



Turning **VISION** into **ACTION**®

PRESIDENT'S NOTE

Dear Friends:

The heat of the Summer is upon us and nothing is hotter than the journey to the Cloud. In this issue of ActionNews, we explore the Portfolio and Assessment Analysis Process for Cloud readiness and how we have leveraged the Cloud for DevOps Integration and Deployment.

Many thanks to all who participated in the American Red Cross Clothing Drive last month. Our ActionNeters contributed 14 boxes with over 600 items including coats, gloves, shirts, pants and hats to help those in need.

Best wishes for the Summer Season!

Ashley W. Chen

President & CEO

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ActionNet DevOps: Benefits of Cloud, Automation, and CI/CD

By Chris Schwalm, Executive Director

ActioNet provides technology modernization services and solutions to a large set of agencies across the federal landscape. Over the past few years there has been a noticeable increase in agencies looking to take advantage of the benefits offered through our Cloud, Automation, and Continuous Integration & Contiguous Deployment (CI/CD). This is a brief overview some of the benefits from these approaches/technologies and why these are included in a majority of our technology roadmaps.



Summary

Prime benefits that result from the combination of the adopted use of Cloud, Automation, and CI/CD technologies enable organizations to make significant progress to resolving persistent challenges consistent with complex software development programs. For example:

- **Environment Consistency** – Automation enables consistent implementations of configurations for servers and deployment actions. By reducing human error and leveraging templates for server builds, for example, it becomes significantly easier to deploy the same baselines for a myriad of environments and circumstances.
- **Inconsistent Software Development Velocity / Increase Team Capacity** – Through maturing CI/CD capabilities and leveraging test automation, developers can receive near-real time (daily or several times daily) feedback when faulty code is written. Early discovery is key to minimize the negative impacts to schedules and minimize the total effort required to fix issues.
- **Increase Operational Flexibility** – Leveraging cloud and other automation technologies enables CMSO to quickly and cost effectively rapidly prototype and test new technologies, software, architecture, and systems without requiring significant up-front investments.

“It is extremely cost effective to be able to scale up or down with resources as needed.”

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ActioNet DevOps: Benefits of Cloud, Automation, and CI/CD

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Cloud

Operational Agility: It is extremely cost effective to be able to scale up or down with resources as needed. If your needs increase, it's easy to scale up your cloud capacity, drawing on the service's remote servers. Likewise, if you need to scale down again, the flexibility is baked into the service. More advanced configurations such as cloud bursting enables an organization to continue to utilize on-premise resources for most workloads except when resources are constrained, wherein the information systems can temporarily and automatically (or with approval) redirect those workloads to the cloud to handle the demand. This is essentially a robust Quality of Service (QoS), or load-balancing capability for entire information systems.

Capital Expenditure Free: Cloud computing cuts out the high cost of hardware. You simply pay as you go and enjoy a subscription-based model. This significantly reduces the risk for prototyping new technologies, architecture, and other applications by requiring a much smaller amount of investment up front.

Reduction in Technical Complexity: The boundary of responsibility for the organization reduces to the logical environment in which they create. The cloud service provider is responsible for all of the hardware, networks, connectivity, power, facility, and security of all of those components. This setup can measurably reduce the administrative overhead associated with on-premise hardware.

Increased Pace and Reduced Cost of Development and Projects: Cloud offerings come with many templates, automation, and software that is available for use for limited durations. This enables organizations to be more cost effective concerning the licenses and resources that are needed to accomplish projects that are one-time or seldom occurrences. These offerings also enable organizations to procure resources within a significantly shorter timeframe than traditional procurement methods with pay-as-you-go models for software licenses.

Automation

Automation is one of the greatest sources for maximizing efficiency, increasing quality and minimizing costs. Automation decreases the time necessary for testing and other repetitive tasks significantly, often producing efficiencies that are 100-1000% more efficient than manual processes. For example, a typical

manual GUI-based functional test may take 10 minutes to complete for a person, but an automated test can be finished within 2 minutes or less. This increases quality by not only enabling faster feedback to developers, but ensures tests and other activities that would otherwise be done manually are conducted without human error. Additionally, automation scripts are available for execution 24/7/365. Automation can be triggered based upon events or time. The result is an information system that becomes responsive to the needs of the organization without requiring a human to conduct tasks around the clock. Many organizations have been successful with incorporating extensive automation, especially around testing, on a nightly basis. Establishing conditions that initiate other automation enables organizations to do extensive testing overnight and produce effective security and functional testing results. This is critical to achieving even some of the basic benefits of Agile-based software development.

