

HOW HYBRID IT CAN TRANSFORM GOVERNMENT

INDUSTRY PERSPECTIVE



Hewlett Packard
Enterprise

EXECUTIVE SUMMARY

No one can deny that the technological environment in which the federal government operates is wildly different today than it was even a few years ago. Citizens now expect instant access to vast troves of data and information — and the government must keep pace. In fact, the federal government maintains and operates one of the largest information technology infrastructures in the world, requiring constant attention to performance, efficiency and cost.

Public-sector IT is at a crossroad. In the past, it was considered forward thinking when government agencies digitized paper records, launched web sites and conducted business in an all-digital environment. Servers, computers and systems sprung up in an ad hoc, as-needed way. As a result, many agencies' IT departments are decentralized, with multiple data centers and siloed system architectures that operate independently. This makes it impossible to extract the value of a department's total efficiency and performance because it lacks collective oversight into its systems.

The real job at hand is to leverage all of the available platforms and service options to fundamentally change how government operates and interacts with its citizenry and workforce. Just as Uber has changed the way consumers hail a taxi, a hybrid IT approach can transform the way government delivers services.

Today, it's not enough to operate in a digital environment. The role of an IT services organization is evolving from "IT shop" to mission partner, aligning technology with agency goals. Infrastructure alone is no longer the objective. IT leaders must reevalu-

ate their primary business goals while containing costs, increasing performance, ensuring security and providing a flexible environment that allows for rapid changes in application development.

Although taxpayers expect services at the swipe of a finger, government IT leaders can't update their systems so quickly. They have two major concerns when it comes to modernizing their infrastructure and taking advantage of tools such as cloud computing. The first is controlling costs, such as costs of the data centers and cloud service providers that have sprung up in the past couple of decades. The second is to look end-to-end across all assets and figure out how to maximize their use in a flexible, cost-effective way.

But there is a path forward to make government responsive and efficient. Government chief information officers need to look to the hybrid IT model to transform how government operates, solving critical problems while meeting the requirements to satisfy both mission and budget.

To figure out how to manage this issue, GovLoop partnered with Hewlett Packard Enterprise (HPE) for this industry perspective. In this resource, we ask Don Hewatt, HPE U.S. Public Sector Workload and Cloud Practice leader, how government should meet existing infrastructure management challenges while satisfying the broad requirements of their user base.

TODAY'S PUBLIC-SECTOR CHALLENGES: CONSOLIDATION & IT SPRAWL

Government has a huge problem: The demand on IT infrastructure has forced an evolution from delivering basic components — servers, storage and networks — to an as-a-service model. This means that now, many enterprise IT owners need to quickly determine how they can grow to become more of a service provider to their internal consumers.

Two trends are driving this shift in consumption: a massive change in the way applications are developed and used, and challenges in achieving cost and time-to-market efficiencies with the existing IT model.

In the late 1990s and early 2000s, application owners began to look to the commercial market to solve their rapidly evolving IT dilemmas, which led to what is known as “IT sprawl.”

This sprawl has caused difficulties for government IT organizations trying to justify and meet budget constraints, control procurement and retain service quality. In addition, this has also set many security governance programs back years in their overall effort to secure sensitive data and understand the threat posture of their enterprise. Federal, state and local governments are now constantly struggling to balance legacy operations and cost-cutting measures against a growing and demanding population, rising cybersecurity threats and public demand for better services.

The vast majority of government agencies is dealing with a requirement to consolidate data centers in accordance with the

Federal Data Center Consolidation Initiative, which was launched in 2010 to reverse the historic growth of federal data centers. Data center consolidation is a common consideration for organizations planning to reduce the size of a single facility or merge facilities to reduce operating costs and their IT footprint.

All of these events have made now the perfect time for public-sector agencies to consider hybrid IT solutions. You can work to assess your applications, figure out what you need as you go and create a more efficient infrastructure, using a mix of internal and external cloud solutions in coordination with traditional IT infrastructure.

But when done incorrectly, a move to the hybrid cloud can be ineffective and inefficient. You need the help of a trusted partner along the way, which is where HPE cloud services come in.

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CREATING YOUR 'RIGHT MIX' OF HYBRID IT

Most government agencies are heading toward a mix of private cloud, virtual private cloud, public cloud and traditional IT resources. Hybrid infrastructure is a potential combination of these four elements across multiple vendors. A key to creating an optimal hybrid infrastructure strategy is to define your right mix of these deployment platforms, specific to your agency's needs.

