Catching up to Cloud Smart: How to Maximize Your Data With Hybrid Cloud

MARKET TRENDS REPORT

govloop

NetApp®

immixGroup
An Arrow Company

Introduction

A day after releasing the federal government's final Cloud Smart strategy in June 2019, Federal Deputy Chief Information Officer Margie Graves shared several observations about the state of cloud adoption and where agencies are heading.

"We know that most agencies will continue to operate in what I would consider to be a hybrid environment," Graves told an audience of government and industry professionals during the Advanced Technology Academic Research Center (ATARC) Cloud and Infrastructure Summit in Washington, D.C. "So being able to seamlessly move between those environments requires that you understand the engineering that goes on between ... clouds."

Graves went on to say that having this baseline understanding of how various clouds are connected will help to prevent agencies from being locked into using one vendor because they considered their future needs.

The hybrid cloud state Graves described is really multiple types of clouds (i.e., public, private, community) working together. And although a number of agencies are operating email, collaboration and even some mission-critical systems in the cloud, many are not. The reason? They often don't know where to begin or are apprehensive about the cloud, data security, access to data and more.

Hybrid cloud allows agencies to move to the cloud without abandoning the convenience of their preferred on-premise solutions. GovLoop partnered with NetApp to produce this report and highlight how hybrid cloud environments help agencies improve IT operations and data management. In the following pages, we explain the current challenges agencies face with cloud adoption and how hybrid cloud can help make that transition a smooth one. You will also hear from Rob Stein, Vice President U.S. Public Sector at NetApp, who explains why hybrid cloud is the preference of modern governments that require strong data management to support their missions.

BY THE NUMBERS

"Industries that are leading in technology innovation have also demonstrated that hybrid and multi-cloud environments can be effective and efficient for managing workloads. As a result, the Cloud Smart strategy encourages agencies to think of cloud as an array of solutions that offer many capabilities and management options to enhance mission and service delivery."

-*Federal CIO Suzette Kent*

$28.85 billion

The government cloud market is expected to reach $28.85 billion by 2022.

Source: Government Cloud Market Global Forecast by 2022

Multi-Cloud vs. Hybrid Cloud

- Multi-Cloud: The use of multiple cloud computing services in a single, heterogeneous architecture to reduce reliance on a single vendor.

- Hybrid Cloud: Two or more clouds that remain distinct entities but are bound together, offering the benefits of multiple cloud deployments.

Source: Gartner

14/22

Agencies have already completed 14 of 22 Cloud Smart initiatives and have made substantive gains. The remaining goals are in progress, including updating the Trusted Internet Connection (TIC) Policy.

Source: Federal Cloud Computing Strategy

4 agencies

The United States Agency for International Development, General Services Administration, Housing and Urban Development Department and the Education Department — out of 24 reviewed received an "A" rating for their data center optimization initiatives in the latest iteration of the FITARA scorecard.

Source: FITARA 8.0 Scorecard

15

15 federal agencies reported receiving significant benefits from acquiring cloud services, including improved customer experience and more cost-effective options for managing IT services.

Source: Government Accountability Office April 2019 Report

THE CHALLENGE
IT Complexities Stall Cloud Adoption

Federal agencies have seriously discussed the benefits and challenges of cloud computing for at least the past decade, following the 2010 release of Cloud First — a governmentwide policy that mandated agencies to consider cloud when making new IT investments.

But as the government evolves to a Cloud Smart approach that advocates for more effective adoption of cloud services, agencies must still contend with the intricacies of deciding which cloud model to use and how to deploy it.

"The No. 1 concern is really the complexity," Stein said. "I don't think it's appreciated how complicated it is to move an application that's been around for sometimes decades to the cloud."

With the advent of Cloud Smart, it became clear that one size doesn't fit all in the cloud. The strategy details a more holistic view of cloud in three key areas — security, procurement and workforce — and explains how these pillars support successful cloud adoption. But the strategy isn't prescriptive. It leaves room for agencies to choose the right approach to

cloud based on their need, and that's where the real work comes in.

