eFAST

Federal Aviation Administration

Cloud Computing Services

25 October 2012

Bottom Line Up Front

- The FAA Cloud Computing Vision released in 2012 identified the agency's road map to meet the Cloud First Policy

- eFAST must provide the contractual tools, labor categories and vehicle to assist the agency achieving the Cloud First mandate by adding a Cloud Services functional area.

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Cloud Fundamentals

- On-demand self-service. The ability for an end user to sign up and receive services without the long delays that have characterized traditional IT Broad network access.

- Ability to access the service via standard platforms (desktop, laptop, mobile etc.) Resource pooling. Resources are pooled across multiple customers

- Rapid elasticity. Capability can scale to cope with demand peaks

- Measured Service. Billing is metered and delivered as a utility service

Deployment Models

- *Private Cloud*
- *Community Cloud*
- **Public Cloud**
- **Hybrid Cloud**

Cloud Services

- Software as a Service (SaaS)
- Platform as a Service (PaaS)
- Infrastructure as a Service (IaaS)
- Cloud Security

Cloud Security

- Firewall: Customer Managed, Broker Managed, Co-Managed
- Intrusion Detection Systems: Network and Host Based
- Intrusion Prevention Systems: Network and Host Based
- Logging: Export to Client or Brokers Log Aggregation Servers and Security Event and Information Manager
- Managed Secure information Event and Information manager and 24/7 SOC monitoring
- Encryption: Various Solutions for data in motion and at rest and in archive (VPN's, Database and Tape Encryption)
- Managed File Integrity monitoring
- Managed Application Layer Firewalls: Host and Network Based
- Managed Scanning: Vulnerability Analysis for Network, Application and Database
- Managed Netflow Aggregation and Anomalous Behavior Monitoring
- Managed Full Network Packet/Disk/Memory Image Capture and Forensics
- Managed Incident Response
- Managed End User Analytics and Root Cause Analysis
- 3rd Party Auditor
- Cloud Architecture and requirements

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CLOUD BROKER

- A cloud broker provides the bridge functions from cloud consumer to Cloud Service Provider (CSP).

- The role of a CSP can blur the security responsibilities between both parties involved. Consideration of security zones and the resulting risk assumptions by the entities need to be identified, assigned, and mitigated during implementation.

- Ideally any implementation of a cloud brokerage contract vehicle would provide significant baseline security to streamline customer agency effort in obtaining a security authorization to operate (ATO) for the services provided.

- FedRAMP will serve as the baseline security authorization avenue for all cloud services.

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Service Level Agreement Metrics

- **Customer-based SLA**: An agreement with an individual customer group, covering all the services they use.
- **Service-based SLA**: An agreement for all customers using the services being delivered by the service provider. For example:
- **Multilevel SLA**: The SLA is split into the different levels, each addressing different set of customers for the same services, in the same SLA.
- **Corporate-level SLA**: Covering all the generic service level management (often abbreviated as SLM) issues appropriate to every customer throughout the organization..
- **Customer-level SLA**: covering all SLM issues relevant to the particular customer group, regardless of the services being used.
- **Service-level SLA**: covering all SLM issue relevant to the specific services, in relation to this specific customer group.

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SWOT

Strengths	Weaknesses	Opportunities	Threats
Increased Cost Efficiency	Performance	data center consolidation	venerable
Increased Provisioning Speed	Security	net-centricity	limited competition
Scalability	Reliability	information sharing	
IT cost savings	Safety	shared services	
	Bandwidth	innovation	
	Single point of failure		

Recommendations

- Amend the eFAST master MOA to add a functional areas to support Cloud Services.

- Identify eFAST companies that can provide "cloud broker" services to assist migration to cloud.

- Consider offering consulting services for migrating to Cloud PaaS, IaaS and SaaS services (with the corresponding engineering, analysis, management and security labor categories by leveraging the exiting functional labor categories).

- Conduct additional analysis to add labor categories to support the 3rd party auditors to support FedRamp Certification and Accreditation.

- Leverage the contractual documents used by the GSA to the fullest extent and modifying those documents (SOO, Evaluation Criteria etc.) to meet the eFAST acquisition standards and templates saving the contract office both time and money.

Recommendations

- eFAST contract not offer Email as a Service (EaaS) since the FAA is currently working that effort in another initiative.

- Since many of the CSPs are large businesses with small business partners, recommend that the small business ratio be waived for the first two years to enable eFAST contractors to perform less than 51% or work.

- eFAST contract coordinates closely with the Agency's Strategic Cloud Plan to ensure both compliance and interoperability.