Managed private cloud is ideal for mission-critical workloads that have specific security or compliance requirements or that require specific hardware to meet performance expectations while existing in any one of these models: government-owned, contractor-operated; government-owned and -operated; contractor-owned and -operated. A multitenant variation of managed private cloud is Managed Virtual Private Cloud (VPC), a cloud in a managed environment that can scale quickly to meet agency requirements. Public cloud is ideal for cloud-native applications that have large variances in demand with a lessened emphasis on security. Traditional IT is best for supporting legacy applications that are not economically or technically feasible or too policy-constrained to move to a cloud service platform.

Hybrid cloud combines the distinct capabilities of private and public clouds. Enterprise IT can balance flexibility and control while laying an architectural foundation that quickly scales services, speeds application development and reduces IT costs.

As we discussed, many public-sector agencies are moving workloads to the hybrid cloud to cut costs and change cloud computing from a capital expense to an operating expense, where services can be purchased as needed.

The Different Types of Cloud:

Public cloud. A public cloud makes information available to anyone. Generally this is a shared IT infrastructure model, where multiple companies or organizations are sharing the provided infrastructure.



Private cloud. A private cloud offers dedicated infrastructure to one organization or agency. The agency's internal applications are hosted on the infrastructure, but the agency can determine who has access to share and leverage the data.



Hybrid cloud. A hybrid cloud consists of two or more deployment models. For instance, a hybrid cloud can contain both a public and private cloud and can easily segment data and transfer data between clouds as necessary. This emerging option allows IT departments to balance security, operational control and cost by retaining sensitive data locally.



Community cloud. A community cloud provides multiple organizations or agencies access to resources that may be managed by the agencies or an outside provider. These organizations usually have similar interests in collaboration, security requirements, policies and mission.



But the fact is that many government agencies move their workloads without first thinking about which platform is best for their applications. Although this seems like a natural first step, resource challenges combined with the White House “Cloud First” mandate often force and possibly incentivize government agencies to skip this critical beginning.

But if you don't pick the right cloud platform for the right workload, your agency could end up just migrating the application again after the fact, costing extra time, money and effort.

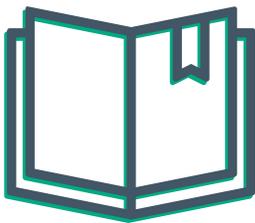
“Asking a single provider to adapt their offering to a workload that is not a good fit for their service drives additional cost and risk into the solution,” Hewatt said. “Leveraging a hybrid approach where the workload has been assessed and the right

platform has been determined can provide a high-performing and cost-effective solution that satisfies the needs of the entire consumer base.”

To achieve the flexibility that businesses require, IT departments need to deploy a hybrid infrastructure with both multi-cloud and non-cloud architectures. HPE calls this the “**Right Mix.**”

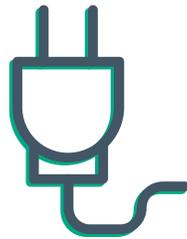
The Right Mix optimizes performance, security, compliance and cost by enabling fast, convenient access to IT services within a complex, multi-cloud environment; the delivery of secure, compliant services in a private cloud; and easy access to traditional IT for legacy applications.

Here's how it works:



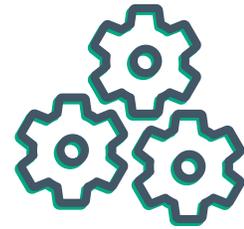
DEFINE your workload

No two agencies are the same, and no two workloads have the same characteristics. Requirements for delivery, performance, scalability and security vary significantly, but each must be considered to meet business service-level agreements and ensure compliance with ever-evolving regulations. When deciding which cloud platforms are most compatible for each government agency, workload is the main driver IT professionals should consider. CIOs and contracting officers must take a personalized approach to their specific agency needs. Just as workloads can vary broadly in their requirements so too can cloud platforms vary in their ability to meet those requirements.



POWER your workload

To achieve the flexibility that the public sector requires, IT departments must deploy the right hybrid infrastructure to power their IT services. HPE can help because it has a broad portfolio of products and services that offer the fastest path to a hybrid infrastructure with optimized performance, security and cost — including support for third-party hardware — and a complete portfolio of managed services if you want to avoid the hassle of managing the environment yourself. This enables you to offer the Right Mix of public cloud, private cloud and traditional IT capabilities to meet performance, scalability, and security and data residency requirements, all within a single management environment.



OPTIMIZE your workload

With HPE services, you can become an agile internal service provider. It provides the tools you need to optimize your hybrid infrastructure with assured performance, security and compliance. The hybrid infrastructure management tools offer self-service access with multiple service catalogs and template service designs to administer and optimize resources across a hybrid infrastructure. They allow you to maximize use, reduce costs and ensure the agility you need to meet the demands of internal and external services.

