



HOW PUBLIC SAFETY COMMUNICATIONS IS MOVING TO THE CLOUD IN SHELBY COUNTY, TN

Ask someone from the National Institute of Standards and Technology to define the cloud and they will tell you it is a “model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned and released with minimal management effort or service provider interaction.”

Ask Raymond Chiozza, Director of the Shelby County Emergency Communications District (ECD), or Michael Spencer, Administrator of Memphis Police Department Communications Bureau, to define the cloud and they will tell you, simply, that it is the future of public safety communications. And Raymond and Michael will also tell you that, while the path to the cloud is not short, it is not impossible either.

START WITH A VISION

For the Shelby County ECD and Memphis PD Communications Bureau, the path to the cloud began with a vision for the future of public safety communications that included greater mobility and flexibility, both in how they communicate with the public as well as first responders.

It was clear that the Shelby County community had definitely become more mobile, as evidenced by the Memphis PD call center receiving more than 90% of its 9-1-1 calls from wireless devices. What was also clear for Raymond and Michael was the need for greater mobility in the handling of emergency communications. Their experiences with severe storms, the COVID-19 pandemic and other events demonstrated that a 9-1-1 operation needs to be mobile, with the ability to quickly relocate to other available municipal facilities.



SHELBY COUNTY EMERGENCY COMMUNICATIONS DISTRICT:

- Serving largest county in Tennessee
- Covering 785 square miles and a population of ~935,000
- Establishing local emergency telephone service
- Providing network call-handling equipment
- Updating GIS data for each Public Safety Answering Point within the County



Michael and Raymond also saw the growing need for more flexibility in how information is accessed. Increasingly, first responders wanted real-time incident access to call data to compare that information with the statements now being made at the scene. And, the public's increasing demand for transparency and openness by public safety meant that faster access to call recordings and other incident information was needed to provide the responsiveness they wanted.

Raymond and Michael understood that isolated systems on an agency's premises are not agile enough to keep pace with the technology improvements and updates necessary to implement their vision. Their vision would require the advanced technology, increased flexibility and enhanced data management that comes from a move to cloud-based solutions.

CHECK THAT THE NETWORK IS READY FOR THE CLOUD

Raymond and Michael worked closely with Carlton Ray, Director for Shelby County 9-1-1 District IT, to ensure that the local network was ready to support a move to cloud-based services.

After examining the prior network architecture, Carlton and his team first implemented a software-defined wide area network (SD-WAN) between PSAPS. The IT team also moved firewalls closer to where traffic originated to minimize the need for backhaul and to eliminate choke points and single points of failure.

It was also critical to utilize multiple vendors to create redundant paths to the Internet. Using multiple vendors meant that a failure by any one did not disrupt access to the cloud.

Carlton and his team were also careful to remember that the requirements are not the same for all applications, i.e. one size does not fit all. They worked with Raymond and Michael to understand the level of criticality of each application and to adjust requirements, such as redundancy, accordingly to save costs whenever possible.

DETERMINE THE APPLICATIONS TO MOVE FIRST

Understanding that level of criticality was the key to the next step on the path to the cloud: figuring out which applications to move first. As Michael Spencer put it, "we tested the waters by identifying solutions that had impact but were not mission critical, and those are the applications we used to determine the viability of the cloud."

Raymond Chiozza took the first step, moving the PSAP administration phones to a cloud-based voice over IP solution. Moving the PSAP admin phones to the cloud was a success, with capabilities well beyond those available with their on-premises system and access to office phones from home or wherever needed.

This success led Raymond and Michael to deploy other cloud-based applications, including:

- CommandCentral Smart Transcription – real time transcription of the voice audio from 9-1-1, non-emergency or administrative calls
- CommandCentral Citizen Input – allows citizens to send video, photographs and recordings to PSAPs
- RapidSOS – securely shares real-time data from an individual's smart device with first responders.



MEMPHIS POLICE DEPARTMENT COMMUNICATIONS BUREAU:

- Serving the 28th largest city in the United States
- Located on the banks of the Mississippi river
- Largest PSAP in Shelby County
- Processing over 3,500 emergency and non-emergency calls daily
- To protect and serve the ~633,000 residents of Memphis



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Michael Spencer, Administrator
Memphis Police Department
Communications Bureau

ASSESS THE PERFORMANCE

Raymond, Michael and Carlton looked at three factors when assessing the success or failure of cloud implementations:

- Uptime, i.e. are there significant periods when the application is unavailable
- Performance, such as complaints that the app is slow to load or act
- Frequency and speed at which the application software was upgraded.

The IT staff reports consistently showed that there was not any difference in the availability of premises-based or cloud-based applications. Performance was equally impressive, with Michael and Raymond indicating the PSAP staffs are unaware of which applications are running in the cloud because their responsiveness was the same as or better than that of on-premises applications.

With respect to software upgrades, cloud-based applications are continually improved and enhanced without impacting the workflow in the PSAP, 9-1-1 District nor requiring support from the Shelby County IT staff. In comparison, Michael reports that the legacy CAD (Computer Aided Dispatch) system has not been upgraded in 2 ½ years due to the time and effort required and the impact on operations.

REPORT THE BENEFITS

For the Shelby County ECD and Memphis Police Communications Bureau, the ability to use the initial set of cloud-based applications from anywhere has definitely increased flexibility and improved mobility for the command staff and others. Or, as Carlton Ray very succinctly put it, “cloud-based applications and, as a result, their users are just more agile.”

Raymond Chiozza stated that, while he was initially reluctant to move the admin phones to the cloud, he now consider it one of the best things they have done.

Michael Spencer reported that the Smart Transcription application really opened his eyes to the fact that all recordings could be stored in the cloud and provide command staff and others with access to information when they need it from wherever they are. As both Raymond and Michael noted, Smart Transcription made it easier on the staff to respond quickly to requests for incident communication transcriptions because the cloud put the data at their fingertips.

“Cloud-based applications and, as a result, their users are just more agile,”

Carlton Ray, Director Shelby County 9-1-1 District IT.

HOW YOUR AGENCY CAN GET STARTED

When asked for words of wisdom for other agencies considering cloud-based applications, Shelby County ECD Director Raymond Chiozza, responded, "test the waters with solutions that have impact but are not mission critical, reach out to agencies that have started their cloud transition to benefit from their experience and, remember, it doesn't have to happen overnight."



NEXT STEPS

Based on their initial success with cloud-based applications, Shelby County ECD and Memphis PD Communications Bureau are considering which applications to move next.

Top of the list for Raymond and Michael are NG9-1-1 call taking and CAD because they make it possible to stand up parts of a communications center wherever space is available, this provides the flexibility needed to respond to future events that require telecommunicators to work from home or alternative facilities.

Michael and Raymond also believe that moving NG9-1-1 call taking and CAD to the cloud is necessary to keep up with the technology enhancements required to support multimedia communication with citizens and first responders.

Because, whether it is the picture of a missing child, video of an incident when it took place, or an image of a suspect vehicle license plate, multimedia communication is key to receiving and sharing this information in real time and, ultimately, speeding up processing time on the scene.

To learn more about how to accelerate public safety technology with the cloud, visit motorolasolutions.com/cloud



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