

Tracwire Inc: Cloud Solutions & Public Safety

November 2019



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Introduction

At its core, a computer is a machine that accepts data inputs, processes that data using programs and applications, and outputs the processed data in a way that is relevant to the user. Many computers can store and retrieve information using hard drives. It requires a device that allows the user to input the data (keyboard and mouse) and place to display the output (monitor). There are four main “computing” steps in a computer: inputting, storage, processing and outputting; that’s it. Now I know this all a bit elementary, but, this is no different from cloud computing, with one exception. Cloud computing is on-demand computer system resources, predominantly made up of data storage and computing power, without direct management by the end-user. The programs, applications, and data are accessible through web interface browsers rather than applications installed on your computer.

For years, in the private sector, cloud computing has been a staple in business management and powers some of the biggest brands out there: AirBNB, T-Mobile, Netflix, Intuit, Adobe, Microsoft, the NFL, and thousands more utilize cloud computing in some form or fashion. Cloud computing has become an everyday part of our life, but only the last few years have police agencies began to understand the power and benefits of cloud computing utilization.

The Advantages and Power of Cloud Computing

The days of Computing as a Service (CaaS) are not that far in front of us. The idea that you will buy a monitor, keyboard, mouse, and nothing more, is being experimented with on the consumer level and is already a reality in the world of business. The idea is simple, you connect to the internet and log into your computer. Your data, operating system, storage, and servers are all managed and maintained by others.

One benefit of using cloud computing services is that agencies can avoid the upfront cost and complexity of owning and maintaining their own IT infrastructure. and instead simply pay for what they use, when they use it.

Law Enforcement and Cloud Computing

With cloud computing and cloud-based solutions on the rise for public safety agencies, police departments that have historically purchased on-premise hardware and software now have a more cost-effective model to explore: Software as a Service (SaaS).

If your agency is considering the purchase of new software one area of consideration should be what is the total cost associated with the purchase. There are direct costs (like hardware and network components, storage, administration and personnel cost, and maintenance) associated with it as well as indirect costs (i.e. license fees, maintenance, and software installation).

On-Premise vs. Cloud Solution

When you look at the difference between on-premise and cloud technology software, you quickly begin to see that there is a vast cost difference between the two options and the savings that cloud-based solutions have for public safety agencies are unmatched. So, let's take a look at the differences in expenses with On-premise vs. cloud.

HARDWARE

On-Premise: The purchase of hardware represents a significant, upfront costs. Furthermore, on-premise hardware requires several hours of routine maintenance, paying salaries to employees to maintain it, and other operational costs. When your agency owns the hardware, you are entirely responsible for storing, securing, powering, and maintaining your system, and ensuring compliance with data storage requirements. If your hardware experiences a critical failure, you run the risk of losing data; unless you've purchased more hardware to back that data up, which generates a larger capital expense.

Cloud Solution: There is no physical hardware to maintain. There are no storage or operational costs to factor. Server capacity, security & data compliance, and redundant back-up is all handled by the service provider.

SCALABILITY

On-Premise: Purchased hardware often requires occasional upgrades to meet increased storage capacity and speed demands.

Cloud Solution: Cloud solution scalability is handled by the service provider. If and when expanded capacity is need by your agency, it will already be included in your subscription cost or available for a nominal fee.

SECURITY

On-Premise: Your agency is responsible for all security measures; and must be performed exclusively by you. Ensuring you stay compliant with up to date security protocols and policies is a costly and time-consuming chore for IT staff.

Cloud Solution: Major cloud service providers can focus heavily on security. Nobody does it better than Amazon Web Services (AWS) GovCloud. Not only do they ensure up-to-date security protocols, updates, and upgrades to the system, but they offer security certifications and protections that would be too expensive and time-consuming for an individual agency to employ.

INSTALLATION OF HARDWARE

On-Premise: The installing on-premise hardware involves the purchase of hardware, any other equipment needed as well as the vendor's professional services. Hardware requires physical storage areas and power systems on-site.

Cloud Solution: Cloud-based services are easily accessible from any web-connected device. This completely removes the need to buy, build and install any physical hardware.

INSTALLATION OF SOFTWARE

On-Premise: The installing on-premise software involves the purchase of a license for each machine you want to install the software on. If you want more machines with the software, it will cost you more. Then, when it comes time for software updates, your IT department has the tedious task of updating each machine one at a time. This is costly and time-consuming.

Cloud Solution: A cloud-based software application is easily accessible from any web-connected device. No need to search for a specific computer with the application installed on it. When new software updates are released, it's pushed to

the agencies by the service provider and the next time a user logs in, the update will be there; with no effort on the part of your agency and virtually no downtime.

Data Access and Remote Access

A huge benefit of moving your recruit management to the cloud is quick and easy access to your data anywhere, at any time, and from any department-approved device. The freedom to check vital information or run critical reports remotely is a huge advantage.

This helps increase officer safety, improve accountability, and reduce time spent writing reports, allowing more time for vital training in the field.

Cost Savings Associated with Cloud Computing

Cloud-based solutions offer significant cost-savings for your agency. By removing the infrastructure build-out costs and the maintenance costs associated with traditional, on-site servers, cloud solutions have the potential to save your agency hundreds of thousands of dollars a year. And, when you consider the pace in which technology and software evolve, upgrades to on-site systems can be expensive and disruptive.

