

# Commonwealth of Pennsylvania helps travelers get to destinations faster by securely delivering traffic video streams online

## Company Summary

The Commonwealth of Pennsylvania is the fifth-most populous state in the United States, with over 13 million residents as of the 2020 United States census. The 511 Pennsylvania (511PA) web site is part of a statewide travel information service that provides reliable traffic, weather, and transit information to travelers to reduce congestion and improve safety and mobility in Pennsylvania.



## Commonwealth of Pennsylvania

### INDUSTRY

→ Government

### SEGMENT

→ Public

### REGION

→ NAMER

## THE CHALLENGE High latency, slow streams, and lack of access hinder traffic video streams

The Commonwealth of Pennsylvania had over 90 traffic cameras on the turnpike alone, but the feeds weren't available to the public. The Commonwealth wanted to provide real-time traffic streams and information to commuters, travelers, and commercial carriers on its public website so citizens could make informed decisions regarding their next drive to work, trip, or delivery. By providing this information to travelers, 511 Pennsylvania aimed to keep traffic moving.

The Commonwealth already used streaming information from the Vbrick Distributed Media Engine (DME)'s real-time messaging protocol (RTMP) streams sourced from traffic cameras. That information was sent to 511PA and Pennsylvania Turnpike web properties via Flowplayer online video player.

However, it needed a cost-effective, reliable distribution system to make the streams available to the public. The Commonwealth also required predictable costs for budget planning and security to protect against scraping and rebroadcasting of the feeds outside of the United States.

## THE SOLUTION Upgrading speed, reliability, and reach of traffic video streams

To capture the streaming video from up to 10 existing VBrick solution cameras and provide a public link that could be safely shared on 511PA website, CloudHesive built a solution based on AWS Elemental, which provides purpose-built media services, software, and appliances, using AWS MediaLive to encode broadcast-grade live videos and push them to the 511PA site using RTMP. CloudHesive deployed AWS Elemental MediaStore to optimize media storage and work alongside AWS MediaLive to deliver stored assets for 511PA's streaming video needs. These improvements improve consistency and decrease latency for video streaming.

CloudHesive implemented Amazon CloudFront, a content delivery network (CDN) service, to deliver an output link to end users with improved security over various edge locations where links might otherwise have been difficult to stream. This increased accessibility to updated traffic information and streams.

CloudHesive deployed AWS Web Application Firewall (WAF) to protect against common web exploits and to create an output link to a hosted file rather than to one hosted on another website. They also create rules in the AWS WAF to allow only authorized URL links and IP addresses. These improvements increased security and reduced vulnerability to cyberattacks.

To ensure continuous security and protection of the feeds, CloudHesive provides ongoing security as a managed service.

## THE BENEFITS Achieving a more reliable, secure, and faster streaming solution for all Pennsylvanians

With a more reliable, secure, and faster streaming solution, the Commonwealth of PA now streams its video camera data directly to the 511PA website to enable more website visitors to make informed decisions about their commute.

Thanks to the MediaLive service, Pennsylvanians and visitors can now easily stream traffic data to the device of their choice, including to mobile devices, tablets, and most browsers.

The internal architecture also provides extra protection and security for RTMP push endpoints and output streams. Also, as the end users base grows, this solution is designed to automatically scale and support higher throughput, providing cost-efficient scalability. With CloudHesive's managed security services, the streams are protected against scraping or rebroadcasting.

## Services that Drive Success

### MANAGED SECURITY SERVICES

- End-to-end management of security tools and processes

### MANAGED SERVICES

- Complete, end-to-end monitoring and management of the environment
- Governance of the production environment

### DEVOPS

- Deployment of streaming video service using AWS Elemental family of services
- Deployment of cybersecurity using AWS WAF
- Deployment of content delivery networking using Amazon CloudFront
- Built deployment scripts for environment deployment

## Customer benefit summary

- Provided scalable mechanism for presenting streaming traffic camera feeds to the public and to emergency responders
- Increased accessibility to device types, including mobile and tablets
- Introduced budget-friendly scalability to accommodate growth
- Security managed services maintain the ongoing security of the system

## AWS Technologies used

- AWS Elemental
- AWS MediaLive
- AWS Elemental MediaStore
- Amazon CloudFront
- AWS WAF

## Third-party technologies used

- VBRICK Distributed Media Engine (DME) steaming video integration
- Flowplayer



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