Even after agencies have factored in the concerns and benefits of cloud and determine it is the best approach, there are still risks associated with that decision. "These are mission-critical workloads that are very important to the day-to-day operations of the agencies," Stein said. "Adding risk into the execution of the mission is a serious consideration that agencies do not take lightly."

With all of these considerations that must be weighed, deciding where to start with cloud adoption can be confusing without a plan in place. At a time when agencies are prioritizing IT modernization and eyeing tools such as analytics and artificial intelligence to utilize their data better, cloud must be central to that conversation. It has quickly become a foundational capability that supports the use of other dynamic tools.

But agencies need to incorporate gradual steps and best practices to make their transition to the cloud successful.

THE SOLUTION

Moving to the cloud helps agencies unlock business potential, secure assets and mobilize the workforce. **The right transition, however, requires gradual steps along the way. That's where hybrid cloud comes in.** It allows agencies to improve data management, meet regulations and tailor cloud by adopting a menu of cloud options that best suit their needs.

With hybrid cloud, agencies can securely and efficiently move data and applications across cloud platforms while maintaining the continuity of on-premise applications. In this environment, agencies can oversee all of their data, allowing them to access a variety of capabilities across on-premise and cloud environments.

Improved data management is at the core of hybrid cloud success and allows agencies to do an inventory of their workloads. It forces them to delve beneath the surface of their operations and understand what applications they have, the performance of those apps and whether they're meeting demands, who is using those applications and how they access them.

Ultimately, hybrid cloud, coupled with a holistic data management plan, leads to better data visibility, insights and security. In the next section, we highlight best practices for improving data management in a hybrid cloud environment.

BEST PRACTICES
Improve Data Management in a Hybrid Cloud Environment

I. Evaluate what data and applications you have

Before you decide which cloud model to use, whether hybrid or otherwise, you must understand what data and applications you currently own. Application rationalization provides that way forward for agencies. "The rationalization process will involve reducing an application portfolio by 1) assessing the need for and usage of applications; and 2) discarding obsolete, redundant, or overly resource-intensive applications," according to Cloud Smart.

2. Determine which cloud environment best supports that data

Once you understand what's in your environment, you can then begin asking pertinent questions to find the right hosting environment and platforms for your data. A key consideration is security. Questions to ask include: Where is data housed, and how is it protected? Are the tools you currently have in place providing you with the security and visibility offered in the cloud? Could a multi-cloud environment offer better security? Ultimately, make sure you and your agency understand how to manage data, regardless of where it resides.

3. Don't limit yourself

Don't just pick a single cloud or decide to only stay on-premise, especially without understanding your current and future needs. Give yourself the flexibility to run in multiple clouds, if needed, and ensure you have visibility across those clouds. How are applications in those clouds performing, and do those performance metrics meet your agency's standards?

4. Invest in a robust data management architecture

This architecture should include a set of data services that provides consistent capabilities across a variety of endpoints, both on-premise and across multiple cloud environments. A data management architecture simplifies and integrates data management across your agency's IT environments. Other benefits include data visibility, data access controls and protection, improved security and flexibility to move across clouds and prevent vendor lock-in.

5. Find the right skill sets

Your current workforce may not have the skills required to operate in a hybrid cloud environment, but there are several ways to augment and build those skills in your organization. First, partnering with a data management expert not only gives you immediate access to the skills you need, but your staff will also get the opportunity to work alongside and learn from industry experts. Reskilling and upskilling staff to learn practices such as Agile and DevOps can further support successful and accelerated adoption of cloud capabilities.

