Powering Growth and Innovation for Hybrid Cloud

MARKET TRENDS REPORT

govloop DATASTAX

Introduction

Today, federal agencies such as yours are taking significant steps to modernize their systems, opening the door for emerging technologies to increase agility and innovation. Federal employees can experience greater empowerment with new, modernized tools that allow them to focus on strategic work. By equipping staff with cloud computing capabilities and the confidence to take on new responsibilities, government agencies invite fresh ideas, a place to test them and the potential to solve complex issues affecting the environment in which they operate.

Clearly, accelerating cloud adoption is critical to any agency's ability to maintain a long-term strategic advantage and meet mission needs.

"For the Defense Logistics Agency, as with others in the Defense Department, [DoD] consolidating and closing data centers becomes more important with each passing day," said Kathy Cutler, Director of Defense Logistics Agency (DLA) Information Operations. "Early on, we recognized closing small data centers and consolidating information in the cloud greatly benefits DLA and our employees in terms of efficiency, security and data analysis."

But there are challenges to moving workloads to the cloud. Your agency likely has extensive mission-critical assets in on-premise data centers, commercial cloud service offerings and contractor-owned facilities spanning multiple classification levels. How can you integrate these silos and keep data secure and accessible while still accomplishing your mission?

A hybrid approach, where on-premise and cloud resources function together, will be the path forward for your agency to be able to make the most of your current assets while benefiting from cloud innovation.

To help federal agencies dealing with multiple facilities, sensitive data related to national and infrastructure security and a variety of user levels and access, GovLoop partnered with DataStax, a leader in hybrid cloud database transformation, for this market trends report. In the following pages, we'll explore benefits of hybrid cloud and best practices to overcome some of the more common challenges associated with moving to that system. We also gain insights from Christine Cox, Regional Vice President, DataStax.

BY THE NUMBERS
Hybrid Cloud in Government

$36 million

in expenditures has been avoided by DLA moving 39 percent of the component's applications to the cloud under DoD's Data Center Optimization Initiative, and DLA expects $50-100 million will be avoided over the next five years.

Source: Defense Logistics Agency

"I see going into the cloud as a force multiplier. You have Amazon, Microsoft, Google's security operations center on top of your security operations center and their layers of security on top of your layers of security."

– Jeremy Wiltz, the FBI's assistant director, IT enterprise services division

Source: Federal News Network

4 years

straight, the Veterans Affairs (VA) Department's spending on cloud services and migration has increased, reaching more than $860 million in 2017.

Source: Federal News Network

"By updating an outdated policy, Cloud Smart embraces best practices from both the federal government and the private sector, ensuring agencies have capability to leverage leading solutions to better serve agency mission, drive improved citizen services and increase cybersecurity."

– Federal CIO Suzette Kent, in launching the Cloud Smart Strategy in 2018

Source: Whitehouse.gov

"We are exploring opportunities to leverage both the public cloud and the DoD cloud, but we want to take a deliberate approach."

– Army Col. Richard Wilson, Defense Health Agency's Solution Delivery Division Chief

32%

was the expected increase for federal cloud services contract obligations in 2018, reaching an all-time high.

Source: FedTech

THE CHALLENGE
Effectively Accessing and Sharing Sensitive Data

By efficiently accessing and analyzing the vast amounts of disparate data collected from various government sources, your agency can proactively enhance decision-making.

But this data that your agency manages in particular – highly sensitive, personal and private information, often critical to our nation's security – is only useful if it can be securely stored, immediately accessed and available for analysis.

The most significant challenge federal agencies face when it comes to data is actually accessing it. Your agency likely has assets across locations and clouds – on-premise, in different facilities and in multiple clouds, with different levels of user access and security. When data is not easily accessed or stored or is residing in multiple locations with varying levels of access, it is difficult to make data-driven decisions, maintain security and share across a variety of departments and users.

DoD is currently struggling with this issue, as it cited in its recently released cloud strategy:

"The DoD has multiple disjointed and stove-piped information systems distributed across modern and legacy infrastructure around the globe leading to a litany of problems that impact warfighters', decision makers', and DoD staff's ability to organize, analyze, secure, scale, and ultimately, capitalize on critical information to make timely, data-driven decisions."

DoD's components are not the only ones facing this data challenge. Your agency is likely already aware that by efficiently accessing and analyzing the vast amounts of disparate data collected from various government sources, you could proactively enhance decision-making.

"There are executive and agency-level mandates to move to the cloud, or to a specific cloud," Cox said. "Agencies are very concerned about the accessibility and security of their data, once they move to that cloud environment. Maintaining autonomy over their data is an important consideration that they have going forward."

How can you reconcile all this data to have it available in the cloud so the right people can access it, securely, at the right time, to make thoughtful decisions that benefit mission outcomes?

"Being able to move that data from one place to another, be it from their on-premise data center to the cloud that they're currently managing, or, in the future from one cloud solution to another, or even just to house that data in more than one cloud environment, is critical," Cox said.

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- Christine Cox, Regional Vice President, DataStax

THE SOLUTION

Moving to a Hybrid Cloud Environment

The hybrid cloud allows your agency to access a combination of data that resides on-premise and in the cloud. It's a forward-looking path, with the ability to work in a combination of legacy applications that won't be modernized, and more modern applications that will be developed on the cloud for the capabilities and opportunities there.

A hybrid cloud can be defined as a combination of an enterprise on-premises cloud system and a remote, vendor-provided cloud system. In a hybrid cloud, applications might have components located on premises or externally.

