

Federal Agencies and the Actifio Cloud Advantage

- **Intelligent data protection** with virtual access for constrained budgets
- **Versatile, simple, scalable data management** and Continuity of Operations
- **Data migration** in a secure and radically simple solution
- **Accelerated application development** through Virtual Data access
- **Support for Software as a Service** (SaaS) implementations (Backup/DR/Migration)

Cloud Mobility—Actifio Simplifies Data Protection and Movement to and from the Cloud

Federal government IT is moving aggressively toward a cloud delivery model. With two-thirds of agencies now using some level of cloud computing, Infrastructure as a Service (IaaS) has led to large savings in storage and compute, and Software as a Service (SaaS) is becoming a dominant application model.

Agencies are looking to increase the resiliency, agility, and control of vital application data while reducing the cost, time, and complexity necessary to manage it. Doing so means overcoming a complicated reality inside agencies still wrestling with a tangle of legacy infrastructure. As cloud delivery models gain favor, the move toward cloud has become a steady process. It's a progression of individual applications, each deployed according to their unique requirements.

While the particulars will differ, the movement of data to support integrated cloud-based applications will challenge every agency in the years to come. And for every agency the change objectives will be the same: achieve operational efficiency, scalability, convenience and budgetary control in transition to the cloud.

Orchestrating that change will demand a new data management model that's infrastructure-agnostic and application-centric. It will take a new generation of technology that virtualizes data just as we've virtualized compute and networks. It will require a new approach to managing the complete range of enterprise use cases, optimized for the full lifecycle of far-flung copies, and not just the daily torrent of production originals.

It will require Copy Data Virtualization. It will require Actifio.

Desired Outcomes

- Simple, scalable, versatile IT infrastructure
- Flexible data mobility
- Budgetary controls and variable cost options
- Enhanced IT for strategic mission support

Continuity of Operations and Data Control: Every government function will use all available means to prevent disruptions, to backup data and demonstrate resiliency. Accomplishing the mission depends upon critical operations always up, always available at committed levels of service. Cloud adoption offers the innovation potential to move beyond resiliency constraints of legacy systems. But it requires a certainty that all data is secure and carefully controlled.

Budget control: The pressures of budget constraints are a constant factor for Government IT. Guidance sets out areas for cost reductions and productivity improvements. With the introduction of specific cloud initiative categories in the Capital Planning Guidance, Agency IT Investment Portfolios will need to reflect cloud spending as well as cloud alternatives being considered for major IT investments. Cloud market options can help manage fiscal responsibility while achieving desired Agency outcomes. For example, competitors in the marketplace such as Amazon Web Services (AWS) have forced the costs of storage to near zero over the past five years.

Cloud Technology Challenges

Agencies are significantly challenged to manage impacts of data growth across physical, virtual and cloud systems. Production data growth has triggered parallel waves of growth in copy data for backup, development, test, QA, and analytics—all needing management, and control.

Minimal disruption is a priority for any cloud deployment and technical challenges become a particular consideration. Factors range from available bandwidth to speed of implementation to practical migration of large databases, and the technical challenges of DR. Agencies also need to consider regulations and geographic constraints on data placement. The choice of provider may have data security and audit implications. Then there are challenges of transitioning away from legacy systems and mindsets.

Managing expectations—Cloud computing presents the promise of substantial operational advantage, but it isn't a universal remedy. Successful cloud integration into existing IT operations is a technical challenge that demands realistic expectations along with careful planning, time, and expertise. CIOs may be challenged to displace traditional IT thinking and organizationally embrace cloud as a transformational opportunity.

WHY ACTIFIO FOR CLOUD?

Actifio decouples data from infrastructure to deliver accelerated resiliency and agility benefits. Data is virtualized and made seamlessly available across the IT spectrum from traditional data centers to the private or public cloud, hybrid cloud or SaaS structures. Cost and complexity are reduced through capabilities that capture data, manage a single physical copy and make unlimited virtual copies securely available for instant access anywhere. Actifio provides a simple means to function across application stacks, platforms, operating systems, virtual environments and private or public cloud structures. Finely tuned resiliency controls are set per application with precise recovery and retention policies. Actifio enables flexible cloud options that can move individual workloads or migrate full applications to and from the cloud.

Actifio dramatically accelerates Application Development providing a data management solution supporting DevOps and Test Data Management. Results are measured in minutes, not weeks. Data is seamlessly moved and managed across central, remote and cloud environments, removing the limits of location-based application design. Improved application development quality, performance, and speed are achieved through an Actifio-enabled agile methodology. Data is immediately current and available. Self-service is easily enabled. Workflow and test times are accelerated, and storage requirements reduced.

It's a radically simple approach to data management in the cloud.

