

# THE CLOUD FOR LAW ENFORCEMENT



## WHY THE CLOUD AND WHY NOW?

Police departments face many challenges, from an explosion of data, to mobility and IoT, to the recruitment, retention and training of officers. Thus, there is now increased pressure to evolve your data management strategy. Cloud solutions can and should play a critical role in this evolution.

### THE DATA EXPLOSION



Annual global IP traffic will reach **3.3 zettabytes per year** by 2021, or **278 exabytes per month**.

This tsunami of data is making it harder for you to be effective. For example, a **typical search warrant nets approximately 3 terabytes of digital evidence data** and without the proper tools it can take four weeks for investigators to go through just 1 terabyte.<sup>1</sup>

### RECRUITMENT AND RETENTION



By 2020, **millennials** will make up **50% of the workforce**.<sup>2</sup>

This digitally-native generation is more tech-literate and skilled at multitasking. Staying current with technology may help **mitigate potential staffing challenges** in the future and **improve retention of qualified personnel**.

## BENEFITS FROM GOVERNMENT CLOUD ADOPTION<sup>3</sup>

Cloud adopters—from the Federal to State/Local level—see improvements in productivity, customer service, and cost savings by moving applications to cloud.



FEDERAL



Improved Productivity

77%



Improved Customer Service

74%



Cut Application Costs

74%



STATE/LOCAL

69%

69%

57%

## ADOPTION BY SEGMENT<sup>3</sup>



FEDERAL



Integrating Cloud into IT Strategy

55%



Increased Cloud Spend in 2017

85%



STATE/LOCAL

48%

76%

## WHAT IS THE CLOUD?

The cloud leverages a different approach to buying, managing, and deploying IT infrastructure and software solutions.

## SOLUTION DEPLOYMENT MODELS

Generally speaking, software solutions can be deployed in these three different ways.



ON-PREMISE

Customer Fully-Managed Data Center



CLOUD

Cloud Service Provider Hosted and Fully-Managed



HYBRID

Combination Of Cloud and On-Premise

## CLOUD DEPLOYMENT MODELS

Cloud solutions can be deployed in these different cloud service provider environments.



PRIVATE

Operated solely for an organization by a cloud service provider, typically as isolated infrastructure within their data center



COMMUNITY

Shared by several organizations and supports a specific community that has shared concerns



PUBLIC

Available to the general public or a large industry group

## CLOUD CONSUMPTION MODELS

Cloud resources can be consumed in different ways. You may be a consumer of software-as-a-service from Netflix, while they are consumers of infrastructure-as-a-service from Amazon Web Services.

■ = You Manage   ■ = Others Manage

ON-PREMISES	INFRASTRUCTURE AS A SERVICE	PLATFORM AS A SERVICE	SOFTWARE AS A SERVICE
<ul style="list-style-type: none"> <li>Applications</li> <li>Data</li> <li>Runtime</li> <li>Middleware</li> <li>O/S</li> <li>Virtualization</li> <li>Servers</li> <li>Storage</li> <li>Networking</li> </ul>	<ul style="list-style-type: none"> <li>Applications</li> <li>Data</li> <li>Runtime</li> <li>Middleware</li> <li>O/S</li> <li>Virtualization</li> <li>Servers</li> <li>Storage</li> <li>Networking</li> </ul>	<ul style="list-style-type: none"> <li>Applications</li> <li>Data</li> <li>Runtime</li> <li>Middleware</li> <li>O/S</li> <li>Virtualization</li> <li>Servers</li> <li>Storage</li> <li>Networking</li> </ul>	<ul style="list-style-type: none"> <li>Applications</li> <li>Data</li> <li>Runtime</li> <li>Middleware</li> <li>O/S</li> <li>Virtualization</li> <li>Servers</li> <li>Storage</li> <li>Networking</li> </ul>

## CLOUD-BASED SAAS SOLUTION PROVIDER CONSIDERATIONS



### SECURITY AND PRIVACY

Security in the cloud is all about how data is handled, including its confidentiality both in transit and at rest, its integrity, and its accessibility. You must be comfortable with who has access to the data, when they have access to it, and from where they have that access.



### AVAILABILITY

Availability describes performance guarantees as well as system or service's ability to continue operation in the presence of hardware and software failures. Consider how you can manage availability both in the presence of failures and in the presence of increased workloads.



### SCALABILITY

Horizontal scalability of a service allows for additional copies of its components to be added or removed to account for different workloads. Vertical scaling is the technique of adding processing power, bandwidth, and storage to an existing service's underlying hardware without adding additional copies of service components.



### MONITORING

In deployments that may consist of hundreds or thousands of resources including servers, databases, and cloud-based applications, effective monitoring allows you to have insight into the status, health, and general trends that exist across these resources.

## ADVANTAGES BY MODEL

	ON-PREMISE	CLOUD	HYBRID
Cost	<ul style="list-style-type: none"> <li>One-time capital expense (CAPEX) purchase model</li> <li>More hardware utilization flexibility</li> </ul>	<ul style="list-style-type: none"> <li>Recurring operating expense (OPEX) purchase model</li> <li>Decreasing storage costs</li> <li>Support / maintenance is built into subscription cost</li> </ul>	<ul style="list-style-type: none"> <li>Hybrid solutions, depending on their configuration, often include many of the benefits from both on-premise and cloud solutions, plus the following:</li> <li>Allows for more incremental capability additions</li> </ul>
Security	<ul style="list-style-type: none"> <li>Highly customizable security</li> <li>Can air-gap systems and data from the Internet</li> </ul>	<ul style="list-style-type: none"> <li>Security is handled for you</li> <li>Higher degrees of cyber resilience</li> <li>More out-of-the-box certifications included</li> <li>Large-scale threat monitoring done for you</li> </ul>	<ul style="list-style-type: none"> <li>More agency-specific security controls can be accommodated for</li> </ul>
Deployment and Scalability		<ul style="list-style-type: none"> <li>Deployment only takes days or weeks, not months or years</li> <li>Easy to expand your deployment for new users or capabilities</li> <li>Updates and fixes are done more frequently</li> <li>Less in-house resources are required to maintain solutions</li> </ul>	<ul style="list-style-type: none"> <li>High-workload scenarios can be accounted for by activating cloud resources</li> <li>Catastrophic data loss can be avoided by replicating data in the cloud</li> </ul>
User Accessibility	<ul style="list-style-type: none"> <li>Doesn't rely on Internet access</li> </ul>	<ul style="list-style-type: none"> <li>Remote access and productivity is easier with near-ubiquitous Internet</li> </ul>	

## KEEPING COMMUNITIES SAFER

With intelligently selected cloud-based SaaS solutions, data transforms from a burden to the engine powering data-led policing strategies that keep our communities and officers safer.



### REFERENCES

- "Digital age a turning point for policing, says commissioner Leppard," ComputerWeekly, May 14, 2015, <http://www.computerweekly.com/news/4500246279/Digital-age-a-turning-point-for-policing-says-commissioner-Leppard>
- "PwC: Millennials at Work" <https://www.pwc.com/gx/en/managing-tomorrows-people/future-of-work/assets/reshaping-the-workplace.pdf>
- "Destination Cloud: The Federal and Sled Cloud Journey" <https://www.meritalk.com/study/destinationcloud/>