

Capita

Challenges

Faced with a significant increase in the number of emergency calls received and the need to make big improvements in call response times, the English Ambulance Trusts decided to unify their services into one integrated system. Under the expert direction of Capita Secure Information Solutions, the Department of Health Emergency Services Management Operations was streamlined across the country, consolidating the number of Trusts from 35 to 11 centers. Their aim was to provide callers with a single point of contact and consistent, high-quality emergency service delivery.

The project was not just about saving costs, but about delivering better health outcomes by actively reducing emergency response times.

To handle a greater volume of calls in a short period of time, the Trusts relied on Capita to provide both the infrastructure and management expertise. The goal was to upgrade the existing IT infrastructure to a state-of-the-art IT environment and ensure all of the Trusts' objectives were met.

While the infrastructure changes resulted in substantial improvements, they also created a few new challenges managing VoIP delivery. Specifically, the Trusts lacked the visibility needed to validate communication quality, time of delivery, and whether any service interruptions occurred. These performance roadblocks posed difficulties for the Capita team.

“Thanks to VIAVI Solutions, our IT department plays a critical role in saving more lives.”

Martin Perkins | Capita
Network Architect



They needed a performance monitoring solution that guaranteed quick responses by emergency services and offered the following capabilities:

- End-to-end monitoring with performance optimization
- Service level agreement (SLA) verification
- Tracking the Quality of Service (QoS) settings

Single Platform Solution

As the project's Network Architect, Martin Perkins began searching for an application performance management platform that could address these challenges within the newly transformed infrastructure. He worked closely with IT specialty consultants at Open Reality during the research and solution selection process.

"When we researched how to address the new infrastructure challenges, we wanted a solution that would last at least 10 years," said Perkins. "We looked for a well-established company with a proven success record monitoring and troubleshooting within a complex IT infrastructure."

With the Observer Performance Management Platform's history as an industry leader, its product-line reputation, and demonstrated ability to meet complex monitoring requirements, Capita chose the solution as the central reporting platform for monitoring and analyzing the network's day-to-day events. They selected Observer GigaStor for its ability to capture communications traffic at high speeds, retain long-term data, and allow IT staff to quickly rewind network events and pinpoint problems for rapid issue resolution.

End-To-End Monitoring

Since it was critical to have a common deployment model for each Ambulance Trust, Capita integrated the Observer Platform into the national network to manage radio communication services for emergency response vehicles. At each Trust location, the team deployed Observer probe appliances for real-time visibility and communication quality assessment.

With the Observer Platform, Capita can now monitor traffic end-to-end as it traverses multiple segments across a complex data path. The analysis capabilities serve multiple functions for the network team: high-level views to ascertain overall system health; in-depth drilldown for navigating to details when problems arise; and intelligently configured alarms to pre-emptively notify the staff of potential problems.

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Nationally, Capita divided the Trusts into Northern and Southern regions, implementing GigaStor appliances for in-depth retrospective analysis across each region. This was augmented with GigaStor Portable appliances when problems required on-the-scene troubleshooting. A central component of the Observer Platform, Observer Apex consolidated reporting for both geographical areas and delivered comprehensive network visibility with aggregated views in a single display.

"The Observer Performance Management Platform is a solution that we basically took off the shelf, immediately put to work, and that we currently use to manage every aspect of communication health across England," said Capita. "Due to its flexible architecture, the Observer Platform adapted to our needs – deployment was intuitive and it was easily integrated within our national infrastructure."

SLA Verification

When managing an extensive emergency services network, communication clarity and uninterrupted high performance is a necessity. When the Capita team deployed Observer Analyzer and GigaStor into the overall network management architecture, they were able to ensure the performance of critical emergency communications whether by phone, radio, or intercom.

For SLA verification, VoIP service quality measurements were required to maintain a MOS score of 3.6 or above to ensure high quality end-user experience.

"Implementing the Observer Platform allowed us to track every individual call," said Perkins. "With conversation-by-conversation packet level views, the network team can now accurately assess issues, identify specific sessions causing problems, prevent issue occurrence, and verify the required MOS levels."

Tracking QoS Settings

At a recent VoIP system installation, the Capita staff observed a curious issue with the voice component while using a simulator to test the equipment.

"In reviewing the call traffic, we noticed only the QoS tags from the Cisco® routers were visible, but markings on the packets in the RTP stream were missing," said Perkins.

Using the powerful monitoring tools of the Observer Platform, the network team was able to view the application in depth to determine how QoS was implemented. The culprit turned out to be a misconfiguration issue caused by an error in the deployment protocol followed by the implementation team.

"The Observer Platform gave us critical information that we could share with relevant deployment teams to immediately resolve the issue and revise the deployment protocols," said Capita.

Conclusion

Since deploying the Observer Platform, the Capita Ambulance Trust network team has global visibility into VoIP traffic with monitoring for each conversation that takes place across the infrastructure. End-user feedback in response to the new, high-efficiency communications network has been overwhelmingly positive and the goals established by the Trusts have been met.

"Thanks to Network Instruments, our IT department is playing a critical role in saving more lives," said Capita. "Achieving this high-level of network performance not only benefits our company and IT team, but most significantly – those we serve in the United Kingdom."



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