Data Security and Control—Data must be protected at rest or in motion. Secure internal systems, secure networks and secure cloud environments are required to keep sensitive data under agency control. Reliable service levels need to align with application criticality, performance, and budgets.

Legacy Infrastructure—For many agencies, shifting away from the costs, operation, and management of legacy infrastructure is a primary cloud motivation. The technical challenge often becomes managing the transition and integration of a service spectrum spread across internal and external resources.

Speed and efficiency—Operations demand responsive data access that enables accelerated application development, faster testing, and user acceptance. Actifio enables well-designed cloud deployments that introduce self-service technology and creates more development output, improved productivity and improved time-to-impact analytics intelligence.

As the cloud transforms operations, it has the potential to help IT reshape possibilities, accelerate delivery and improve mission outcomes. Many traditional IT operations are using internal cloud models to create service catalogs aligned with the mission objectives. They are also partnering selectively with contracted Service Providers to integrate private, hybrid and public cloud capabilities.

“Push your business technology into the cloud and get back to focusing on your core competencies.”

TOM COCHRAN, DEPUTY COORDINATOR FOR PLATFORMS,
U.S. DEPARTMENT OF STATE

Actifio Cloud Flexibility

- Virtual data access, on-demand workload capacity
- and service level control
- Responsive and elastic IT services blend across private, public or hybrid cloud environments
- Versatile cloud on ramp and off ramp
- Enhanced cost control

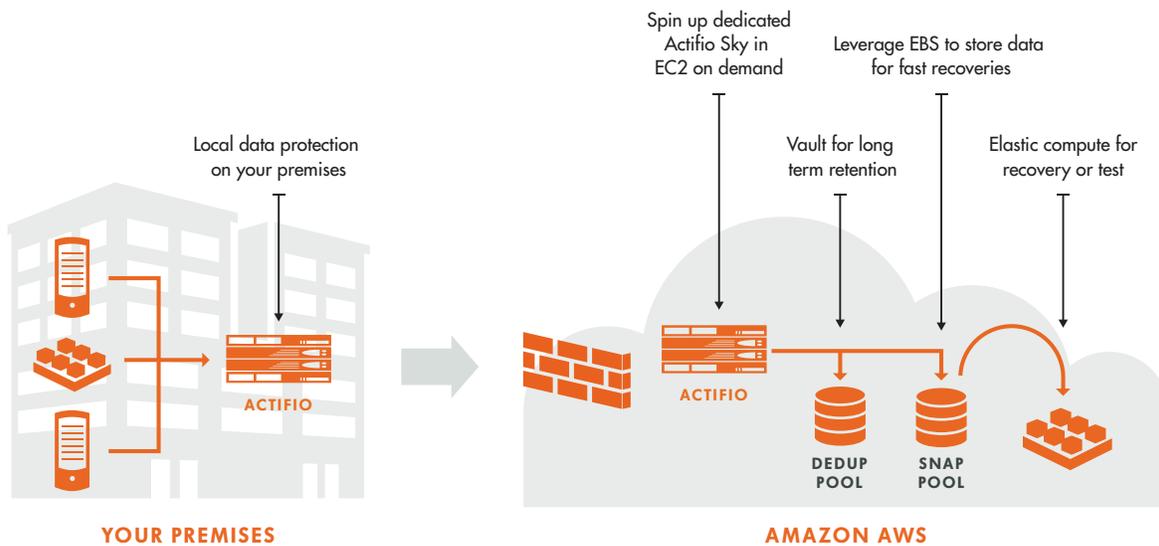
Even though expense is reduced through virtualization, automation, and tighter standards, investments are required to introduce the new technologies that create self-service offerings and set the stage for cloud speed and agility objectives. While many large organizations have deployed private clouds, many are moving to Hybrid deployments that introduce new services and rely heavily on adaptable data agility.

Actifio Data Virtualization enables a new level of IT flexibility, portability, and elasticity by allowing seamless data control and access on-demand, in the most efficient way possible. Creating burst capacity, cloud can accommodate requirements that would otherwise consume expensive standby resources of internal data centers. Capabilities can scale out quickly and shrink again when no longer needed. The cloud value proposition can deliver immediate capabilities that capitalize on new business economics and accelerated opportunity.

Actifio Cloud Innovation

- Building, Managing and Protecting Applications in the Cloud
- Data agility, speed, mobility, resilience and seamless core to edge operations
- Rapid evolution of mission applications and IT management
- New insights into data management as a critical enterprise strategy
- IT as a value generator and an enabler of mission impacts

FIGURE 1: Copy Data Virtualization to the Cloud



Enterprises look to cloud for innovation. The potential scale and scope of a cloud deployment extends across applications, systems, data centers and remote locations as well as public and private clouds. It's vital to manage the virtual environment simply and directly. Also, financial considerations will always be an important factor. Many enterprises have already seen very positive ROI from virtualized applications and increased hardware commoditization.

