

MAKING THE TRANSITION TO THE CLOUD

A roadmap for state and local governments as they consider options outside their own IT infrastructure for data and applications

Executive Summary

Many state and local government IT leaders face significant challenges as they operate aging technology infrastructures in an era of increasing user demands. Government employees and citizens expect agencies to provide technology similar to what they encounter in the private sector, while staffing, budgeting and data management issues may limit an agency's ability to provide those services. As CIOs and other IT decision-makers strive to meet ever-increasing demands, they are often choosing to deploy cloud-based solutions to help them provide modern, high-quality IT services.

Cloud-based solutions promise to bring agility, innovation and cost-effectiveness to information technology. However, they also present serious obstacles for state and local governments. When deploying IT services, government agencies place a high priority on security and reliability, which are less understood factors for many IT leaders considering cloud deployment. Agency IT staff may also lack the skills and experience required to implement locally constructed cloud services.

Fortunately, many state and local government agencies have found ways to address these obstacles and move to the cloud. They serve as role models for deploying cloud solutions in a government environment.

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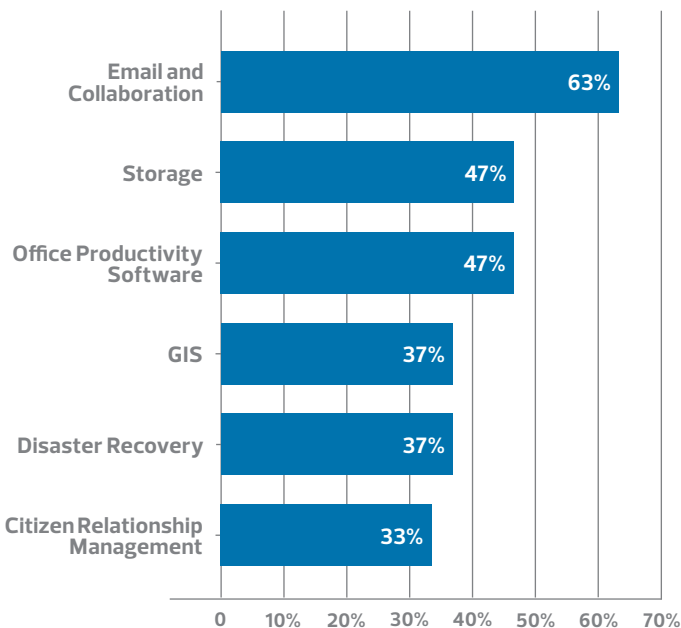
The Situation

Maintaining an effective and secure on-premises IT infrastructure is challenging. The growth of data and mobility requirements stresses aging infrastructures. This strain creates an unsustainable situation for government IT leaders, as states often lack the funds to expand infrastructures to meet the emerging demands of end users.

At the same time, government agencies often struggle to attract and retain qualified IT staff. Technologists with specialized experience in high-demand areas, such as networking, security and database administration, command high salaries in the private sector. The candidates most qualified for open positions often will not accept the salary and benefits offered by government agencies. And as existing staff members develop high-demand skills, they often leave the government for more lucrative positions in the private sector.

These budget and staffing challenges drive government IT leaders to consider new and innovative approaches to computing. Existing on-premises IT infrastructure often cannot support the rise of new consumer- and data-oriented services. Yet, it is cost-prohibitive to expand the existing infrastructure to meet emerging data needs and to sustain the staff necessary to manage it. For these reasons, many state and local government agencies want to get out of the data center business altogether. Cloud services represent a smart option for achieving that goal.

SERVICES THAT STATES HAVE MIGRATED OR PLAN TO MIGRATE TO THE CLOUD



SOURCE: NASCIO, "2014 State CIO Survey," September 2014

73%

The percentage of state CIOs who say their states already have some cloud applications and are considering others

SOURCE: NASCIO, "2014 State CIO Survey," September 2014

The Solution: Cloud Computing

IT leaders in many types of state and local agencies find themselves turning to the cloud. In a survey, the [National Association of State CIOs \(NASCIO\) found](#) that cloud services ranked second on a list of CIO priorities for 2015, just behind information security issues. That same survey found that 63 percent of state CIOs have already migrated or are in the process of migrating email and collaboration services to the cloud.

