

May 2023 | eBook

How Government IT Can Survive and Thrive in the Cloud Era

NUTANIX



Introduction

This eBook provides crucial insights that government IT leaders recently shared at a Nutanix-sponsored event.* While many face unique challenges, all are confronted by pressures to modernize and innovate faster, solve legacy problems, accelerate service delivery, ensure operational alignment with compliance mandates, and achieve mission success. Speed, agility, resilience, and performance were also singled out as imperative along with a zero-trust architecture to ensure strong security.

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*[Nutanix Cloud Together Summit](#), Nov. 17, 2022, Arlington, Va.



New and Persistent Challenges

Government IT leaders widely acknowledged the headwinds they often encounter and the enormity of the impact on their technology stack. Research by industry analysts echoes these observations:

- Apps are increasing exponentially and estimated to exceed **750** million by 2026, which is **50%** higher than previous estimates, according to the [2022 IDC FutureScape report](#).
- Data is exploding and a [2023 report by Statista](#) concludes that **181** zettabytes are created and consumed every day.
- **50%** of data is generated at the edge, according to the [2021 IDC FutureScape report](#).
- **85%** of workloads will be in the wrong place, impacting performance, security and cost, according to the 2022 Gartner report, [Workload placement in Hybrid IT](#).
- **74%** of IT teams will leverage more than one IT infrastructure in 1-3 years, including a mix of private and public clouds, multiple public clouds, or an on-premises datacenter and a hosted datacenter, according to the [2023 Nutanix Enterprise Cloud Index report](#).

This explosive growth has prompted government IT to consider a mix of public and private cloud and on- and off-premises resources. Operational innovations – such as automation to address IT skills

shortages and identifying the right amalgam of on-premises, public clouds and service providers – must also be prioritized to curtail cost overruns and reduce the dizzy cadence of constant re-evaluation.

Other ongoing challenges involve modernizing on-premises datacenters to comply with data sovereignty mandates and addressing security concerns. Efforts to reduce costs and simplify management through datacenter consolidation also continue to loom.

Platform proliferation is another dilemma facing government IT today. Migrating to the cloud is a multidimensional problem with multiple decision points that can create multiple intertwined feedback loops, with each one requiring various analysis tasks.

Government IT may end up with best-in-class public cloud services, private cloud infrastructure and increasingly, remote or edge computing infrastructure. However, many of these agencies are left scrambling for ways to manage sprawl to meet growing mission demands, implement faster real-time processing, protect data storage, and ensure security governance.

A majority of IT government leaders noted that their biggest challenges are entangled with their public cloud journey, including the cost and complexity of app refactoring, cloud creep that can increase exposure to cyberthreats, and organizational and people challenges.



Government IT Leaders Look for Mavericks to Drive Innovation and Change

[Sherry Walshak](#)
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Ways to Survive and Thrive

The following is a summary of revealing insights recently shared with Nutanix by leaders in government IT that can help you survive and even thrive in these changing times.

The pace of technology innovation and the urgency of delivering an information and decision advantage has prompted a change in strategy for government IT. The old model of defining requirements, building, testing, and deploying solutions takes too long and assumes an ideal end-state that is often not fully known.

Today, government IT transforms ideas into apps to drive improvements and new capabilities that support mission success. This approach involves building, testing and writing requirements as you go. Adjustments are often made before scaling out to deploy a broader solution.

This enables government IT organizations to course-correct during the continuous improvement journey. Course corrections might require moving workloads between clouds, repatriating workloads on-premises or parsing the IT estate between on-premises, service providers, and hyperscalers like AWS and Azure to create a developer-ready infrastructure.

It was noted that undergoing modernization is very much like living in a house while it is being renovated. There is a strong mandate to utilize older, unique resources to minimize costs, while also adopting innovative technology to support mission requirements. Consequently, it is important to embrace change and foster a culture of innovation.

Another change in the status quo that government IT leaders have had to contend with is a significantly shorter planning timeframe. This is caused in part by accelerated rates of change, the availability of a wider range of options, and the volume and frequency of rising demands.

Government IT leaders concurred that collaboration across peers, industries and stakeholders is imperative to gain faster time to resolution for new capabilities. The same insight was shared at a recent AFCEA West conference, where IT leaders from the U.S. Navy discussed adapting U.S. Air Force best practices to accelerate modernization for a specific initiative..

Federal IT leaders also revealed that they often look for mavericks and actively support team members who stand out as mavericks. With an acute understanding of their IT environment, these mavericks are adept at accelerating mission agendas by decisively choosing the best technologies and processes to cultivate innovation and improvement.

Useful Resources

On-ramp to the public cloud and move workloads between them

As government organizations look to easily on-ramp to AWS or Azure, [Nutanix Cloud Clusters \(NC2\)](#) eliminates the need to refactor or re-architect apps, and makes it simple to achieve a hybrid multicloud environment. NC2 provides workload and license portability so IT can easily move apps and workloads between datacenters, on-premises and public clouds.

What is the right mix of hybrid IT?

To determine the right mix across your IT estate, Nutanix offers several TCO analysis tools that are based on thousands of business cases. These analysis tools can help you make well-informed data-driven decisions.

