MAPPING YOUR PATH TO THE CLOUD
EXECUTIVE SUMMARY

There’s no denying that cloud computing is transforming the way government agencies consume information, deliver services and carry out their unique missions.

Over the past few years, agencies have gradually shifted from owning the hardware and software that support these functions to buying access to IT infrastructure and applications as a service. Early adopters of cloud have reported cost savings and IT efficiencies because they have far fewer assets to manage and greater flexibility to adopt innovative services that can be accessed more broadly from various devices.

Government-wide efforts such as the Federal Risk and Authorization Management Program, or FedRAMP, have played a key role in speeding adoption of secure cloud services. The program brought much-needed standards to cloud security by providing a common baseline by which agencies can determine if a cloud product or service is secure for government use.

For vendors, FedRAMP provides common, government-wide standards they can build to and use to show their solutions are fit for government use. Although FedRAMP launched as a federal program in 2012, a growing number of state governments are using the standards to vet security of cloud offerings.

But as with any new way of doing business, there are a few challenges. When it comes to adopting cloud services, there are three obstacles in particular that agencies can attest to: budgeting, procurement and organizational challenges.

First off, organizations have to budget for a cloud service much like a utility service, and agency buyers expect to pay only for the services they use. Second, agencies also have to navigate the challenges of buying services as opposed to assets. Then there’s the organizational impact of moving to cloud, especially when it comes to roles and responsibilities for the agency and contractors.

These are just some of the common issues agencies face. There’s also the challenge of deciding if your agency is ready for the cloud, which deployment model to use and how to develop a thorough migration strategy.

To help agencies answer these three key questions, GovLoop sat down with Rob Davies, Executive Vice President of Operations at ViON, an IT Enterprise Solutions Provider. In this report, we’ll explore these questions and provide best practices for overcoming common challenges. But first, let’s start by addressing a question every cloud user must weigh: How ready are you to embrace cloud?
Are you ready for cloud? For agencies that want to get out of the business of owning IT resources, the short answer to that question is likely a resounding yes.

“I think everybody in the government can benefit from a cloud model because every agency could use greater predictability in their budgets, an ability to meet a surge in capacity, the ability to have a consistent and reliable disaster-recovery strategy and modernization in their organizations,” Davies said.

It’s not so much a question of whether you should move certain applications to the cloud, but when and more importantly, how. But Davies also noted that cloud readiness is about much more than a desire or need to adopt cloud services. The real question is: How do agencies know which applications are ready and what workloads are the right ones to move to the cloud?

Some of the greatest barriers to cloud readiness don’t involve the technology. Often, the issues are misunderstanding, fear and anxiety. To help ease any fears and inform potential cloud buyers, Davies offered these five tips to prepare for the cloud:

**Start small.**

Use a development environment to better understand how an application is supported before moving it to a cloud environment. If you haven't done an analysis of that workload or application, you don't know what interdependencies exist between applications and whether moving them out of your enterprise will affect how they perform.

**Focus on non-critical applications first.**

Ideally, you don't want to do a technology refresh for a large system and then opt to move it to the cloud. Consider starting with a system that isn't critical to performing your agency's mission and then evaluate more critical systems. Again, a development environment can help you better understand how the app performs in the cloud.

**Consider virtualization.**

Legacy applications in a mainframe environment aren't the best candidates to port directly to the cloud because they are older systems that are not modernized to function well. On the other hand, if you have a virtualized environment running VMware or another hypervisor, you could be on the road to cloud readiness for that system. However, you still need to do an assessment of your operational environment and determine if it's a likely candidate for cloud.

**Ensure cloud vendors talk specifics.**

When you're talking to vendors about cloud readiness, require that they talk specifics. For example, have them walk you through a checklist of the types of requirements that you want met when workloads move to the cloud.

**Do a thorough assessment of your operational environment.**

This should be done across all applications to determine the characteristics of all apps, their workload performance, what types of software and what versions those applications are using, as well as the platform they're running on.

“Our definition of cloud readiness is about being ready for use, and we help agencies through this process,” Davies said. “That means you’ve migrated, you’re up, you’re ready to go and you can turn that over to your user base, wherever they are.”
WHAT’S THE RIGHT CLOUD FOR YOU?

There’s no shortage of cloud services and options for how to manage and host them, whether in-house or in a third-party facility.

But even before that’s decided, agencies have to consider which applications can and will move to the cloud.

“It really is about the importance of the system, but that can be hard to determine,” Davies said.

Here’s why: If you were to solicit employees at any organization and ask about the importance of various applications, everyone will say their application is important. But in reality, there are tiers of importance. For example, let’s say you’re the head of a fee-for-service agency. You have a major mission application that does all your transaction processing of different charges. And you use this system to collect revenues.

That’s probably not the system you’re going to put in the cloud first. That may be the last thing you put in the cloud, or you may not put it in the cloud at all. But then there are other systems and applications, such as public websites, that customers use to interface with your agency and pay their fees.

There are elements of that application you may put in the cloud, but the backend system and user data may be stored on-premise. The key questions cloud buyers should answer when deciding what type of cloud best meets their needs are:

What do you need to manage?

Similar to the earlier example, there are some applications in government that will never move to a cloud environment because they are inherently governmental functions that cannot be performed by a contractor, or agencies aren’t willing to accept the risk associated with moving a particular data set or application to the cloud. Security requirements often dictate the type of cloud that agencies use. For risk-averse agencies, a viable option may be a private cloud, where the cloud infrastructure is provisioned for exclusive use by a single organization. The cloud may also be owned, managed and operated by that organization. Either way, security must be addressed.

