EXECUTIVE BRIEF

EIGHT BEST PRACTICES FOR PUBLIC SECTOR CLOUD ADOPTION

Learn more about federal cloud adoption in this Red Hat webinar, "Open Hybrid Cloud: Accelerating Public Sector Innovation" at fedinsider.com/portfolio-items/open-hybrid-cloud-accelerating-public-sector-innovation

EXECUTIVE SUMMARY

Federal agencies are increasingly turning to cloud technologies to address their software and infrastructure needs, and they are also launching new applications using agile software methods, cloud-based platforms, and containers. Among government agencies:

- 93% run applications on or are experimenting with Infrastructure-as-a-Service (IaaS).[1]
- 72% expect to use Platform-as-a-Service (PaaS) in their organizations within the next five years.[2]
- 93% expect to make new investments in DevOps technologies within the next two years.[3]
- 71% are using or anticipate using containers for cloud applications.[4]

Federal agencies that want the resource efficiencies, scalability, automation, self-provisioning, and agile development capabilities of the cloud should use an open hybrid cloud approach. This aggregates on-premise datacenters and cloud-hosted environments with unified, self-service management that supports continuous innovation and improves service delivery. With a seamless architecture, open hybrid cloud models deliver improved flexibility and innovation compared to traditional public cloud or on-premise datacenter options.

BUILD A PATH TO CLOUD ADOPTION

During the Red Hat® briefing, "Open Hybrid Cloud: Closing the Gap Between Mission and IT," federal IT and industry executives discussed eight strategies, challenges, and best practices federal agencies can employ to adopt cloud solutions.

1. FOCUS ON REDUCING TOTAL COST OF OWNERSHIP (TCO)

"If you're only addressing the cost of compute, you're missing a huge part of the opportunity," said Adam Clater, chief cloud architect for North America public sector at Red Hat.

Achieving overall cost reduction, however, requires pervasive IT provisioning automation across networks, infrastructure, and storage. "You've got to standardize those technology stacks, consolidate resources, and pool your use," said Clater.

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[1] *Ben Kepes, "New Stats From The State of Cloud Report," Forbes (March 2015)*

[2] *Louis Columbus, "North Bridge Venture Partners Future Of Cloud Computing Survey: SaaS Still The Dominant Cloud Platform," Forbes (June 2013)*

[3] *DC DevOps Thought Leadership Survey, IDC (May 2015)*

[4] *":Maximize Container Benefits with a Top-Down Approach," [a commissioned study conducted by Forrester Consulting on behalf of Red Hat] (January 2015)*

Red Hat brings open hybrid cloud together by offering a expansive, modular solution portfolio, from virtualization to a full hybrid cloud solution.

2. EMPHASIZE AGILITY OVER PERFECTION

"You're not going to get your cloud strategy right the first time out and that's OK," said Clater.

Jim Tunnessen, CTO of the Department of Agriculture's Food Safety and Inspection Service, is following this advice in his cloud approach. "You need to fail fast and learn from it and move on," said Tunnessen. "[But] we're looking more at minimally viable products and removing that ... fear of failure."

3. EMBED SECURITY IN YOUR CLOUD PLANNING FROM THE BEGINNING

Cloud migration teams should establish a point-of-contact on their IT security team who is involved in all cloud projects from the beginning—including architectural planning and decision making.

"If you get them involved early, they're much less likely to give you a 'no' answer. If you build it first and then come to them and say, 'Now approve it,' that approval is not going to happen," said Kevin Jones, a cloud solutions architect for Red Hat.

4. MIGRATE APPLICATIONS IN STAGES

Start with smaller migrations where you can achieve success, then repeat. Agencies can begin by migrating apps that are not connected to sensitive data and are highly interactive.

"A functional 30% is way better than a non-functional 100%," said Clater. "Before you know it, you have an entire team of DevOps doing great things. Success breeds success."

5. EMPLOY AUTOMATION AND STANDARDIZATION

Take advantage of automation and standardization to ease your cloud transition.

"If you automate your way into the cloud, you can automate your way across to another cloud and start making spot market decisions about what cloud you want to be in based on what you're trying to do," said Clater.

Another benefit of this tip is cost savings. "The simple fact is you don't need all these environments up all the time," said Tunnessen. "I don't need a development environment, a test environment, a pre-production environment, and a production environment up all the time. At the push of a button, I can turn it [on or off] when I need to. I can get it so that I don't even have to push the button. There's a huge cost reduction by using the technologies out there to enable this."

6. AVOID VENDOR LOCK-IN

Cloud migrations need an effective exit strategy—before you jump in.

"If you [start using] proprietary capabilities and infrastructure that's not standardized and provided in any other cloud provider, you actually can't move your applications even if you wanted to," said Clater. "You have to go rebuild those applications in the other cloud services first and then hope that you can move your application over."

7. COLLECTIVELY DETERMINE IT CHARGEBACK POLICIES

One of the biggest challenges of cloud migration is accurately tracking, measuring, pricing, and governing the use of on-premise IT resources.

"What I found that works well is having regular discussions that involve business, finance, and budget allocation folks as well as those who consume those resources," said Rob Washburn, a senior cloud domain architect at Red Hat.

Some agencies may start by adopting a "show-back" strategy. This involves tracking and measuring IT resource usage and attaching monetary values to that use – but not charging customers. Jose Simonelli, a Red Hat consultant, said this method not only helps clients become more aware of their resource use, but it also helps IT teams understand how to better plan capacity. Governance is a key component of this method as well, especially for public clouds.

"If you do not govern that use and rein that in," said Jones, "You can end up with a pretty severe bill at the end of the month that you weren't accounting for."

8. PROMOTE INNOVATION WITH OPEN SOURCE TECHNOLOGIES

Most innovation – including the most effective DevOps tools – comes from open source communities. Many of these solutions help agencies cut out repetitive tasks in software development.

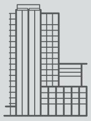
"There's reusable code out there [that] greatly shortens the development cycle," said Tunnessen.

In addition, open source solutions are vetted by global communities, leading to better software, according to Ashley Mahan, FedRAMP evangelist at the General Services Administration (GSA).

MEET GROWING DEMAND WITH CLOUD SOLUTIONS

As people become more familiar with technology in their personal lives, federal CIOs and IT teams are under greater pressure to keep up with rising end-user expectations. "Every person in your organization has a better IT infrastructure at home than you're providing as a CIO," said Clater. "That's the level of expectation they now have of you as your IT consumer. We have to deliver these capabilities and new applications much, much faster."

Whether using DevOps and agile approaches to develop software, launching new applications as microservices in containerized environments, or using IT automation, federal agencies are turning to open hybrid cloud approaches to meet those expectations.



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