Continuous Integration / Continuous Development (CI/CD)

CI/CD technologies incorporate a lot of the benefits of automation at-large and applies it specifically to the development process. CI/CD is at its core automation and links together various critical steps of the development and testing processes and activities to produce near-real time feedback to developers and other technical staff to ensure higher code quality, minimize integration issues, and security vulnerabilities. One of the largest benefits of this fast feedback loop is the ability to test on a more daily continual basis (every time code is checked in), which results in identification of bugs and other issues that can be corrected quickly without wasting significant time or effort. If a coding issue is discovered early in the process, it prevents the issue from becoming a bigger problem that is more widely proliferated within the application.

As an example, what if there is no mature, effective CI/CD ability and a consistent coding error occurs at the beginning of the development's sprint on a Monday? The code integration may occur daily, but nothing is tested. Builds of the software, necessary for regression and performance testing, are executed only once development stops (typically over the weekend). When developers return the next Monday, they discover their fundamental coding issue a week after they started. Since they were not able to catch the issue quickly, they also

repeated the same coding issue throughout the rest of the week. So instead of correcting a minor issue which resulted from the previous day, the developers must comb through a week's worth of code to correct the numerous issues that were created. This is one of the most significant sources of waste within software development as it not only means that effort expended can easily become effort wasted, it also increases the amount of effort required to correct the issue in the first place. The result is higher-quality

code, faster development timeframes (or the ability to develop more features within the same amount of time), and lower development complexity.

ActioNet has a proven **Cloud, Automation, and CI/CD** competencies and knows how to deliver the services that reduce risk and provide the operational and budget efficiencies relevant to IT. Please contact ActioNet today at actionetcloud@actionet.com for your Cloud, Automation, and CI/CD needs.

“ActioNet has methodologies and tools to effectively and efficiently perform portfolio analysis, determine strategy, and quickly begin migrating systems and services to the cloud.”

Traveling to the Cloud ... Are We There Yet?

By James Leonard, Sr. Program Manager



How many times have we heard that phrase while traveling to a destination with young family members? Cloud adoption is no different and requires a solid roadmap to gauge progress and make timely decisions. Most organizations recognize the potential of Cloud services and almost all have some plan to adopt Cloud computing. Yet, experience shows that many organizations are reluctant to make the commitment to migrate services into the Cloud. Instead, they embark on a seemingly unending process of analysis that produces few results.

ActioNet has methodologies and tools to effectively and efficiently perform portfolio analysis, determine strategy, and quickly begin migrating systems and services to the Cloud. ActioNet's structured process has security baked in to ensure our government customers meet or exceed all applicable standards such as FedRAMP, NIST 800-53, and other agency specific standards. The ActioNet Portfolio Assessment and Analysis Tool (PAAT) is a component of the ActioNet360® Cloud Migration Methodology and a critical instrument used to assess the enterprise systems portfolio, classify applications, and assign a migration complexity. An organizations benefit priority is computed based on quantitative criteria as

well as the target future state Cloud service model (IaaS, PaaS, or SaaS). ActioNet's custom tools and methodology provide customers a clear roadmap for the cloud journey; Customers are better able to control costs and timelines because of ActioNet's comprehensive analysis and recommendations.

Many are confused by the terms portfolio analysis and portfolio rationalization. It is important to make a distinction between the two because each term has a different intent and outcome.

- **Portfolio Analysis** is the process of documenting application technical features, capacity requirements, and constraints that affect Cloud migration.
- **Portfolio Rationalization** is a strategic business process to determine which applications should be kept, replaced, retired or consolidated to improve business operations.