What can someone else manage?

If a third-party vendor or another government agency can manage the service, then that creates more options. Rather than only considering a private cloud, there may be an opportunity to explore the other models as well, including a public cloud, hybrid cloud or a community cloud. But the type of end user and the sensitivity of the data being stored in the cloud will influence this decision.

What type of data would be in the cloud?

The sensitivity level of the data will play a major role in selecting a cloud deployment model. For example, the Defense Department uses “impact levels” to classify the sensitivity of its data and determine which cloud environments are most appropriate to meet its security standards. The impact levels are defined by the sensitivity or confidentiality level of information (whether it’s public, private, classified, etc.) that will be stored and processed in the cloud and the potential impact of an event that results in the loss of confidentiality, integrity or availability of that information.

This is where programs like FedRAMP play a major role in determining how certain data should be secured in the cloud. FedRAMP standards also help agencies determine if a particular cloud deployment model is appropriate to host different types of data.
Critical vs. Non-Critical Applications

Cloud migration is generally standard for most applications — both critical and non-critical. Critical apps are those that are central to your mission and require high availability. In some cases, mission-critical apps may be better candidates for the cloud, particularly if they are newer and modernized. But they shouldn’t be the first candidate because these systems need to be up and running all the time.

It’s good to start small, experiment and use those lessons learned to migrate critical apps to the cloud in the future, if that aligns with your agency’s IT strategy. If and when you decide to move critical applications to the cloud, consider that newer apps still require development, quality checks and user testing before they are hosted in a cloud environment.

Agencies must keep in mind that these questions should not be considered independent of one another. They all play a collective role in assessing what type of cloud can best meet their needs.

“When deciding what applications to move to the cloud and what type of cloud model to use, consider what the application does,” Davies said.

That helps you understand the applications that are most important to your business and the applications that are furthest away from it. Applications that are not central to your mission and can be easily migrated to the cloud are good candidates to test in the cloud.

To help ease the load of adopting and implementing cloud services, some agencies have turned to cloud brokers. These organizations serve as intermediaries between cloud buyers and cloud sellers and provide added value in various areas, such as cloud procurement and negotiation as well as implementation. Cloud brokers can be private companies or government agencies.

“There are a lot of cloud brokers out there now that can come in, take a quick look at your workload and help you decide where to go and what to do,” Davies said. “I don’t think there are a lack of resources for agencies to go to the cloud. Sometimes it’s a matter of selecting a service and starting the process.”

WHAT’S YOUR MIGRATION STRATEGY?

Migrating to the cloud isn’t a one-time event — it’s a journey. Preparation and thorough planning are key to mapping out a successful path to the cloud.

Before applications are actually migrated to the cloud, agencies must first define their solution, develop requirements, procure the solution and ensure it is secure.

“When you get to the point where you’re actually migrating to the cloud, the steps really aren’t much different than bringing any other application into production,” Davies said.

Regardless of the type of development methodology agencies use — agile being one example — they need to have a checklist of all the functions that must be completed before the final launch. This may include standing up a quality assurance environment to do load testing on the cloud and ensure the servers and other resources selected for the cloud are adequate.

The migration process may also include user acceptance testing to check and address any features that have changed and ensure response times for websites meet service-level agreements defined in the cloud contract. During this phase, there may be kinks that need fixing.
Cloud computing has reached a point of high reliability and economics, and it should be considered along with any other technology.

In fact, federal agencies and a growing number of states are required to consider secure cloud options first when buying new technologies. The promise of greater efficiencies and cost savings make cloud an appealing option, even for risk-averse agencies like DoD.

“The budgets don’t exist anymore to hire a contractor and a program management group to design a system, evaluate it, procure all the hardware, integrate it and develop an application,” Davies said. “That takes too long.”

Government employees and the citizens they serve expect agencies to operate like private companies and deliver better services faster. Cloud is that enabler.

“Cloud allows you to turn resources on or off, acquire new resources faster, quickly get rid of something you don’t need, and you don’t have to pay for services you don’t use,” Davies said. “It gives you flexibility and speed.”

In terms of costs, agencies should always evaluate the cost of a system throughout its lifecycle and compare that with the cost of hosting that system in the cloud. Cost and capabilities should be a part of the frank conversations agencies have with vendors.

“Customers need to be able to question the vendor, and the ones that have that specificity, that means they’re experienced and they have the workflows and processes in place,” Davies said.

Davies noted that there are still privacy and security concerns that government agencies are working through, but progress is being made. “I think we’ll move past most of those arguments, and cloud is going to become a necessity because the technology is there.”

The reason: Cloud enables IT Innovation. It enables government agencies to focus on achieving results instead of worrying about the technology.
ABOUT VION

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Known for our engineering expertise and exacting standards, ViON ensures that only those with the highest level of training, experience and industry certifications design, install, maintain and support our breadth of solutions.

We focus on data management, so you can focus on your organization’s success. We’re on the leading edge of Big Data and Cyber Analytics, Cloud, Video Surveillance and Storage. ViON’s cloud-based “as a Service” Program Management Office delivers direct access to the technology you need for today and tomorrow.

From the data center to the cloud, let ViON’s passion for innovative solutions secure the competitive advantage required for your enterprise. Learn more at www.ViON.com.

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