4 Challenges Making Government Cloud Migrations Difficult
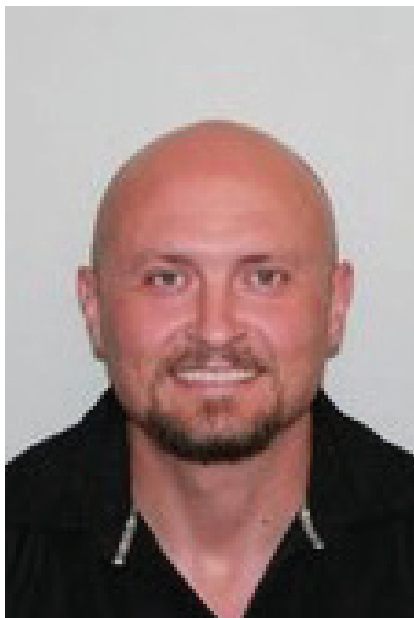
By Jason Lucas
USPS Cloud Sales Manager

Last month I had the opportunity to present at the AWS re:-Invent 2022 Conference. This annual event has been going on for a decade and has historically brought together some of the most interesting and transformative technology and solution providers to talk about cloud computing and how the cloud is revolutionizing how organizations operate.

The benefits that the cloud brings to enterprise architecture has led to a mass migration of government systems, applications, and data to the cloud. In fact, a recent FedRAMP study showed that approximately 50 percent of state, local, and federal government organizations have some or most of their systems in the cloud. This migration was only accelerated by the COVID-19 pandemic, which forced agencies to migrate quickly to meet remote work requirements.

However, despite the benefits of cloud computing, migrat-

ing workloads into the cloud is still considered an uphill battle across many government agencies and organizations.

The reasons why cloud migrations are a struggle were the focus of my presentation at re:Invent. And the attendees that managed to pull themselves away from the ultra-competitive ping-pong tournaments long enough heard me share four main roadblocks that make migration difficult. They include:

Disparate data formats and operating systems

Many government agencies are running a combination of disparate solutions across a number of disparate operating systems and utilizing a wide variety of data formats and categorization methodologies. This complexity can create challenges when trying to move workloads, data, and applications into the cloud.

In fact, the disparate data formats and approaches to categorization can effectively "lock up" agency data and keep them from truly embracing some of the more advanced capabilities and services that are offered through cloud platforms like AWS.

Migration frustration

Government agencies and military organizations have spent considerable time and money over the past few decades developing custom, purpose-built applications

Jason Lucas
USPS Cloud Sales Manager

and systems that are mission-critical for their operations.

These legacy systems and applications can often be difficult to re-engineer for operation in the cloud. In fact, some of them even operate on old mainframes and other antiquated hardware. Moving data and applications from legacy systems like these into modern cloud environments can be daunting and difficult, especially considering what many agencies are facing...

> **"When the cloud first gained traction across the IT landscape, security concerns kept many government agencies and military organizations from embracing it. Those concerns have mostly subsided, but new challenges have emerged that are hindering cloud migrations, operation, and optimization."**

Skills gaps, hiring shortages and the silver tsunami

Many of the IT professionals that you meet who work in the government have an incredible amount of experience. Some have been on the job for two decades or more.

They've seen it all and are incredibly knowledgeable, but they also can be somewhat averse to embracing new technologies.

Candidly, this isn't their fault. Many of them simply don't have a lot of experience working with the cloud, and most received the bulk of their training before the cloud was a widely-adopted part of network infrastructure and architectures.

Unfortunately, this creates a massive cloud skills gap that can make some agencies and military organizations hesitant to embrace the cloud. And that hesitance is only increasing as experienced IT professionals retire and contribute to the increasing number of vacancies across the federal workforce.

Cost concerns from managing mountains of data

If there is one thing that government agencies have in abundance, it's data. Many civilian federal agencies have decades of constituent records and information that they have to store and manage. In many cases, this data is legally required to be stored in case it's needed, but it's not going to be accessed or utilized frequently – or ever.

With physical storage, government agencies can utilize a tiered storage architecture that enables them to take low-priority, infrequently-accessed data and place it in low-cost physical storage – such as tape drives. Their SSD drives, flash storage, and other faster drives can then be used to store more mission-critical data. This enables agencies to store "cold" data at a low cost.

However, as more data silos get created and the desire for improved data decision-making and better business outcomes become imperative, traditional mechanisms for archiving data are becoming opportunity cost prohibitive.

Together, these four challenges have created a massive roadblock that has kept some government agencies and military organizations from embracing the cloud. But, new technologies are helping to break down these barriers and make the cloud even more accessible to the public sector.

Managed services break down barriers

Part of my presentation at AWS re:Invent included an introduction to Amazon FSx for NetApp ONTAP, a fully managed shared storage solution available in the AWS Cloud. Solutions like Amazon FSx with NetApp ONTAP, which was recently granted FedRAMP Moderate and High authorization, solve many of the challenges that the cloud has created for government agencies and military organizations.

This solution, which effectively combines the world's largest cloud service provider with the leader in data management, can:

- **Properly categorize and stream data into the cloud.**

By properly categorizing data, Amazon FSx for NetApp ONTAP can enable govern-

ment agencies and military organizations to unlock the advanced functionality of the cloud.

- **Drag and drop workloads into the cloud.**

Amazon FSx for NetApp ONTAP enables users to simply "drag and drop" workloads into the cloud. This also allows them to easily "drag and drop" workloads between different clouds, making it easier for government agencies to utilize cloud solutions from multiple providers.

- **Reduce learning curves.**

The ease of use of solutions like Amazon FSx for NetApp ONTAP makes it possible for anyone to use – even those that aren't experienced in the use of cloud solutions and services.

- **Enable tiered data storage.**

It's not just physical storage that can enable a tiered storage architecture. In the cloud, solutions like Amazon FSx for NetApp ONTAP can enable users to move data from high-priority tiers to infrequently-accessed archives that cost a fraction of a penny per gig. This ensures that even massive mountains of government data can be stored at a reasonable price.

When the cloud first gained traction across the IT landscape, security concerns kept many government agencies and military organizations from embracing it. Those concerns have mostly subsided, but new challenges have emerged that are hindering cloud migrations, operation , and optimization.

Thankfully, new technologies are becoming available that address these new challenges and enable government agencies to reap the full benefits of the evolved cloud.