

Multi-Cloud and Hybrid Cloud Adoption in Government

Summary of Roundtable, hosted by ATARC in June 2022

WHITE PAPER

Hybrid and multi-cloud initiatives in the public sector occur through data center consolidation, cloud initiatives, or expanding vendor pools and business opportunities. Yet, multi-cloud adoption is fairly complex beyond expanding access to cloud providers contractually.

The Advanced Technology Academic Research Center (ATARC) recently hosted a Roundtable to discuss the state of cloud adoption across the Federal Government and the challenges and successes of moving from a "commodity purchasing" to a "people and process" mindset.

Single ● Multi ● Hybrid

- Single Cloud: All cloud services and storage with a single cloud provider
- Multi-Cloud: Multiple public cloud services used from several cloud providers
- Hybrid Cloud: At least one private cloud with one or more public cloud services

Current State of the Cloud

Roundtable participants shared the current state of cloud adoption within their organizations, and as might be expected, all were at different stages of deployment. While some agencies already have robust hybrid cloud environments, others haven't even moved to the cloud.

While, at first glance, it might seem that these agencies are just falling behind the rest of the Federal Government, several participants noted some challenges that slow or prevent cloud adoption altogether.

Some agencies are dealing with applications written in languages that are decades old, like FORTRAN (1950s) or

COBOL (1960s). Others found that the amount of data they're working with was enough to make a single cloud deployment challenging – and haven't even considered multi-cloud or hybrid deployments yet.

Many found that "misalignment" between IT and the administrative sides of an agency made it challenging to meet objectives and goals when it came to the cloud. Taxpayer-funding adds obvious budgetary issues.

Software Factories

While some might look at the technological challenges of hybrid and multi-cloud deployments as a barrier to moving forward, experts find that people, culture, and processes are often the reasons why organizations run into issues.

Software Factory Defined

In a "software factory," development teams use a repeatable, well-defined path to create and update software. Essential elements of a software factory include releasing software consistently and quickly, continuous process refinement, and utilizing cloud native technologies to remove infrastructure toil through automation and self-service.

Several participants agreed on the success of employing the "software factory" concept.

Development occurs faster because best practices are found through the process, and less time is spent on repetitive yet necessary coding tasks. Employees are also collaborating far more on application development, accelerating the pace of workforce reskilling and upskilling to next-generation cloud technologies that are the future of software development.

Cloud Challenges

During the conversation, the challenges participants' agencies experienced often fell into one or more of three general areas: capacity, cost, and competence.

Capacity

Almost every participant noted that their agency faced some capacity concern, whether from an infrastructure or personnel standpoint. You must have the staffing necessary to not only migrate but manage your cloud infrastructure.

Cost

Participants also talked about cost. Agency IT departments are not the people that need to be sold on a cloud solution. The appropriations process is where these projects either live or die, participants agreed.

Competence

Another issue across not only the Federal Government but the broader workforce is finding qualified workers. Participants noted that they weren't immune to the labor market pressures that the private sector is experiencing.

product being the apps and services our agencies use daily. Others stressed agency IT departments should not try to do it all themselves and lean heavily on partners.

Shift Emphasis from Cost to Value

There is no escaping the cost side of things with leadership. Participants stressed that you must speak their language but focus more on overall value. Moving the server farm offsite saves the agency in HVAC costs to keep that room cool, for example. Explaining the value of a CSP to appropriators will also help them better understand why it's essential to both IT and the agency's mission.

Find the Right People

Agencies will need to hire appropriately and be prepared to compete with the private sector for the best talent – even if that means paying more. Where necessary, turn to partners to help you meet objectives. One participant even reminded others of the fickle nature of the appropriations process – you might have money to do it one year and none the next.

Streamline Security Authorization Processes

The Federal Government does have quite a few cybersecurity mandates on the way, most notably the Zero Trust memos. Participants agreed that security needs to run parallel to development rather than right before deployment.

Government agencies are already required to build accessibility into their applications per the ADA. The same should be done with security, with the requirements identified correctly at the beginning. Some agencies hire security SMEs at the beginning to get an outside perspective on what they're looking to do.

With security requirements correctly identified and purpose and functional use defined at the start, participants found that they didn't encounter issues with ATO compliance.

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Next Steps for Gov Cloud Adoption

Leadership:	Driving adoption forward
Evangelism:	Selling leadership on the cloud concept by showing its alignment with the mission
Education:	Staying current on CSP options, strengths and weaknesses

Cloud Solutions

Participants next looked for potential solutions for Federal agencies with the challenges laid out.

Change Development and Lean on Partners

Participants recommended moving from a project focus to a product focus, making goals more easily attainable – the