Actifio delivers global data management to the most distributed architectures. It creates an accelerated and information-centric management model to generate new business and competitive advantage. Actifio data virtualization, copy elimination, deduplication, and data consolidation are core enablers of practical information-centric value creation. They provide a vital means for agencies to rapidly connect the dots between client challenges and data-centered solutions.

Actifio gives users a software-based capability to gain greater control, protection, and flexibility when managing application development in the cloud. For example, they can easily provide virtual images of data to development platforms when operating within their Amazon environments. This gives them direct and maximum command of data movement, audit trails, and protection. They can quickly pull VMs back on premises; independently place them in remote protected environments, or even fail-over to Amazon or other cloud environments as needed.

Actifio Innovation Advantages:

- Accelerating advanced, born-in-the-cloud, application development
- Simplifying cloud application data resiliency and protection
- Creating agency controlled data protection capabilities in a provider's cloud
- Agency-controlled data management and administration
- Simple cloud data on-ramp and off-ramp

Government Cloud Best Practices

Accelerate Results, Resiliency, and Agility—Cloud is an opportunity to provide programs and developers with speed and data agility. Agencies can concentrate on strategy instead of infrastructure. They can accelerate adoption of advanced technology with minimum capital cost. Cloud initiatives can align mission objectives with technical innovation that transforms legacy systems into a new opportunity that impacts mission success. Actifio benefits agencies by combining data virtualization with assurance of application recoverability and exceptional flexibility to securely provide immediate mission capacity at the right place and time.

Ease and speed data mobility—A cohesive cloud strategy is the first step to smooth execution. It starts with selecting and managing appropriate cloud transitions to successfully migrate applications and data sets. Some applications may never be suitable for cloud implementation. And even appropriate candidates must overcome the slow and complicated traditional means of data movement.

Actifio aligns simplicity and data mobility across virtual and physical environments. It flexibly streamlines data movement for individual workloads or migration of full applications to and from cloud services. Applications move, refresh and test faster. Data migration/consolidation for major cloud moves becomes free of infrastructure constraints. It becomes seamlessly accessible between data centers and among field locations.

Simplify—Contrasting with overlapping and costly legacy solutions, Actifio brings simplicity. It displaces various proprietary technologies and copy data silos with an uncomplicated, hardware-agnostic platform that requires less labor to run and produces more budgetary control in the process. Repetitive operations will gradually become embedded in the software. Developers and implementation teams can align while repeatable functions become self-service.

Choose and Mix Cloud Options—Cloud IT can enable data center transformation. In any form - private, public or hybrid – cloud can positively impact mission success. If needed, help is available through Cloud Brokers who can effectively guide agency choices. They serve as independent advisors on service provider selection. They help select and introduce new technologies to reshape services, applications and business potential. They facilitate pilot projects in support of internal champions to create demonstrable proof-of-concept and create first-step engagements for an enterprise.

Cloud Backup and Disaster Recovery—Each enterprise will weigh benefits and tradeoffs when considering cloud-based Business Continuity and Disaster Recovery solutions. Actifio makes these decisions much simpler by providing a seamless means to transfer data without production impacts. It enables recovery times approaching seconds. It's much more than backup. It's an opportunity to drive out capital costs and eliminate a jumble of specialized systems and internally managed operations crowded with expensive infrastructure. The exchange for legacy complexity is a single, simple data virtualization and management platform.

Data Security and Control—Security concerns create one of the most frequent roadblocks to cloud deployment. Understandably, confidence in data safety is essential but it is not an excuse to avoid cloud deployments. Vendor safeguards are available to prevent potential data leaks, regulatory compliance breaches and risks to reputation. Many

providers have developed broad security resources. With segmented security controls, independent security audits and client-only key access they can help to satisfy skeptics.

Importantly, Actifio copy data virtualization collapses the potential “surface of attack” for any malicious purpose into a single golden copy of protected production data. Data Virtualization provides centralized control for the entire copy data environment and life cycle. It establishes a centralized location for applying access control, data monitoring, and authentication. It inhibits unsecured shadow IT operations, and it constrains cost.

About Actifio

Actifio delivers copy data virtualization to hundreds of global enterprise customers and service provider partners in more than 30 countries around the world. Our Virtual Data Pipeline™ technology decouples data from infrastructure, enabling dramatic improvements in business resiliency, agility, and access to the cloud. Actifio replaces siloed data management applications with a radically simple, application-centric, SLA-driven approach that lets customers capture data from production applications, manage it more economically, and use it when and where they need to. Actifio is headquartered just outside Boston, Massachusetts.

To learn more, contact Actifio via the web at actifio.com, via Twitter at [@actifio](https://twitter.com/actifio); or email at info@actifio.com.