"We've seen in the federal space that hybrid cloud involves some combination of datasets held in onsite data center resources, managed by a particular agency," said Cox. "For example, it could be the Department of Justice having three data centers across the country in which they're housing their data, or in some specific cloud vendor."

With a hybrid cloud, agencies can take advantage of emerging cloud technologies while retaining use of their on-premise infrastructures to ensure they continue to deliver a return on investment. A hybrid cloud also creates flexibility for data to be accessed by different users with different security permissions.

For security purposes, hybrid clouds can provide as good as – if not better security than – traditional infrastructures in part because service providers can allocate far more resources and time to security issues than the owners of private clouds. Also, a hybrid cloud environment gives you the ability to take advantage of newer security forces, such as artificial intelligence (AI) and machine learning.

Finally, a hybrid cloud infrastructure will allow your agency to allot far less resources to architectural upkeep and maintenance by shifting load-heavy data to the public cloud, allowing you to develop and test new projects there without acquiring new onsite equipment.

"A hybrid cloud infrastructure addresses an agency's concern around security of the data in the cloud, being able to continue to access that data in the cloud in a broad standardized format, and not being locked into a specific solution from one specific vendor," said Cox.

HOW DATASTAX HELPS

Agencies today need a data management strategy that enables the flexibility to power modern applications as mission needs evolve. To successfully modernize, agencies must deliver contextual, real-time experiences for globally distributed users in an always-on model at scale in hybrid and multi-cloud architectures. The right data management platform must also be operationally efficient, agile and secure while making it easy for agencies to "lift and shift" data between on-premise and the cloud.

DataStax Enterprise powers agencies with an always-on, distributed cloud database built on Apache Cassandra and designed for hybrid cloud. As a foundation for real-time applications at massive scale, the DataStax Enterprise makes it possible for agencies to exceed expectations through user and enterprise applications that provide responsive and meaningful engagement citizens wherever they go.

"When you have a vendor that isn't tied to a specific cloud, as is the case with DataStax, it allows you to go ahead and move your data without having to do an expensive reformatting and migration of data," said Cox.

DataStax Enterprise gives agencies full data autonomy, allowing them to retain control and strategic ownership of their most valuable asset in a hybrid cloud world

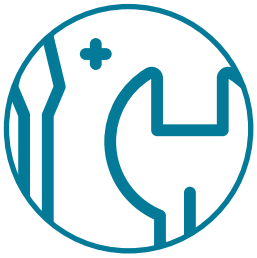
To learn more, visit: datastax.com

BEST PRACTICES

Leveraging the Hybrid Cloud

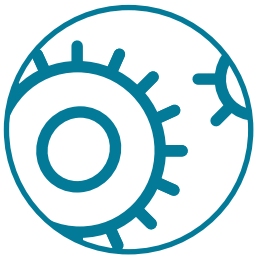
I. Make sure you put pen to paper in terms of defining your cloud needs

"It's critical that agencies are stating and defining security policies, adequately formulating service level agreements and putting pen to paper," Cox said. These areas tend to not be very well-defined, which causes obstacles, so you must work to define with all users and stakeholders what needs and expectations your agency has.



2. Develop requirements

After you know your agency's needs and security levels, you must develop your actual requirements for the hybrid cloud system. This can often be a unique challenge because legacy systems must be translated into cloud-based ones. To get started, first think critically about what's most important to your organization and establish a set of principles and requirements that are essential to your agency's mission.



3. Create an enterprise-level data governance strategy

"Good data governance is critical in moving to the hybrid cloud," Cox said. Your agency should work to create an enterprise-level data environment that works across systems and agencywide. This includes deciding processes, roles, standards and metrics that ensure the effective and efficient use of data and information in enabling your agency to achieve its mission.

4. Move to proper data management via an enterprise data layer

This move empowers enterprises to unlock the full potential of their multi- and/or hybrid cloud strategies to achieve data autonomy while scaling efficiently, effectively and safely. A modern enterprise data layer gives you data autonomy, or the ability to retain complete control over your data no matter where it resides. As a result, efficiency increases, accelerating innovation and helping your agency make better decisions and better serve users.

5. Find the right database for your hybrid cloud needs

Agencies need a distributed, hybrid cloud database that offers consistency, flexibility and capability in the form of real-time data and 100 percent uptime, or their hybrid cloud strategy simply won't work.

Conclusion

The future for your agency's agility, security, data access and capacity for innovation rests in a hybrid cloud environment. A hybrid cloud database will integrate multi-data center locations and data residency, allowing you to store your data in the right geographic locations according to your compliance requirements. Federal agencies that move to hybrid cloud database solutions are able to build the exact infrastructure they need, reducing management complexity and risk along the way. In turn, this enables engineers and database administrators to increase productivity and innovation.

DATASTAX

ABOUT DATASTAX

DataStax delivers the always-on, active everywhere distributed hybrid cloud database built on Apache Cassandra™. The foundation for personalized, real-time applications at scale, DataStax Enterprise makes it easy for enterprises to exploit hybrid and multi-cloud environments via a seamless data layer that eliminates the issues that typically come with deploying applications across multiple on-premises data centers and/or multiple public clouds.

Our product also gives businesses full data visibility, portability, and control, allowing them to retain strategic ownership of their most valuable asset in a hybrid/multi cloud world. We help many of the world's leading brands across industries transform their businesses through an enterprise data layer that eliminates data silos and cloud vendor lock-in while powering modern, mission-critical applications.

For more information, visit www.DataStax.com and follow us on Twitter @DataStax.

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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.

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