

A faint, dotted world map is centered in the background of the slide. The map is composed of small grey dots forming the outlines of continents. The top and bottom of the slide feature a blue gradient background.

NRO

Industry Advisory Working Group (NIAWG)

Hybrid Cloud Decision Framework

May 2024

Challenges to Achieving a Viable Multiple-Cloud Ecosystem at an Agency and Community Scale

1. Potentially unbounded & unpredictable technical & business decision combinations
 - Need for standardized cloud selection decision criteria across agencies and programs
 - Opaque and varying business – technical consumption models
 - Refactoring costs undermine viability & value of leveraging multiple clouds
2. Timing infrastructure trades in the acquisition lifecycle: “no free lunch”
 - Defining infrastructure prior to Request for Proposal (RFP) risks rework
 - Forcing infrastructure selection into RFP process adds engineering work to bid preparation
 - Selecting infrastructure post-award adds up-front schedule
3. Using cloud-specific services adds value but constrains **cloud-neutrality**
 - Existing program baselines coded to specific infrastructures
 - Question: how to maintain cloud neutrality/portability without limiting CSP use to IaaS?
 - Question: what criteria should be used when considering use of a CSP service?

Hybrid Cloud Action Team Objective: Identify ideas to overcome these challenges.

Cloud Action Team Terms of Reference

- a. “Multiple Cloud” = access to more than one provider for standalone systems
- b. “On-prem” = infrastructure delivered into a provided datacenter (could be agency or program specific, capitalized or “as a service”)
- c. “Multi-cloud” = more than one provider in integrated, multi-segment solutions
- d. “Hybrid-cloud” = using a combination of on-prem + multi-cloud
- e. “IaaS” = Infrastructure as a Service
- f. “Cloud First” = 2010 White House policy requiring Cloud as the the default
- g. “Cloud Smart” = 2018 White House policy requiring infrastructure selection to be requirements and business driven.
- h. “CSP” = Cloud Service Provider

Infrastructure Decision Criteria Framework

G = Government criteria

I = Industry criteria

B = both government & industry

PERFORMANCE

- Ingest rate capacity (G)
- “Physics” (I)
- Compute performance (various) (I)
- SaaS features/performance (various) (I)
- Storage latency: read/write & access times (I)
- Time-dominant vs Non-time dominant (B)
- Failover/Availability (resiliency) (G)
- Perf/cost sensitivity to design quality (B)

ARCHITECTURE/INTEGRATION

- Application scalability needs (I)
- Elasticity vs 24x7 use (I)
- Open systems / Portability (more than 1 cloud) (G)
- Unique services req'd to optimize cost /perf? (B)
- Refactoring requirements (B)
- Cyber hardening/security (G)
- Mission unique requirements (multi-cast) (G)
- Monoculture & Industry Diversity (resiliency) (G)

BUSINESS

- Recap funding risk (G)
- Data movement cost (B)
- S/W license portability (G)
- System/Service Life cycle cost (G)
- Program & Prime CSP expertise (B)
- Competitive landscape (G)
- Dependencies (B)
- Pricing & business model (I)
- Supplier/partner CSP relationship (I)

Application Recommendations:

1. Validate which are government, industry or both.
2. Consider RISK as a major category/criteria (cost, schedule, security, governance, etc.)
3. Having too many factors may be counterproductive. Limit to 3-4 per category.
4. Some factors may be more important than others. Select the most applicable and publish the criteria as part of the program baseline.

Cloud Decision Criteria Framework: Where to Apply It? How to Deliver & Use It?

- Where to apply the trade? Industry perspective

- Domain *“what type of workload is it?” Government characterizes*
- System
- Segment
- Sub-segment *“what’s the trade space? what does the contract allow?”*

- Reality: System vs Segment optimization (can’t optimize both)

- Concern: too low a level of trade (sub-segment) can result in overly complex inter-cloud traffic within a single segment as well as potential for business-driven (biased) decisions

- Who does the trade? Government, Industry, or both?

- Alternative 1: combined Government/Industry view
- Alternative 2: separate Government vs Industry views
- Higher level business process vs lower level decision framework?

Recommendation: Select & communicate criteria based on program requirements

NRO IAWG

Mission, Charter & Objectives

- **Mission:** Identify business/operating model evolution to realize the NRO Vision
 - Identify business models that will support government and industry objectives
 - Identify potential pitfalls and recommend potential solutions
- **Charter:** Provide expert industry resource and sounding board focused on Business aspects of emerging models to acquire software services
 - Benefits accrued to the government & industry,
 - Intended and unintended consequences against the industry base,
 - Limitations and viability as a reasonable course of action
- **Objectives:**
 - Provide strategic industry input to a changing acquisition landscape
 - Provide an objective and neutral venue for discussing approaches to business models
 - Foster effective communication between government and industry leadership

NIAWG Contacts

Nick Buck:	nick@buckgroup.net	(703) 801-3405
Ann Waynik:	ann.waynik@dayzim.com	(703) 975-4456
Nicholas Lee:	Nicholas.lee@usgif.org	(626) 388-4791