Using a cloud-based SaaS solution ensures your agency will have access to the latest software, without the expense of on-site servers and the cost of maintaining them.

Data Security of the AWS GovCloud

Law enforcement agencies deal with a lot of sensitive information. Often, one of the biggest concerns we hear is, security when transitioning to a cloud-based solution. It may surprise you to learn that cloud storage systems are generally more secure than local on-premise solutions.

Modern cloud-based services employ the latest security and encryption protocols, as well as physical security at their server locations. AWS GovCloud (US-East) and (US-West) Regions are operated by employees who are U.S. citizens on U.S. soil. AWS GovCloud (US) is only accessible to U.S. entities and root account holders who pass a screening process, where customers must confirm that they will only use a U.S.

Person (green card holder or citizen as defined by the U.S. Department of State) to manage and access root account keys to these regions.

AWS GovCloud (US) gives government customers and their partners the flexibility to architect secure cloud solutions that comply with: the FedRAMP High baseline, the DOJ's Criminal Justice Information Systems (CJIS) Security Policy, U.S. International Traffic in Arms Regulations (ITAR), Export Administration Regulations (EAR), Department of Defense (DoD) Cloud Computing Security Requirements Guide (SRG) for Impact Levels 2, 4 and 5, FIPS 140-2, IRS-1075, and other compliance regimes.

Increased Productivity

The move to a cloud-based recruit management solution, like Tracwire's Recruit Management Platform, gives your FTOs the ability to spend less time preparing training reports and more time in the field training your recruits. When officers are tied down to a desk, writing reports, important training moments can get delayed or put on hold due to other demands of their job. Likewise, IT staff will spend a huge percentage of their time managing and maintaining the on-premise systems. With cloud-based services, officers can report and search for data from the field. IT personnel can focus their efforts on other projects.

Benefits of Multi-Tenant Cloud Computing

A Multi-Tenant solution means that a single instance of the software and its supporting infrastructure serves multiple customers. Each customer shares the software application and also shares a single database. However, each tenant's data is isolated and remains invisible to other tenants.

While users in a multi-tenant environment share remote infrastructure, your agency still maintains your own individual data settings, without impacting other tenants in the system. Also, if you choose, your agency can share data with other tenants in the environment and other law enforcement organizations, all without compromising security or privacy.

One of the great features of a multi-tenant cloud environment is that (unlike with single-tenant solutions) your agency isn't required to handle the software upgrades and patches. All updates are handled by the service provider and are deployed

instantly to all agencies using the software. Because all clients are on one product, upgrades and patches devised for one client to improve the product experience for all clients.

Frequent Questions about Cloud-Based Solutions

IS THE CLOUD SECURE?

Yes. As a matter of fact, a cloud-based storage system is often more secure than local resources. However, like any system, cloud storage services can have vulnerabilities. To minimize your risk, ensure your service provider's password management protocols meet your specifications. You should consider two-factor authentication (2FA) for an additional level of security.

WHERE IS MY DATA LOCATED IN THE CLOUD?

In Data Centers called Regions. Servers have to live somewhere, even if it's not in your office. We deploy our services in the AWS GovCloud which has three regions; US West (Oregon) Region, US West (N. California) Region, and the US East (N. Virginia) Region. Each AWS Region has multiple, isolated locations known as Availability Zones. AWS operates state-of-the-art, highly-available data centers. Keep in mind your data's vulnerability to natural hazards in various regions. Find a company that uses robust disaster recovery plans that can ensure data availability and your business' continuity.

DO I STILL OWN MY DATA IF IT'S IN THE CLOUD?

Yes. The data is all yours and you decided who has access to it. Think of cloud storage as an alternative to local infrastructure. All of the data storage and management is done by your agency, but without the hard drives and servers on-premise. You still own your data and use it just the way you would if it was stored on servers at your agency.

WHAT IF I LOSE MY HARDWARE (LAPTOP, SERVER CRASH, ETC.)?

Your Data is Never Lost. Because data is stored in the cloud, it is not dependent on one device. You can literally grab a new device, get Internet access and never miss a beat. All your data is there, and you'll never have to worry about data transfer again.

WHO IS RESPONSIBLE FOR BACKUPS & UPDATES?

Your Service Provider. Since cloud-based solutions are typically subscription based, updates should be expected on a routine basis, and the provider is responsible for feature updates, enhancements, security and performance improvements.

HOW IS MY DATA BACKED UP?

Redundantly in Multiple Regions. Many cloud-based hosting services provide redundancy, data backup and data recovery services. Data backup is another function of the security measures as well, and ideally should be backed up in multiple physical locations.

What it All Means

While cloud computing is a recently new technological development, it definitely has the potential to revolutionize our future. And, while the consuming public is more familiar with its capabilities, it is only now that this new concept of Software as a Service is making its way into the government sector. The security, scalability, and cost-effectiveness is here and public safety entities should consider all the benefits that come with moving to the cloud.

About Tracwire

At Tracwire, we are a mission-driven company founded by police officers. We believe it's our calling to provide public safety agencies with the tools and technology they need to better serve their community. We believe your software should complement your training objectives, not slow them down. Our FTEP & PTO Software is built with the Field Training Officer in mind. But, we didn't stop there. We give you the most powerful tools to track your recruit's performance, develop meaningful training plans, and backup retention decisions.