Technology Trend Topic: Cloud Computing

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ITC Vehicles: MAS SIN 518210C (formerly Cloud SIN 132-40), 8(a) STARS II, VETS 2, Alliant 2, Enterprise Infrastructure Solutions (EIS)
Vehicles to Watch: 8(a) STARS III
Non-GSA: *NASA Solutions for Enterprise-Wide Procurement (SEWP), NIH Chief Information Officer: Commodities and Solutions (CIO-CS), Solutions and Partners 3 (CIO-SP3), & Partners 3 (CIO-SP3) Small Business*

Overview

Cloud computing is the sharing of resources, software, and information through the Internet. Information and data are stored on physical and virtual servers, which are maintained and controlled by a cloud service provider (CSP). **- GSA's Cloud Information Center**

> **The Cloud Information Center (CIC) is a collaborative tool that explains best practices and solutions around cloud topics like security, technical capabilities, and implementation. The CIC also provides federal buyers with an actively updated list of FedRAMP-authorized cloud products and professional services. And, if you are new to the cloud computing space, there is an introduction that outlines what cloud actually is, why it's an important tool for meeting mission-critical needs, how to deploy it, and what service models are available to agencies.** - Bill Zielinski

NIST-Identified Cloud Computing Advantages:

- Increased resource flexibility (technology, personnel, budget)
- Increased efficiency via shared computing resources and ability to scale up or down instantly
- Enhanced reliability/security through FedRAMP-certified CSPs
- Reduced on-premises footprint, reducing facility costs
- Compliance with federal mandates

> **To keep up with the country's current pace of innovation, the updated Cloud Smart Policy embraces best practices from both the federal government and private sector, ensuring agencies have capability to leverage leading solutions to better serve agency mission, drive improved citizen services and increase cyber security.** - Suzette Kent, Federal Chief Information Officer

Market Trends

NEAR TERM

Since 2015, the Centers for Medicare and Medicaid Services, the Department of Veterans Affairs, and the U.S. Air Force have been the top cloud computing spenders. **-Bloomberg Government**

The worldwide public cloud services market is forecast to grow 17% in 2020, to total $266.4 billion. **- Gartner**

The most successful cloud-adopting organizations appoint or hire a cloud architect and develop a cloud center of excellence (CCOE). **- Gartner**

LONG TERM

Multicloud strategies will reduce vendor dependency for two-thirds of organizations through 2024. **- Gartner**

The U.S. Department of Labor's Bureau of Labor Statistics reports that cloud computing is a major factor in technology occupation growth, projected to expand 13% from 2016-2026. **- OMB's Cloud Smart Policy**

Use Cases/Applications

> **All General Services Administration (GSA) employees use the cloud daily, whether they know it or not. While the GSA IT shop reaps the benefits of cloud in greater agility and hands-off management of compute infrastructure, users hardly notice the difference.** -Skip Jentsch

The Veterans Affairs Digital Transformation Center (DTC) leverages cloud technology to improve service delivery to Veterans through improved IT products and services.

The National Oceanic and Atmospheric Administration (NOAA) utilizes cloud computing to make large data sets (such as water reports, climate projections, and weather warnings) readily available to the public.

For nearly a decade, **the U.S. Agency for International Development (USAID)** has used the cloud to host and scale its IT operations at home and abroad. USAID can now access geographically separated data storage for disaster recovery purposes with the click of a mouse.

Risks/Challenges/Myths

According to the Cloud Information Center (CIC):

- **One of the biggest challenges** that agencies face is cloud procurement. This is because the government is unable to take full advantage of the cloud procurement models available in the commercial marketplace. Historically, agencies had to over-buy and over-obligate to prevent shortages in funding and/or services
- **Vendor or Technology Lock-In:** Once an application is running on one vendor's cloud, it may be labor intensive to move it to another vendor's cloud. Though contracts are generally severable at any time, IT shops should take the same precautions against technology lock-in as they would with an on-premises system.
- **Security in the cloud** is a concern for all agencies. GSA's FedRAMP program can be leveraged to help ensure the confidentiality, availability, and integrity of government data in the cloud. Data hosted in the cloud by a large CSP may actually be more secure than if it was hosted at a government agency that does not have the budget to secure its sensitive data.
- **Cloud Service Providers (CSPs) often do not deal directly** with any customer, preferring to let third party resellers of their cloud services do the contracting instead. Agencies need to specify in their contracts that cloud billing and utilization reports come from the CSP directly and not from the reseller. This leads to bills with greater detail and transparency.
- **Migration risks** are present in cloud transitions just like any other migration project. Strict project management controls need to be in place at every stage of the cloud lifecycle, from gathering requirements to deployment to maintenance and operations to retirement.

What You Should Read NOW

1. GSA's Cloud Information Center (CIC)
2. OMB's Cloud Smart Policy

Bill Zielinski's Blog Posts:

3. Cloud Empowerment at USAID_Oct 2019
4. NOAA Forecast: Clear Skies for Cloud Migration_June 2019

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