



How Open Source Helps Government with Hybrid Cloud Challenges

Government organizations are increasingly adopting multi-cloud environments. A recent nationwide Center for Digital Government/IBM survey¹ found 56 percent of responding state and local government agencies are using multiple clouds, with some adopting as many as 10 different types of cloud environments.

While multi-cloud environments provide IT leaders with potential benefits such as the ability to stand up IT infrastructure quickly and improve security, they can also increase complexities.

With IBM's acquisition of Red Hat, the two companies are now committed to advancing hybrid and multi-cloud capabilities via an open source software approach. Ian Baker, Vice President for Cloud at IBM, and Dave Egts, Chief Technologist, Public Sector at Red Hat, recently discussed some of the challenges of moving to a multi-cloud environment and how a well-planned, open source approach can improve an agency's chances of success.

1. Formulate a strategy

To be successful with multi-cloud, an agency should formulate a comprehensive strategy that considers three key areas:

- **The legacy portfolio.** Prioritize legacy systems to determine which ones you'll modernize and which ones you'll retire. For example, you may have a legacy application that will phase out over time, so it may not make sense to modernize it.
- **Your goals.** What do you want to accomplish by moving to multi-cloud? What new capabilities do you want to offer citizens? What services do citizens want?
- **Change management.** How will you drive organizational and process change within the organization to complement the technology changes you plan to implement?

2. Determine your path

Once you have an overall strategy in place, determine which path you'll take to get there. The three most common strategies for government cloud migration are:

- **Perform a "lift and shift."** Move an existing application from a virtualized infrastructure in a private data center to the cloud.
- **Augment with new layers.** Use application programming interfaces (APIs) and other technologies to make the existing application and data accessible to new applications.
- **Rewrite.** Plan and prioritize as if developing a new application from scratch to make it cloud native.

3. Discover how open source fits into your plan

For government agencies to perform more like their commercial counterparts, they need to consider data access, consolidation and compatibility. Most agencies have access to a wealth of public and private data from a variety of sources, including legacy systems, but making it all work together isn't easy. An open source platform allows an agency to combine data from multiple environments and architectures so personnel can make more informed decisions that drive better outcomes and enhance citizen services.

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Open source also enables organizations to more easily leverage technologies like APIs, microservices and containers to enhance functionality and improve agility. In an environment where today's hot technology can quickly become tomorrow's legacy platform, agility helps an agency stay current even if it lacks the talent, skills or tools to change rapidly under normal circumstances.

4. Address cultural change

Technology is the easy part of a cloud migration. The more difficult element is addressing cultural change within the organization.

"Agencies should look at their organizational structure and start to initiate new ways of working in a manner that can be replicated throughout the organization," says Baker.

That includes developing a culture based on inclusivity and sharing.

"Instead of being the chess master, you become more of a gardener," says Egts. "Create a culture that allows people to understand the big picture, then empowers them to make decisions."

"Cloud smart means let's be smart and deliberate about cloud and take a measured approach."

Dave Egts, Chief Technologist, Public Sector, Red Hat

5. Focus on "cloud smart" instead of "cloud first"

Over the last few years, many agencies have adopted a "cloud first" strategy. While cloud first can effectively encourage cloud migration, Baker and Egts recommend agencies adopt a "cloud smart" mantra instead.

"Maybe it doesn't make sense to move our legacy ERP system into the public cloud," says Egts. "Cloud smart

means let's be smart and deliberate about cloud and take a measured approach."

An agile, open source approach can help here, too. For example, using containers, an agency can develop and implement an application behind its firewall in a private cloud. Once the application is ready, the agency can move that application to the public cloud. Because employees are already familiar with the application, less time is needed to retrain and reskill them. In that way, the agency can cost-effectively accelerate its cloud adoption.

6. Don't go it alone

When adopting a multi-cloud environment, Baker and Egts advise agencies seek help from vendors versed in enterprise open source.

"Talk with vendors who are driving the use of enterprise open source to improve government and adoption of multi-cloud," says Egts. "The more open the company, the more they have a vested interest to deliver value because if they don't, they can be replaced very quickly."

Moving Forward

Baker and Egts agree they have witnessed broader technological changes in the public sector over the last 12 to 18 months, including a bigger push toward multi-cloud and open source strategies.

"Technology is becoming even more relevant to government than it has been in the past," says Baker. "We're seeing agencies start to take these technologies more seriously and use them to make major impacts."

With technologies like artificial intelligence, blockchain and analytics becoming easier to use and more accessible, government agencies will have increasing opportunities to benefit citizens.

"Government leaders want to do what's best for citizens," says Baker. "Enabling them to deploy new technologies and capabilities in a multi-cloud, open platform allows them to accomplish more, and to do that faster and at a lower cost."

1. Center for Digital Government survey of 128 IT professionals at all levels in state and local government nationwide, November 2018.

This session is part of the IBM Government Cloud Virtual Summit, a free, online event featuring 20 sessions with insightful keynotes, illustrative case studies and deep dives into job-critical topics for government leaders. To view any of these sessions, visit www.govtech.com/ibmvirtualsummit