Case Study: International Development Agency Marks Seamless Transition to Cloud

For one international development agency, the process of cloud migration began with a well-designed enterprise architecture (EA), which allowed the agency to ease slowly into the cloud and comply with federal mandates. A strong EA strategy was part of the driving force behind the agency's ability to hit its cost savings and optimization targets, all while supporting several thousand employees worldwide. This level of success came from a multi-pronged approach that also included IT consolidation and implementation of a computing model that prioritized cloud adoption.

After evaluating possibilities and crunching the numbers, the agency determined that the cloud was an irresistible proposition. It estimated that it could save 35-40% on capital expenditures by moving to the cloud.

Consolidation into a shared data center enabled staff to better evaluate systems and business processes, and monitor and manage the IT infrastructure effectively. This led to early adoption of Software-as-a-Service offerings that covered e-mail and office applications. Nobody expected the transition to be simple. Maintaining the mission around the clock through

the migration was the top priority. Complex federal regulations governed the transition, and cloud skills in the existing IT workforce were limited. Still, within a matter of months, the bulk of the work was completed.

One of the agency's requirements, before it even approved the migration, was to develop an exit strategy. If, after 12 months, the agency decided to move to a different cloud provider, it needed the freedom to extract data swiftly and seamlessly. To help meet this demand, the agency partnered with NetApp and an IT consulting firm. One of the key benefits of NetApp solutions is they work identically in every cloud environment, regardless of the provider.

In this specific case, the agency utilized NetApp as its on-premise data platform, which meant it could eliminate outages by using the SnapMirror data replication tool. The software replicates network data at high speeds and then makes data available over secondary sites. Finally, once migrated, the workloads are managed using Cloud Volumes ONTAP software, running inside Amazon Web Services (AWS).

HOW NETAPP HELPS

With NetApp's Hybrid Cloud Infrastructure solution, agencies can host their data in a public cloud, a private cloud or wherever they choose. Using NetApp, agencies can streamline data management between on-premises and cloud storage for enhanced data portability, visibility and protection.

For example, NetApp Cloud Volumes ONTAP is a powerful, cost-effective and easy-to-use data management software that runs natively in the cloud. It allows you to move data while keeping the same capabilities from on-premise, including data protection, file-sharing, production workloads, and DevOps and Dev/Test. With Cloud Volumes ONTAP, you can manage your cloud-based data with the same capabilities that you expect on-premise, while seamlessly integrating into the NetApp Data Fabric. Data Fabric is a software-defined approach from NetApp

for data management that enables businesses to connect disparate data management and storage resources.

"A missing piece of the IT services puzzle for many agencies has been end-to-end visibility of the storage infrastructure," Stein said. "By integrating NetApp's OnCommand Insight into daily IT operations, organizations have successfully optimized storage networks across physical, virtual, private and cloud platforms; implemented key performance indicators to track network health; and analyzed trends to improve capacity planning."

OnCommand Insight enables you to simplify operational management of complex private and hybrid cloud and virtual IT environments.

To learn more, visit www.netapp.com.

Conclusion

Improved efficiency, data accessibility and security are just a few of the benefits agencies reap through cloud migration. But a successful cloud journey doesn't come without planning and clarity around where your data will reside and how you can access it.

Regardless of where you are in your move to cloud, a hybrid approach allows you to incorporate gradual steps and manage applications in a manner that best suits the needs of your agency. When agencies combine strong data management solutions and cloud capabilities, they can improve data consistency and interoperability.

Hybrid cloud is a key enabler in that regard, and provides both the efficiencies envisioned by agencies and the modern operations that governments need.

ABOUT NETAPP

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation and optimize their operations.

For more information, visit www.netapp.com #DataDriven

ABOUT GOVLOOP

GovLoop's mission is to "connect government to improve government." We aim to inspire public-sector professionals by serving as the knowledge network for government. GovLoop connects more than 300,000 members, fostering cross-government collaboration, solving common problems and advancing government careers. GovLoop is headquartered in Washington, D.C., with a team of dedicated professionals who share a commitment to connect and improve government.

For more information about this report, please reach out to info@govloop.com.

govloop