Cloud-based solutions promise to help government agencies overcome the limitations of on-premises infrastructure by leveraging the economies of scale found in sharing infrastructure with many other customers. Cloud service providers operate massive data centers that serve millions of customers globally and can build and operate their systems at unprecedented scale. From turnkey Software as a Service (SaaS) solutions to the technology building blocks of Infrastructure as a Service (IaaS), cloud providers reduce the burden of IT on government agencies.

As government agencies begin cloud migration, they typically find that SaaS solutions, as an alternative to enterprise software purchases, offer the greatest early value because of the ease of implementation and degree of cost savings. Email storage and Voice over IP (VoIP) telephony are popular IaaS solutions for the same reasons.

Both of these categories contain mature technology solutions and offer state and local governments a low-risk option to get comfortable with the cloud. Other common migration targets include storage, geographical information systems, backup and disaster recovery, and web services.

Many state and local CIOs see the value of migrating to cloud services and want to embrace the change as quickly as their business culture and regulatory requirements allow.

Cloud Obstacles

The deployment of cloud-based solutions presents challenges for state and local governments, the biggest of which include securing sensitive data and training IT staff.

For government agencies, information security is critical. State and local governments handle a wide variety of sensitive information about citizens, such as health records collected by government

providers and financial information collected on tax returns. As government IT decision-makers consider deploying cloud-based solutions, they must ensure that they can maintain at least the same degree of security control in the cloud as they do in existing on-premises deployments.

The federal government addressed this problem with the creation of the Federal Risk and Authorization Management Program (FedRAMP). This program standardizes security assessments across government agencies and then certifies cloud service providers who meet those standards. While state and local government agencies have no obligation to follow the FedRAMP standards, many find it a convenient shortcut to certifying solutions for their own use. Jack Nichols, a cloud client executive for CDW, calls FedRAMP "a programmatic approach to security." According to Nichols, many state and local IT officials feel that "if it's secure enough to meet FedRAMP security requirements, it's secure enough for us."

Another major obstacle facing state and local governments as they turn to the cloud is a lack of experienced IT staff. Cloud technology is fairly new, and technologists with strong cloud backgrounds are in demand. Rather than hiring new staff, government IT leaders may wish to turn to trusted partners to assist them with cloud migration. With this approach, agencies can benefit from a partner's experience while agency IT staff hone the skills necessary to deploy and support cloud services as they continue to operate the legacy IT infrastructure.

How to Get Started in the Cloud

Cloud-based solutions promise efficiency and cost savings, but each state and local agency should consider its own unique requirements when planning to migrate. The array of cloud services appropriate for one agency may not be a good fit for another. Each agency must consider its needs, limitations and risk tolerance.

According to Nichols, agencies should start by evaluating their existing business models. "It's fairly easy to determine the costs of

35%

The percentage of IT services today that are delivered totally or partially by the cloud

SOURCE: CDW, "[Cloud 401 Report](#)," February 2015

cloud services," he says, "but a lot of agencies don't know what it costs them to deliver the service in-house. To evaluate the cloud, you need to know your own costs. That's where government agencies struggle the most."

Once an agency has the information needed to develop a cloud business model, it can outline its cloud strategy. Many agencies begin by conducting a handful of pilot migrations to build confidence in the cloud model. These pilots often take advantage of proven cloud service models, such as email/collaboration and VoIP telephony. After a few pilots, an IT leader can articulate a long-term strategy appropriate for the agency.

In an aggressive example of setting cloud strategy, California adopted a "[cloud first](#)" policy, which requires state agencies to evaluate cloud computing options for all new IT projects. Whenever feasible, agencies must use the standard cloud services offered through the state Office of Technology Services. If the state does not offer a centralized cloud service, the state administrative manual says that "Agencies/state entities must utilize other commercially available Software as a Service (SaaS), Platform as a Service (PaaS), or Infrastructure as a Service (IaaS) cloud service models when feasible and cost-effective."

