**MARKETINSIGHTS**

# The Skies Clear for the Cloud

Agencies are adjusting operations and infrastructure to prepare for expanded cloud operations.

**O**ver the past several years, state and local agencies have become more comfortable with cloud computing. More agencies now use the cloud to run applications, manage workloads and communications, and store and analyze massive amounts of data.

Despite a generally favorable opinion of cloud computing though, agencies aren't completely forsaking on-premises infrastructure. A new survey from Nutanix explores the reasons some agencies are considering cloud for some functions and sticking with on-premises environments for others.

## Cloud First

Cloud adoption has grown and continues to grow throughout state and local government. According to the Nutanix survey, agencies are turning to the cloud more than they did three years ago. Most expect the mix to shift even more toward the cloud in the coming three years. The survey also found 60 percent of state and local agencies view commercial cloud services more favorably than they did three years ago.

That's probably partly due to the fact that so many states now have a "cloud first" policy. According to NASCIO's 2016



LESS CONCERNED **20.7%**

MORE CONCERNED **30.6%**

ABOUT THE SAME **48.6%**

**Three years ago, security was consistently seen as the main concern for moving IT to the cloud. How do you view this issue now?**

State CIO Survey, more than 70 percent of state CIOs say they have "cloud first" policies that are either formal, informal or under development. That may account for Meritalk's findings that about three-quarters of state and local agencies plan to increase spending on cloud computing this year.

One major driver for moving to the cloud is financial. According to the Nutanix survey, most agencies fund IT either as an operational expense (OpEx), or as a mix of capital expenditures (CapEx) and OpEx. That fits perfectly with the cloud model. The pay-as-you-go configuration shifts funding to OpEx. While capital expenses such as hardware must be amortized over several years, OpEx lets agencies pay only for what they consume. And there is no long-term commitment.

Despite increasing adoption and favorable views, the majority of respondents continue to view security as a potential stumbling block to moving to the cloud. About 30 percent of respondents are more concerned about security in the cloud than they were three years ago.

Government agencies have good reasons to be cautious when it comes to the cloud, but there are also many precautions they can take to ensure full, government-grade security. When choosing a cloud solution, make sure it provides two-factor authentication and data-at-rest encryption. Also ensure its security baseline meets or exceeds U.S. Department of Defense requirements.

Security features like the ability to disable interactive shell logins automatically and use non-repudiated SSH keys ensure even greater levels of security. Generally speaking, the more certifications any given cloud provider has, such as FIPS 140-2, Common Criteria, TAA and Suite B, the more security it will provide.
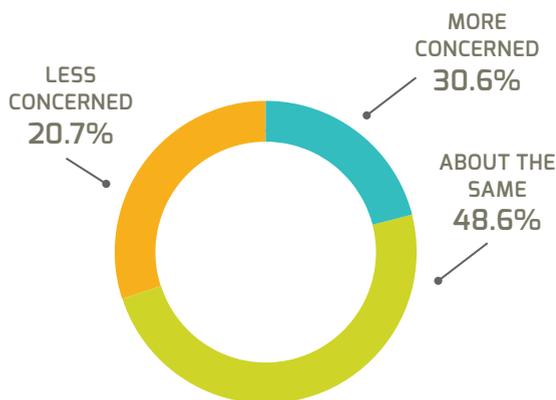
## On-premises or Cloud?

Whether an agency chooses to deploy an application or manage a workload in the cloud or on-premises depends on many factors; including performance, security, availability, manageability, and scalability.

One factor that tends to sway agencies toward the cloud is cost, which 75 percent of respondents ranked as important or very important. Other surveys corroborate that cost is a major factor. According to the Meritalk report, 67 percent of state and local agencies consider it a major driver for moving to the cloud.

There are reasons other than cost for moving to the cloud, however. According to the Nutanix survey, the top reasons are the ease of scaling resources based on demand, the ability to only pay for the resources used, and the need for less on-premises infrastructure.

Agencies also presented compelling arguments for staying on-premises. The top reason for keeping IT resources on-premises was that many applications handle sensitive information. Other top reasons included the need to host highly specialized applications and a requirement for highly secure data storage.

Further complicating the decision is the type of application being considered. Respondents were generally in favor of moving functions like ERP, back office applications, content management, e-mail, messaging, and unified communications to cloud platforms. They were on the fence about big data and advanced analytics, but were resolutely in favor of keeping batch workloads, transactional workloads, and traditional database clusters on-premises.

Transitioning e-mail, messaging, and unified communications to the cloud is often an agency's first foray into the cloud. One of the reasons for choosing those types of apps is storage. Messages add up fast and require scalable and reliable storage. Not only does this relieve the agency of the burden of storage, but can also serve as a valid disaster recovery solution. Employees can still access information from any place, at any time, on any device. Other benefits include cost-effectiveness, built-in security, and improved uptime. Finally, it offloads the task of archiving, maintaining, and upgrading systems to an offsite provider.

Moving enterprise content management—functions like records and documents management—to the cloud also makes a lot of sense. Agency staff can access and manage records and documents from headquarters or remote locations. They can also monitor who is accessing content and from where. The cloud model also makes it easier to generate reporting and analytics on demand. Moving back office applications and content management to the cloud can generate significant cost savings and improve productivity enhancements, but agencies should consider rethinking their stance on other applications.

While agencies gave only a slight edge to big data and analytics in the cloud in the Nutanix study, moving these functions to the cloud does indeed make a lot of sense. The term "big data" says it all. The large and continuously growing data stores, much of it unstructured, require significant server space. As it continues to grow, agencies need to buy more servers. By storing that data in the cloud and using cloud-based analytics, agencies can quickly perform complex data modeling and analysis on demand. This can result in faster and more accurate decisions.

Even functions agencies prefer to keep on-premises—like

## Get Ready for Cloud

Moving more functions to the cloud isn't simply a matter of flipping a switch. It requires preparation. According to the Nutanix survey, agencies are preparing by adopting more virtualization, using more converged solutions, and reducing the number of data centers.

And that's exactly the right approach. By virtualizing as much of the IT infrastructure as possible—storage, network, and servers—agencies give themselves the level flexibility and scalability required for the cloud. Doing so also helps them support more users at lower cost. Essentially, it puts automation first.

Virtualization goes hand in hand with adopting a converged infrastructure—the idea that storage, networking, and server resources are under one management umbrella. A converged infrastructure integrated with a hypervisor is just one step away from the cloud. Together, virtualization and converged infrastructure help agencies consolidate their IT infrastructure. More importantly, they create a direct path to the cloud.

batch workloads, transactional workloads, and traditional database clusters—may merit another look. Transactional workloads, for example, can benefit from the scalability and reliability cloud provides to manage peaks. It's typically a matter of asking the right questions and choosing the right cloud environment for the workload. For example, mission-critical workloads with stringent response times and recovery time objectives might do well with an Infrastructure as a Service (IaaS) cloud model. The other decision is whether to deploy workloads in a private, public, or hybrid model. That decision is often based on workload sensitivity and security requirements.

Over time, agencies are likely to experience more wins with their cloud endeavors. They will likely become more comfortable with security in the cloud. Those experiences, added to the general move toward "cloud first" at all levels of government, may lead agencies to delve deeper into the possibilities of the cloud.

**NUTANIX.**

**For more information, please visit www.nutanix.com**