Migrating to an Agile and Resilient Platform in a Multi-Cloud Infrastructure

Cloud migration can sometimes occur piece by piece in federal agencies. For instance, business units at the State Department moved to the cloud well in advance of the IT organization. But the department then ended up with an uncoordinated network of cloud migration and had to redirect its efforts more deliberately.

Michelle Sparrow-Walker was part of that strategic effort. As Director of the Cloud Program Management Office, she was appointed to consolidate cloud migration and ensure that it's manageable for the cyber community to monitor activity and procure the most effective services for the department.

The sort of disparate and siloed cloud sprawl and approach that previously happened at State is also a problem at the FBI. Darryl Dove, with the FBI's Enterprise Cloud Services Office, is helping lead an effort to focus cloud adoption across the organization, and he also faces the challenge of implementing a phased approach to cloud adoption.

Both experts recently spoke at IBM's ThinkGov 2019 conference, where they shared their strategies for moving forward with cloud adoption.

State Department Addresses Early Stages, Challenges With Migration

What's happening?

The State Department is in the early stages of cloud migration.

It's looking to implement DevSecOps, or the philosophy of considering security practices within the DevOps cycle of build, deploy, test and release. First, however, it must establish standard operating environments for the cloud so that the customer will have an environment that works for them.

A cultural challenge associated with migrating to the cloud at the department is the buy versus build decision. The department wants its business units to be comfortable with out-of-the-box capabilities, but some people are not ready to embrace that perspective. They want to build their system from the ground up.

An additional challenge the department has is to rethink what it should own versus buy as a service. Contrary to owning a whole system, an agency can own a process from end to end that often stretches across individual office boundaries.

"When you're trying to develop and leverage these capabilities, you have to think about all the stakeholders involved and really look at the business processes," Sparrow-Walker said. "Then you can configure a true end-to-end service capability."

What's the big deal?

The State Department and still has to maintain many of its legacy systems currently in place while in the middle of growing its cloud capabilities. They are seeing cost avoidance in some areas, but no significant savings yet.

"We're still trying to understand, from a cost model perspective, the cost of doing business," Sparrow explained. "Because we're still staying in legacy environments, we're leveraging the tools that come with the new environments that we've acquired to calculate potential cost based on say, an amount of storage, or memory, and different things that folks are going to want to implement."

What's next?

The department is going to continue using dashboards and tools that allow its customers to see how they're utilizing offered services — helping spur smarter timing decisions about when initiatives need to run or be shut down.

"Ultimately we want to get to a place where we have products that allow us to look across our entire ecosystem through a single pane of glass," Sparrow said.

FBI Plans Phased Approach to Cloud Adoption

What's happening?

As a law enforcement agency, the FBI is in the business of collecting and analyzing information. For analysts and agents in the field, there's a growing demand to make sense of that data in a timely and secure manner.

"But that can present challenges for the FBI because sometimes procurement processes, general deployment of new capabilities and implementation don't keep pace with the demand of current needs," said Stephen Morris, Associate Partner and Account Executive with IBM's Homeland Security, Justice and Foreign Affairs team.

"Just because technology is out there that's bigger, faster or cheaper, that doesn't mean the Bureau can just use it," said Morris, who recently retired from the FBI after 28 years of service. "The real driver is security."

The FBI partnered with IBM to build out a foundational layer for cloud adoption. "We sat down and talked to them and worked to build out an ecosystem of policies and procedures," Steven Sarnowski, IBM Federal Systems Integration Program Manager, explained.

Within the Enterprise Cloud Services Office, which top IT leaders in the FBI created two years ago, the team works to securely bring people into the cloud migration fold across the organization. They created a multi-step approach to unify cloud migration efforts across the agency and are currently on stage four of five.

Stage one involved building and technically developing the capabilities at an infrastructure level to ensure the agency could connect to the various clouds they needed, in both commercial aspects and on-premise.

Stage two required conducting pilots and odd tests in developing proof of concepts and exploring the capabilities of the cloud.

Stage three involved more building and finalizing the foundation of the cloud environment at an Infrastructure-as-a-Service level and extending on-premise services into the cloud.

Stage four began in January 2019 and centers on mass migration into the cloud. Approximately two-thirds of all of the applications within the agency have cloud accounts, but in stage four, the agency focused on a more concerted effort to move applications into the cloud based on strategic organizational reasons. Stage five focuses on optimizing migration.

What's the big deal?

"We think hybrid and multi-cloud is the future and the only right answer for our organization," Dove said. The agency has had to address fears about the security of super sensitive data in the cloud, Dove acknowledged, but they have trainings in place and working on campaigns to clarify this issue throughout the year.

Cloud migration has spurred discussions about where to innovate at the agency and how to move computing resources closer to employees doing mission work. The goal is to use cloud technologies at the edge so that data scientists can gain more insights faster while also protecting their original work.

"A generation of agents and employees are coming into the Bureau with an expectation that technology capabilities such as cloud are readily available," Morris said.

What's next?

The final stage in this process, phase five, would involve optimization. After all of the workloads are in the cloud, and the agency understands why, what and where, they can move on to figuring out how to best use analytical and cognitive tools to make the enterprise and mission better.

"The FBI started out with cloud three years ago, doing small projects," Sarnowski said. "And about a year ago, they realized it needs to be enterprisewide. Now, what they have are the building blocks and they're on the ladder to take advantage of technologies such as artificial intelligence."