Other states seek to create their own cloud computing infrastructures by pooling the computing needs of state and local agencies. For example, the [Massachusetts Open Cloud \(MOC\)](#)

CLOUD BENEFITS

Cloud computing holds special appeal for state and local governments because it transfers much of the burden of operating technology infrastructure from government employees to service providers. Cloud deployment provides four key benefits:

- **Access to the latest computing technology:** For example, with Software as a Service, application upgrades become a thing of the past. Service providers continuously update software on the back end with minimal effect on agency staff.
- **Extended IT operations:** State and local agencies typically lack the resources required to operate 24/7 help desks, leaving users waiting until business hours for assistance. Cloud service providers often provide around-the-clock support, maximizing worker productivity.
- **Reduced costs:** Cloud service providers achieve economies of scale that are not typically possible in a government data center. The cloud delivery model also allows agencies to budget for IT services as an operational expenditure, rather than requiring a substantial upfront investment in capital expenditures for infrastructure.
- **Driven innovation:** Cloud-based services not only provide staff with tools to increase productivity, but also allow IT workers to focus on mission-oriented initiatives rather than mundane tasks involving maintenance of the technology infrastructure.

These benefits capture the promise of cloud computing to revolutionize state and local IT operations.



initiative brings together a coalition of technology companies, including Cisco Systems, Intel, Red Hat and Juniper Networks, as they use state funding to build infrastructure and platform services for customer use. MOC may serve as a model for future government cloud deployments.

The right cloud deployment for a government agency depends on a variety of factors, including budgetary restrictions, business requirements, risk tolerance and the capabilities of cloud service providers.

CDW-G: A Cloud Partner That Gets IT

CDW-G solution providers serve as cloud partners to help state and local agencies get to the cloud, integrate solutions seamlessly and, when requested, manage day-to-day operations. CDW-G also provides risk management methodologies to secure data, maximize continuity of operations and set disaster recovery plans.

CDW-G account managers and engineers assist customers at every phase as they select and implement the cloud technology they need. CDW-G takes a comprehensive approach to identifying and meeting the needs of every customer. Each engagement includes five phases designed to help clients achieve security objectives in an efficient, effective manner. These phases include:

- An initial discovery session to understand goals, requirements and budget

PHILADELPHIA WANTS 50 PERCENT OF I.T. ASSETS IN THE CLOUD BY 2016

Adel Ebeid, Philadelphia's chief innovation officer, holds an aggressive vision for the future of IT in the city. Promoting the city's "cloud first" strategy, Ebeid believes that Philadelphia can have half of its IT services in the cloud by the end of 2016.

What does Philadelphia's cloud strategy involve? "Every RFP that goes out, we ask for a cloud-first solution," Ebeid states. "If there isn't one, then we ask for a meaningful managed-services arrangement. If there isn't one, then we figure out how to bring it into a private cloud."

Philadelphia's strategy is not just talk. Over the past three years, the city has already achieved more than half of this goal, moving 30 percent of its services into the cloud as of February 2015.

- An assessment review of the existing environment and definition of project requirements
- Detailed vendor evaluations, recommendations, future environment design and proof of concept
- Procurement, configuration and deployment of the final solution
- 24/7 telephone support and ongoing product lifecycle support



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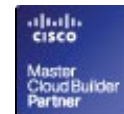
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Even as individuals and organizations realize the potential agility and cost-savings benefits of cloud computing, concerns about security and availability of clouds persist. Gain confidence in your cloud with protection from Symantec™. Symantec delivers the path to a protected cloud.

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To learn more about how CDW-G's cloud computing solutions can help deliver the perfect mix of flexibility, scalability and innovation, contact a CDW-G account manager, call **800.808.4239** or visit cdwg.com/cloud.

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