



Maricopa Region 911

Executive Summary

Company

Maricopa Region 911

Location

25 public safety answering points in the Phoenix, AZ area

Key Applications

911 calls and mapping

Challenge

Ensure network resiliency to support 911 services

Solution

Talari SD-WAN

Results

- Handles more than 2.2 million calls/year, with a growing percentage handled as VoIP
- Ensure the highest levels of resiliency for the IP network supporting 911 calls and related applications
- Built foundation for Next-Generation 911
- Greater choice of WAN technologies

<http://www.talari.com>

Customer Case Study

Maricopa Region 911 Responds to Emergencies Fast with a Talari SD-WAN

When people in Phoenix and the surrounding areas need emergency help, they dial 911 and are connected to the most appropriate 911 call center based on their location. In 2014 alone, there were more than 2.5 million wireless 911 calls for police, fire and medical assistance across the Maricopa region. Over the last five years, more and more of those 911 calls and their associated applications have been migrated over a Talari SD-WAN.

Emergency Dispatch Without Fail

In 2010, Maricopa Region 911 (MR911) deployed a Talari SD-WAN to bring real-time, packet-level intelligence to the network that connects 25 Public Safety Answering Points (PSAPs) and its two data centers to ensure that emergency calls are not impacted by underlying network issues. In addition to improved WAN reliability, MR911 has realized benefits including increased network capacity, lower costs and the ability to build a converged WAN that is the foundation for its move to Next-Generation 911 (NG911).

At the time, MR911 used frame relay for its primary network with IPSec VPN as a backup. The frame relay was generally reliable, but when there were troubles, it could take up to eight seconds for the routers to transfer traffic to the IP VPN—an eternity for emergency services.

Talari's intelligent networking technology facilitates quality-based routing, not just policy-based routing. Latency, packet loss and jitter are measured on each path to create a comprehensive and intelligent real-time view and to allow Talari's patented technology to micromanage the network quality. Network problems are detected and traffic is proactively redirected in milliseconds. "If a WAN link goes down, the call-takers are unaware," says Dave Dansevicius, 911 Integrated Systems Administrator at MR911. "The peace of mind and visibility we get with Talari is invaluable in terms of knowing we are going to deliver those calls without interruption."

Dansevicus cited a recent issue where a service provider reset a switch in its core network, which could have caused problems for half of the PSAPs.

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Administrator
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"If we had been running a standard routing protocol, it would have been a mess," he recalls. "With Talari, we saw it all go red, and we phoned the vendor without worrying about things spinning out of control." When a carrier link failure does occur, Talari's detailed metrics allow MR911 to avoid the blame game and get the SLAs they were promised.

A More Flexible Network

Five years and counting, the value of a Talari SD-WAN continues to grow. With a high quality WAN, MR911 is in the process of further consolidating its data and voice networks and carrying its critical 911 traffic over a converged network. And that paves the way for NG911.

With a converged IP network, MR911 can turn up IP trunks quickly as needs change. For example, it needed additional trunk capacity at one 911 PSAP during the 2015 Super Bowl. "We were up and running with just a few hours of work, and Talari was the smallest piece of it," says Dansevicius. "We didn't need to engage a vendor for additional trunks or incur additional expenses."

Having Talari in place to mitigate link outages and bolster capacity gave MR911 the flexibility

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to add a new centralized web-based mapping solution that displays the caller's location, a map of the surrounding area, and pictometry images of building facades to give first-responders greater situational awareness.

The ability to run backups over the WAN was an unexpected benefit of Talari. Previously, workers in the 911 call centers were responsible for server backups, which was a time-consuming and unreliable process. Talari's intelligent link aggregation and integrated QoS features made it possible to easily and safely mix the live 911 traffic and back-up data. "With Talari, we're able to prioritize traffic so that we can have active 911 calls, 911 mapping data and server backup over the network at the same time," he says. "Talari handles it flawlessly."

Making the Most of Bandwidth

Having a Talari SD-WAN has resulted in cost savings. MR911 moved from frame relay and leased legacy telecom circuits without operational disruption. "The beauty of Talari is that we were able to migrate to metro Ethernet with no visible downtime to our customers," says Dansevicus. "We were able to stay up over the Internet connection and swap everything from one carrier to another."

A Talari SD-WAN allowed MR911 to get the most out of the money it's already spending. Before, the IP VPN only carried traffic when a primary link failed, which meant that most of the time, the bandwidth sat unused. Now, MR911 seamlessly aggregates the bandwidth from the metro Ethernet and VPN connections, increasing the effective bandwidth to each call center. "We have multiple sites using Talari for 911 voice, and we've been able to shut down their analog voice trunks, which had a monthly recurring cost," he says.

MR911 continues to make its WAN more resilient by connecting to regional dark fiber and microwave links owned by government entities. "Our original vision was to become a network of networks, thereby increasing our resiliency. The Talari solution is pretty exciting in that it allowed us to reach that goal and can manage it for us," says Dansevicus. "We now have more than 50 percent penetration where there are three or more paths into a 911 PSAP."

Increased WAN Visibility

Talari's on-board tools for performance management, configuration management, fault management, and troubleshooting are much appreciated. "We look at the Talari statistics screen all the time, and we are always making sure everything is green," he says. "If it's not, we engage."

"We rely on Talari's performance monitoring to notify our carriers of issues," he says. "We are able to hold carriers accountable and quantify how long an issue lasted. It's been a huge benefit of Talari."

Looking Back, Looking Ahead

The relationship with Talari has been strong throughout the years. "When we had the turn-up for the first site, we had Talari engineers working on an issue on a Sunday so we wouldn't miss our cut date," Dansevicus recalls. "I wish all of our other vendors had the excellent customer service and ownership attitude that Talari offers. It's just outstanding."

Five years ago, a Talari SD-WAN had to prove its worth at MR911, and since then it has delivered higher network reliability, a higher quality network, and the ability to migrate to VoIP and NG911. "After five years, I can't imagine how we'd manage the WAN without Talari," he says. "Making the investment in Talari back then was smart."

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About Talari Networks

Talari Networks, the trusted SD-WAN technology and market leader, engineers the internet and branch for maximum business impact, delivering superior application reliability and resiliency, while unlocking the benefits of branch consolidation. Incorporating years of innovation into five generations of product, Talari is deployed across thousands of sites in 40 countries.

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