The [NC2 direct-to-cloud tool](#) compares lift and shift options for apps as well as the TCO of the Nutanix public cloud approach. It requires a partner or Nutanix to help – and only takes 15 minutes to complete. Click the above link and find the Select Portal search field. Look for Nutanix or Nutanix Partners and register to obtain a login. Once registered, you'll see the Business Value portal page with select tools – choose the Direct-to-Cloud option.

The Nutanix disaster recovery-as-a-service (DRaaS) [TCO calculator](#) provides a quick and easy way to understand TCO savings and compare on-premises against DRaaS. You can enter key parameters and other pertinent information about your environment to get a personalized report.

Finally, [Nutanix Customer Xperience](#) is our award-winning education, services and support team who offer workshops and services to help government customers where they are, and help them move to the right mix in their IT estate given their unique environments and objectives.

Successful Strategy, Tactics, and Guidance

Although there's no one-size-fits-all strategy across all government organizations, there is some consensus among IT leadership regarding successful approaches and sound guidance.

- The IT perspective has shifted from what can be virtualized to what cannot be virtualized.
- The cloud is simply a tool to support needs like scaling compute and storage up and down as needed as well as delivering new mission-critical capabilities.
- The common goal is to move apps and data over time to meet the need for speed to ensure mission success. Every organization is sensitive to performance and reliability.
- Public clouds are not always less expensive. Many organizations expressed surprise at cloud costs and have moved workloads back on-premises. TCO and business-case analysis can help determine the right mix of on-premises and public clouds to reduce costs and optimize workloads.
- The amount of data will continue to increase exponentially. Planning must include how to predict and solve problems before they arise.
- Government IT is seeking a consistent software-defined platform to support hybrid multicloud operations with a single management plane and an integrated security model.
- Some IT organizations use an approach known as minimally required compliance, which calls for making incremental improvements over time based on rate of change and new demands.



- Consider moving to the public cloud first using a lift-and-shift strategy and then repatriate if costs or other concerns arise.
 - Refactoring and containerization makes apps cloud-native, which can reduce costs and ensure high availability.
 - Know when to containerize apps. They're complex and require special IT skills to manage. There are pros and cons, but the advantages can include cost savings, portability, security, and less downtime.
 - Many government agencies schedule downtime for certain services, but services in a cloud model provide an operational advantage by requiring little or no downtime.
 - SaaS apps are the easiest to deploy but can create challenges, such as finding FedRAMP-compliant solutions.
 - You can accelerate your progress with prehardened (STIG'd out of the box) solutions to reduce time to deploy and ensure security.
- Government IT leaders – especially those whose datacenter leases are ending – were vocal about their search for an on-ramp to AWS and Azure, as well as wanting the ability to move workloads between cloud service providers and back on-premises.
- The adoption of a single public cloud service for capex savings can rapidly morph into an IT optimization project that spans a proliferating number of infrastructure options.
- Interoperability and a unified approach to managing infrastructure, apps and data is critical as complexity carries a higher risk of cyberattacks.
- New IT talent often seeks out web-scale server architectures, such as hyperconverged infrastructure (HCI), that run the latest high-performance apps by applying automation and AI for IT operations (AIOps).

Prioritizing and Categorizing Apps and Data

Many government IT leaders spoke of the pressure to move everything to the cloud, despite the fact that some apps are monolithic and simply not good in the cloud. They reminded colleagues that it is always more advantageous to purpose-build apps for the cloud instead of moving existing on-premises apps to the cloud.

Many organizations have adopted a tiering system that categorizes their apps and data for migration to the cloud. A three-tier approach enables resources to be efficiently prioritized and tiering strategies should be reviewed annually to reclassify apps as needed. One government IT leader uses the following color-coded tiering approach:

Green: These apps get top priority to move to the cloud, given the state of the app and the criticality to the agency. It is vital to monitor cloud creep and costs to determine whether these apps should be repatriated back on-premises.

Yellow: These apps require refactoring and replatforming before moving to the cloud. Consequently, it is important to consider cost, complexity and time to refactor apps and evaluate other options.

Red: These apps should not reside in the public cloud due to security, cost and other considerations.

IT government leaders agreed that tiering apps to prioritize refactoring and placement is an ongoing effort, but important to resource allocation and support benefits and service delivery as well as the constituent experience.

Insights on Zero Trust and Security

Zero-trust architecture (ZTA) can prevent unauthorized access to data and services and requires highly granular access controls between users, systems, data, and assets that change over time. ZTA is highlighted in the [Executive Order on Improving the Nation's Cybersecurity](#) and in documentation from CISA and U.S. Office of Management and Budget.

IT government officials weighed in on zero trust with these security observations:

- Government organizations are seeking solutions with built-in security.
- New strategic plans harmonize the end-user experience with security.
- Industry partnerships are key to addressing new requests to ensure all solutions are secure from a zero-trust perspective.
- It is essential to establish bidirectional agreements with selected organizations and stakeholders to ensure effective sharing of threats and deterrence and mitigation strategies.
- [R-Score](#) can be a useful resource to evaluate your security vulnerability.
- The cloud enables you to inherit the cybersecurity access controls, but it is important to know what they are and assess whether they are secure for your specific mission.

Next Steps

Learn more at [nutanix.com/solutions/federal](https://www.nutanix.com/solutions/federal)

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