Rationalization can be performed at any time and is not required to move workloads into the Cloud, but it is a convenient time to think strategically and assess the value of the system and its strategic fit within the broader enterprise portfolio. Rationalization need not be a lengthy process nor confused with application remediation that may be required as a result of the migration analysis based upon the target Cloud service model.

The ActioNet PAAT uses tailorable Cloud adoption assessment criteria that is grouped into three major areas; 1) Solution/Architecture, 2) Mission Benefits/Operational Impact, and 3) Costs/Efficiencies. Each criteria area has sub-category factors, weights and the associated multiplier can be modified for each area. The portfolio

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ActionNet solutions are built on **People, Innovative Processes, Technology** and **Partnership**. ActionNet has established an outstanding track record of creating continuously forward-looking, cost-effective IT solutions, meeting such Federal mandates as 'Cloud-First' initiatives. Our ActionNetCloud® family of service offerings include:

- **ActionNetDesk®**
- **ActionNetAgile™**
- **ActionNetHosting®**
- **ActionNetMobility®**
- **ActionNetCyber™**
- **ActionNet360®**

For a complete list of ActionNetCloud® Solutions, visit www.actionnet.com/Solutions/ActionNetCloud.asp

ActionNet's Core Values center on Customer Service, Employee Growth and the Quality of our Work. We continually invest in our people and our capabilities with a continual process improvement focus based on ISO 20000, ISO 27000, ISO 9000, HDI and CMMI® Level 3. We are proud to have many certified staff:

- 500 ITIL Certified
- 100 PMP Certified
- 80 DoD 8570 Compliant
- 35 ScrumMasters
- 24 AWS Certified Technical

The key to successful transformation into a performance-based, customer-focused organization is clearly defining the current state of the organization and building a detailed roadmap for improving service delivery

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assessment outputs provide the framework and operational inputs that drive Cloud architecture considerations, remediation requirements to operate efficiently in an *IaaS* or *PaaS* environment, cost estimates, and work scheduling dependencies. It also provides a rational and quantitative basis for decision making based on defined organizational needs and priorities as reflected in the overall enterprise architecture.

ACTIONET PAAT EVALUATION AREA		
Solution/Architecture	Mission Benefits	Cost Efficiencies
➤ Cloud Adoption	➤ End User Benefits	➤ Cost Savings
➤ Implementation Readiness	➤ IT Operations/Support	➤ Operating Efficiency
➤ System Complexity	➤ Risk Reduction	
➤ Remediation LOE		
➤ Security Rating		

The Solutions/Architecture area focuses on application readiness based on the target service delivery environment, system data dependencies, complexity, and security considerations. The Mission Benefit/Operational Impact area rates factors pertinent to the user experience, performance, improvements to service delivery, and risk

reduction. Typically, mission benefits and operational impacts are heavily weighted to business continuity enhancements, redundancy and failover, as well as disaster recovery - which was previously cost prohibitive in hardware intensive on premise facilities - but is inherent to Cloud computing due to the elasticity and scalability of services. The Costs/Efficiency area evaluates expected Return on Investment (ROI), infrastructure and O&M cost savings and risk that can be passed along to the Cloud Service Provider (CSP), and the ability to realign staff to perform more impactful mission tasks. Finally, an application priority ranking is computed based on the sub-area factors, cost savings, and avoidance opportunities that can reduce and mitigate the "migration budget bubble".

The migration of critical mission systems to the Cloud requires deliberate planning and keen technical knowledge to successfully transform the computing environment into an elastic, scalable, and fault tolerant eco-system with minimal disruption. ActionNet has the experience, methodologies, and tools to make our customers successful in weeks and months as opposed to years.

ActionNeters Give Back With Clothing Drive

By Camillia E.

Between January 30th – April 30th ActionNet collected over 600 items of new and gently used men's, women's, and children's clothing in support of the American Red Cross. As a new employee with ActionNet, I was honored to be a part of the coordination team. Along with Andy, Travis and Michelle, I helped with the clothing intake, sorting, boxing and loading of the donation truck. One of my co-workers tried to place me in the box for donation!

Often people in my age group get caught up in our own lives and struggles, we forget that it's always possible to help someone else in even the smallest ways. Being a part of this give back effort felt really good!

