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CISCO

Connecting First Responders
Nashville Takes the Stage with Digital Transformation of Fire and Rescue

Executive Summary

Type of Customer/Facility
- Fire and Rescue Department
- Nashville, Tennessee USA
- 1,205 Employees
- Nearly 100 Vehicles
- 39 Stations

Business Challenges
- Providing connectivity over 533 square miles
- Providing the best possible support for personnel during 100,000+ emergency calls annually
- Improving the quality of healthcare for citizens
- Increasing staff job satisfaction

Solution
- Mobile connectivity for ambulance fleet using Cisco 829 Vehicle Router
- Davra RuBAN fleet management solution

Key Business Results
- Provided mobile connectivity for real-time information sharing between ambulances in transit and receiving medical facility
- Reduced stress on personnel in transit by providing real-time support and information sharing
- Improved prep times and situational response for receiving medical facility
- Created internal knowledge base and training programs for consistent customer experience
- Improved quality of healthcare for citizens
- Increased morale by simplifying quantity and complexity of tools available to emergency personnel

The Challenges of Emergency Response

With the rapid expansion of the Internet of Things (IoT), digital transformation is being pushed to the forefront for Public Sector agencies. And for the Nashville Fire Department (NFD), the timing couldn't be better. By embracing innovative collaborative technologies, the NFD is shaving precious seconds off response times, increasing efficiencies and improving the quality of care for tens of thousands.

As one of the top 20 fire departments in the country (based on population and number of emergencies), Nashville, Tennessee's fire department was faced with a large number of runs every day – over 270 on average – and must have assets ready to roll anywhere, anytime within the 526 square miles they cover. But with just 38 stations and around 100 vehicles, staying connected over such vast distances was proving difficult – and costly. For the NFD, the challenges of increasing numbers of responses and increasing distances were very real. Combined with their desire to improve quality of healthcare for their citizens while providing the support their emergency responders needed in such an active workplace, it was proving an urgent challenge as well.

The Solution: Digital Transformation

To help overcome these challenges the NFD turned to Cisco, the global leader in IT and cybersecurity, and our partner Presidio. The city's digital transformation initially focused on ambulance service, and how to deal with the large amount of data gathered while patients were in transit. They had systems that collected data but were still struggling with how to use it to their advantage; including how to shave minutes off of response and transit times, and better connect ambulances and other facilities.

Bryan Jones
Logistics Chief,
Nashville Fire Department

The first piece of the puzzle was installation in several ambulances of the Cisco 829 Industrial Integrated Services Router, a highly secure, reliable and easy to manage product. It runs on existing 3G/4G LTE WAN cellular networks and provides wireless LAN connectivity for mobile environments, allowing for faster transfer of data. "Everything that we have is going to have a router in it. Every new piece of equipment we buy is going to have a router installed" states NFD's Logistics Chief, Bryan Jones. "It gives us the opportunity to do many things. Obviously, fleet data, which is huge but it also allows us to be forward thinking in where we are going to go."

The router is very compact and designed for harsh environments; it can be used to oversee a variety of tasks, including fleet management. The Cisco routers were deployed in tandem with the Davra RuBAN Fleet Management solution, via Cisco ecosystem partner Presidio. This approach allows EMS personnel to share and transfer critical patient data, in real-time, to emergency department intake staff while in transit. By sending vitals and other data directly to medical staff in real-time, lifesaving decisions can be made faster and more accurate diagnosis developed. The receiving facility can also better prepare for and time arrivals to maximize their resources.

The solution is also working beyond healthcare, being used to record and transfer valuable vehicle data to aid maintenance and reduce breakdowns that might unexpectedly interrupt service for citizens. "Everyone else's product is a singular activity" added Jones, "but the Cisco solution pulls many critical elements into one approach." One of the key reasons the NFD selected Cisco was our global leadership in working beyond single solutions to provide more holistic, end-to-end approaches. Our products are recognized for their ability to integrate and interoperate with other existing technologies and platforms.

The Benefits of Digital Transformation

By partnering with Cisco, the NFD has streamlined operations, improved response times and increased efficiencies. And they have also increased the morale of personnel, who are finding it very user friendly. "This technology saves lives and it has been truly beneficial" according to Erik Gallup, Paramedic 3 for the NFD. "Just having this option is comforting not only for the patient but us as well." For personnel, it takes everything they want to do and puts it all in one box. This makes their job easier and less stressful. And for patients, they are seeing significant increases in the quality of patient care as well as quality of life after an event due to less stress and quicker diagnosis.

Connectivity is the core of the solution, enabling agencies to work closer together than previously possible – speeding communications and information sharing - and creating more positive outcomes for citizens. But it's also giving NFD staff an education of sorts. Through the solution "we learn how to communicate better with one another" says Jones. The solution has also helped the NFD increase utilization of their vehicles. Before the deployment, they had experienced ongoing issues with ambulance drivers ignoring the diesel regeneration messages on their dashboard. This often resulted in unexpected breakdowns and unexpected towing/repair costs.

According to Keith Durbin, CIO/Director of IT at Metropolitan Government, "The benefit from our standpoint is it is providing a base layer of technology that we can then understand and become proficient at, and that can then extend beyond. So it's comfortable, it's supportable . . . and we know that it will grow over time." This will enable the NFD to grow services over time so that more departments and agencies can take advantage of innovative connectivity solutions. "We are very active in working with our business partners, Cisco and Presidio, at looking at what is new" says Durbin, ". . . and that helps us reach our goals in a flexible manner".

The results of digital transformation for the Nashville Fire Department have been very tangible – reduced costs, increased efficiencies and better patient outcomes. The department Chief, Ricky White, has expressed how pleased they are with the results and is now actively seeking ways to leverage the solution for more insights into fleet management. And while ambulances were the first to experience the upgrade, the NFD is now considering deploying on hook & ladders and pump units. They are also considering the next step: expanding into real-time video. Meanwhile, the NFD's success has the city of Nashville looking into scaling the solution to their police fleet as well.

Next Steps

To learn more about our Connected Transportation solution for emergency responders, law enforcement and other public agencies, please visit:
http://www.cisco.com/c/en/us/solutions/industries/transportation.html

"This technology saves lives and it has been truly beneficial"

- Erik Gallup, Paramedic/NFD

The 829 Mobile Ruggedized Router

Easy to Use
- Supports Cisco IOS Software
- Uses existing 3G/4G networks
- Easily and rapidly deployable
- Highly available, very secure and reliable

Built to Last
- Built to handle tough environments including shock, vibration, dust, humidity and water spray
- Tolerates temperature extremes
- Compact and portable
- Designed for mobile vehicles

The Flexibility you Need
- Enterprise class features
- Industry leading cybersecurity
- Can also provide real-time data, voice and video communications to stationary and mobile network nodes
- Can serve as mobile hub
- Dynamic multipoint VPN capability
- Supports Cisco IOx software for open, extensible hosting of additional OS and apps directly at the network edge

Also supports dual-radio WLAN so that your access points can serve as both access and client to a wireless mesh network.