By examining your workloads with this “Right Mix” approach, you'll make sure that you have the right cloud solutions from the get-go. An optimized solution of private cloud, public cloud and traditional IT maximizes IT spending and speeds innovation to transform your agency into an agile, on-demand, hybrid service provider. It enables you to deliver the flexibility, innovation and cost structure your organization needs to grow and thrive in the dynamic environment that the public sector faces today.

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HOW A CLOUD BROKER HELPS YOU MAINTAIN THE RIGHT MIX

Defining and executing your cloud strategy is a good start. But more likely than not, you will need some help along the way — and afterward — to make sure that your cloud strategy is paying dividends and performing optimally.

As cloud solutions expand, the need for cloud orchestration increases, from harnessing third-party vendors' resources to stopping "shadow IT" purchases by employees empowered to post sensitive data on potentially unsecured consumer-grade cloud systems. You need to get control of your budget, staff and cloud service providers to ensure a successful journey to a hybrid cloud.

That's where a cloud broker service comes in.

A cloud service broker provides a suite of managed services to enable businesses to provision, control and manage multiple vendors from a fully integrated view, either inside the agency's data center or at a third-party one.

"One of the big advantages to leveraging a hybrid IT cloud broker system — which rides on top of all of these platforms and normalizes them — is that it provides total oversight into all aspects of IT management that also allows you to make intelligent decisions, so that you're not leveraging just one provider and forcing that one provider to meet all your needs," Hewatt said.

A cloud broker service, such as HPE Helion Managed Cloud Broker, offers an integrated view of your hybrid IT ecosystem

that lets you focus on your mission need, instead of IT sprawl. It solves the problem of managing a collection of physical and virtual servers and systems — some in-house, others run by third-party vendors — in addition to cloud service providers.

This cloud broker platform enables governance over internal and external IT service providers and establishes service efficiencies by providing a single view of your IT spending, service performance, operational configurations and security posture. It also gives you aggregation and intermediation capabilities for creating new services and executing workload migration and security strategies.

"The approach at HPE is to give CIOs a platform that allows them to recognize, govern and have complete visibility across these entire disparate platforms, thus creating a hybrid IT approach to the enterprise," Hewatt said.

Public-sector use of a cloud broker service is more critical than ever these days. With the push toward data center consolidation and cloud first computing, the federal government will use third-party cloud providers more frequently as it works to implement a hybrid IT approach. Using a cloud broker system will help get end-to-end visibility into the service lifecycle of all IT activities, identify and mitigate redundancies, create new capabilities with existing IT resources, and match cloud service providers against specific workload requirements.

KEEPING THE CLOUD SECURE, COMPLIANT

As government agencies make their move to the cloud, they have the added pressure of adhering to a range of alphabet soup regulations, such as HIPAA, PCI, ITAR, DoD SRG and FedRAMP. Hewlett Packard Enterprise's platform and software services for the public sector are purpose-built for cloud service consumers who must demonstrate compliance to government or industry overseers. A team of dedicated security specialists works full time to ensure that HPE's Helion Managed VPC meets FedRAMP moderate and Department of Defense FedRAMP+ controls.

"Customers come to us because we maintain and operate FedRAMP-compliant offerings. This means that we can help government agencies as well as independent software vendors get to the cloud," Hewatt said. "And we can help them stay there!" He detailed the personnel-intensive procedures that ensure that federal government data and information is protected to federal standards. Not every cloud service provider has attained a provisional authority to operate as fast as HPE did, in 2013 — a testament to the fact that the company has been serving the federal government and meeting its exacting standards for more than 50 years.

Security Regulation Acronyms: What do They Mean?

HIPAA	Health Insurance Portability and Accountability Act
PCI	Payment Card Industry
ITAR	International Traffic in Arms Regulations
DoD SRG	Department of Defense Security Requirements Guide
FedRAMP	Federal Risk and Authorization Management Program

CONCLUSION

Every agency's technical requirements and business drivers are unique. But there are some basic key factors to consider to ensure that you choose the right cloud option for your agency.

Creating a seamless hybrid infrastructure that is secure and provides end users with what they need safely, securely and quickly is possible.

That's why your agency should seek a partner such as HPE to guide its transformation to a hybrid cloud solution. HPE recognizes that applications are at the heart of government operations and that extracting optimum performance and efficiency from those applications is essential to serving a connected and mobile constituency of citizens and employees.

Whether you're using a public or private cloud — or a bit of both — HPE can help you navigate the hybrid IT landscape to find the Right Mix for your agency's IT needs in a secure, compliant way.



About HPE

Hewlett Packard Enterprise is an industry leading technology company that enables customers to go further, faster. With the industry's most comprehensive portfolio, spanning the cloud to the data center to workplace applications, our technology and services help customers around the world make IT more efficient, more productive and more secure.

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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 250,000 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.

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