



## DELIVERING ANALYTICS TO PROTECT COMMUNITIES

### *Houston Police Department leverages Azure to improve policing quality*

Police departments across the country use crime statistics to make operational decisions, plan, and protect the community. They are also required to make this information available for public requests, state, federal, and local government partners. These responses are even more critical in times of crisis and emergency response. Houston is the fourth-largest city in the United States. Due to its size, the police department has a lower-than-average officer-to-population ratio, making service efficiency critical to ensuring quality policing.

### THE CHALLENGE

Despite an abundance of internal data, the Houston Police Department Office of Planning (HPDOP) lacked the resources to build an analytical platform supporting detailed reporting and predictive insights. In addition, numerous data sources, multiple statistical definitions, and lack of a unified data platform creates more work for the analysts.

Data was not available in real time, delaying reports of statistics and key metrics. The planning staff spent excessive man-hours manually tracking requests, producing reports and responding to inquiries regarding underlying metrics. Slow response times delayed decision making and hindered the department's ability to meet SLA targets. Users were also frustrated by receiving multiple answers to the same questions from data collected and summarized from disparate systems.

### THE DATA ARCHITECTURE:

Catapult first needed to create a scalable, robust cloud-based data platform that could provide integrated, trusted, and timely data to resolve HPD's data and reporting challenges. Houston had selected Azure as their cloud platform as it was the only platform that met their strict CJIS requirements and provided a vast variety of native tools to enable scalable big data.

The deployed solution utilizes Azure Data Platform components such as Data Factory, Data Lake, SQL and Analysis Services to ingest, store and transform case management data. This solution enables rapid curation of crime analytics data and movement into semantic models, allowing police department analysts to deliver key crime statistics information quickly and consistently. This solution also utilizes Data Lake Gen 2 storage, facilitated by Data Factory Self Hosted Integration runtime ingress. Azure Data Factory data engineering pipelines have been developed to ingest unstructured data.

In addition to the Government Cloud components, this solution utilizes a Commercial Azure DevOps Agent deployed to the government subscription. Azure DevOps allows rapid, scalable CI/CD processes that enable deployment procedures, limiting risk and increasing velocity from development to production. This was done in a CJIS compliant manner and is the first known deployment in the Justice and Public Safety space in the US.

Catapult team members are CJIS approved for work with criminal justice data, granting them access to private or sensitive data gathered by law enforcement agencies. This includes data from police records management systems such as fingerprints, criminal background information, municipal court information and copies of private documents. Catapult migrated data from 5 existing data sources into Azure, including Computer Aided Dispatch (CAD), Records Management System (RMS), CSmart (Municipal Court Department Data), Demographic Tracking Module (Racial Profiling and Use of Force) and Police Personnel System (PPS).

## THE REPORTING SOLUTION:

Catapult expanded Houston Police Department's reporting capabilities through Agile Insights and lean analytical processes to improve public transparency for crime reports, staffing allocations, and internal crime trend reports. For example, Catapult helped build outputs specific to HPD departmental needs, such as optimizing the Monthly Operational Summary (MOS) report using Power BI. The resulting dashboard is available in minutes as opposed to the 30 days it had previously taken to produce. Additionally, HPDOP analysts are able to build ad-hoc reports and insights quickly and consistently, dropping response times for new data requests from weeks to hours.

HPD's new reporting capabilities automates reporting, uncovers pertinent insights, flags discrepancies and improves both the citizens and agencies' confidence in their analytics. They can use these insights to allocate resources proficiently, understand crime levels to justify grant applications and funding requests, and utilize existing officer headcount in areas needed most through predictive analytics. Ultimately, they will be able to solve crimes more quickly and accurately.

## TRANSFORMATIVE IMPACT:

- Time to create recurrent monthly report dropped from 30 days to minutes
- Ad hoc reports available in hours rather than days
- Reduction of cycle times helping HPDOP consistently hit SLA targets
- Single source of truth for real-time data that is reliable for ensuring departmental and public trust
- New data framework enhances data governance processes
- Fostered an informative sharing culture facilitating organizational communication and collaboration
- Scalable, sustainable solution
- Access to real-time (or near real-time) data

**“** *With the help of our partners at Catapult, the way we store, access, and use data is changing. They brought fresh project management techniques and technical expertise to the table, helping us overcome some of the common challenges organizations face when handling large amounts of sensitive data. The Catapult team remained flexible and responsive throughout the project timeline and, after a few short months, HPD now has a customized business analytic dashboard as well as a path forward for expanding the tools to meet future needs. I REALLY appreciate every member of the Catapult team and look forward to working with you again in the future!* **”**

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How can we help you?

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