natural beauty and pleasant weather draw 16 million-plus visitors each year to Northern California. A regular among the top five international travel destinations, this metropolitan city offers a wide selection of museums, restaurants, and national attractions, including the Golden Gate Bridge, for tourists and its more than 800,000 residents.

The compact city spans a relatively small geographic footprint of seven square miles, making it a densely populated, extremely vibrant area. With so much activity, the local government's Department of Emergency Management has its hands full responding quickly to anything out of the ordinary.

EXECUTIVE SUMMARY

Challenge
Upgrade network of a 911 emergency services department without disrupting service or compromising reliability

Solution
• Brocade MLX Series Routers at the core

• Brocade ICX 6610 Switches for aggregation and edge

• Fully redundant network configuration for high availability

Results
• Department of Emergency Management can initiate upgrades and maintenance of 911 system without disrupting services

• Mission-critical emergency services are experiencing zero latency and 100 percent network uptime

• Network throughput can be increased from 1 Gigabit Ethernet (GbE) to 10 GbE with a simple license upgrade, without having to purchase new equipment

Tasked with answering and responding to 911 calls, preparing for potential disasters, and assisting with homeland security for the San Francisco Bay Area, the department is focused on serving its citizens' needs. Given the critical, 24×7 nature of 911 systems, failure is not an option, and even upgrades and maintenance must be completed without disrupting service.

"Our hardest challenge is ensuring that our 911 system is working all the time," says Anthony Martin, Public Safety Support Group Manager for the City and County of San Francisco. "Anytime you're dealing with computers, people, routers, switches, and firewalls, there's the possibility of failure, so we had to engineer a system that would work reliably without fail. It has to stay up the whole time people are calling 911 for service and support."

As a government entity with strict budgets, creating such a system was not easy. "When we evaluate new networking products, the first thing we're interested in is performance," Martin says. "The next factor is cost. We'd like unlimited funding, but that's not going to happen, so we have to use our money wisely and find cost-effective solutions." Also extremely high on the list are service and support to ensure that the system is effective in the long term.

The Solution to the Emergency
The department spent two years evaluating networking solutions based on interoperability, reliability, fault tolerance, and resiliency. "We did thorough, exhaustive testing to make sure that everything was going to work as we expected," Martin says. "We chose Brocade because its switches delivered the upgradability, reliability, and fault tolerance we needed at a very competitive price point."

Within the new 911 system, two Brocade® MLX® Series core routers deliver high performance, scalability, reliability, and redundancy on a full-time basis. Twenty Brocade ICX® 6610 Switches provide connectivity to 911 dispatchers as well as to servers, the fire department, and other public safety entities. The Brocade network components also support other critical systems and areas.

"We have experienced zero latency," says Roman Shuboff, Network Engineer for Public Safety at the Department of Emergency Management. "I know that the performance will be there when we need maximum performance, and I can't say the same thing for other manufacturers. Many claim that their equipment can perform at a certain level, but the actual performance is disappointing."

Simplified network management was also an important factor for selecting Brocade. "The Brocade operating system is much more intuitive," adds Shuboff. "There aren't layers upon layers of menus, like with our prior network. It's easy to navigate through to configure and manage the network."

Staying Online 24×7

Upgrading the department's 911 system to the new Brocade switches was seamless and pain free—and, most important, it did not impact the city's service. "Network upgrades can be like changing a tire on a vehicle that's going 65 mph," Shuboff says. "We don't have a lot of downtime to implement new technology or make upgrades. Brocade lets us implement new gear in a short amount of time while maintaining the services that the residents of San Francisco expect."

Future changes promise to be just as easy. "We can make upgrades without affecting the network," notes Shuboff. "We can take an entire router chassis offline, upgrade it, and still have routing capability within our network and other network segments connected to that chassis."

Prior to the implementation, the Brocade support team demonstrated why it is best in class. Martin identified an anomaly within the test system but was not sure if it was the new servers, software, or infrastructure. "This is 911, and we needed to take care of it immediately," he says. "And Brocade did just that. They quickly identified the issue, which turned out not to be with the network. We learned some valuable lessons, and Brocade provided us with phenomenal support, which is extremely rare these days."

A Smooth Upgrade Path

With the upgraded 911 system in place, San Francisco residents and visitors can sleep better at night knowing that emergency calls will be answered and help dispatched at all hours. The redundant, fault-tolerant architecture ensures that there are never any hiccups or outages across this mission-critical network.

"We're very proud of the work that we did, and we're very, very happy with the reliability," adds Martin. "It's like the phone company: if it works, you never get a compliment; they notice rapidly if it doesn't. And the fact that nobody notices the network means it's working very, very well."

WHY BROCADE

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—Anthony Martin, Public Safety Support Group Manager for Public Safety, City and County of San Francisco Department of Emergency Management

Currently, the system is utilizing 1 Gigabit Ethernet (GbE) ports on its switches, but as additional bandwidth is required, ports can be upgraded to support 10 GbE with a simple license upgrade. "We know that we'll need 10 Gigabit Ethernet connectivity in the future," says Shuboff. "Knowing we can simply purchase a license was one of the reasons we went with the Brocade ICX 6610 Switch. The ability to upgrade a port without having to buy new equipment is fantastic. We're more efficient, and our network infrastructure makes us well positioned for whatever the future brings."

For more information, visit www.brocade.com.

Disclaimer: Department of Emergency Management staff are speaking as individuals, and not on behalf of the department.

Corporate Headquarters
San Jose, CA USA
T: +1-408-333-8000
info@brocade.com

European Headquarters
Geneva, Switzerland
T: +41-22-799-56-40
emea-info@brocade.com

Asia Pacific Headquarters
Singapore
T: +65-6538-4700
apac-info@brocade.com

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