
DHS Office of Procurement Operations

Data Center and Cloud Optimization (DCCO)

Industry Day Presentation

March 10, 2020



Welcome

David Ritter, Division Director
Information Technology Acquisition Center
DHS Office of Procurement Operations

Data Center and Cloud Optimization (DCCO) Industry Day Agenda

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|-------|-----------------------------------|---|
| I. | Welcome | David Ritter DHS OPO |
| II. | Opening Remarks | Soraya Correa (CPO) & Elizabeth Cappello (ACIO) |
| III. | Data Center Optimization Approach | Ruth Shearer (OCIO) |
| IV. | Market Research Results | Bill Lewis (OCIO) |
| V. | DCCO Overview | Bill Lewis (OCIO) |
| VI. | DCCO Scope Summary | Dr. Mark Lucas (OCIO) |
| VII. | Current Purchasing Profile | Kim Ellmore (OCIO) |
| VIII. | Component Perspective | Patrick Nemeth (OBIM) & Rich Clark (ICE) |
| IX. | Acquisition Next Steps | Breean Jaroski DHS OPO |
| X. | Q&A Session & Answer Panel | OCIO, OBIM, ICE & OCPO |

Purpose & Program Flow

Purpose

- Assist Industry in gaining greater understanding of DCCO objectives.
- To exchange ideas with Industry to improve DHS's ability to achieve desired outcome.

Program Flow

- Speakers will go through each of their presentations.
- Panel discussion to address Industry's questions.

Opening Remarks

- ❖ Soraya Correa, Chief Procurement Officer
U.S. Department of Homeland Security
- ❖ Elizabeth Cappello, Acting Chief Information Officer
U.S. Department of Homeland Security

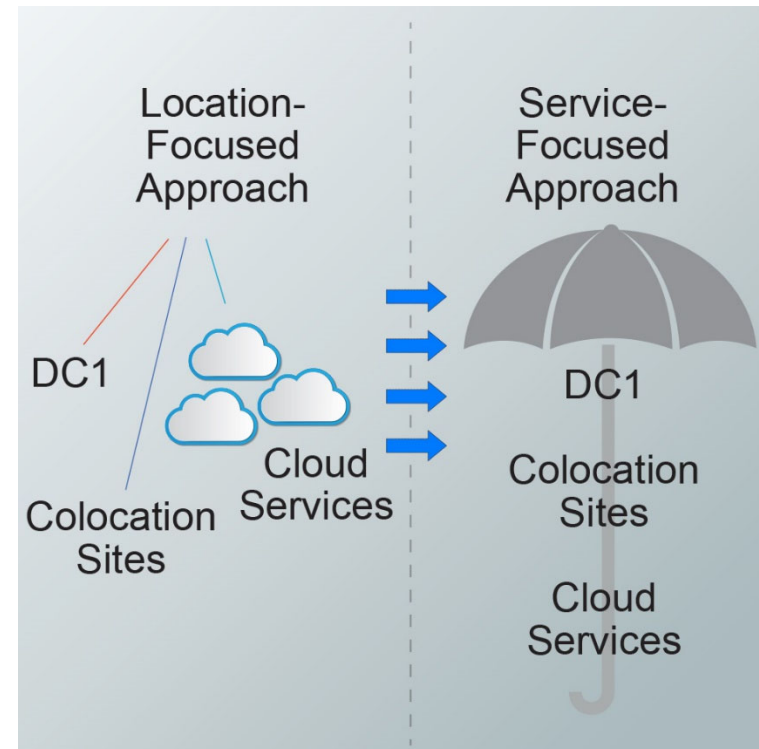
Data Center Optimization Approach

Ruth Shearer, DHS OCIO

Optimization and Consolidation

DHS Operates 2 Enterprise Data Centers:

- ❑ DC1 is:
 - ❑ Government owned/contractor operated
 - ❑ Government provides facility
 - ❑ DHS will optimize the IT infrastructure and operations in this data center, including integration with cloud and colocation sites through DCCO
- ❑ DC2 is:
 - ❑ Contractor owned and operated
 - ❑ DHS systems are migrating from this data center to cloud, DC1, colocation sites, and retirement



Market Research Results – Request for Information

Bill Lewis, DHS OCIO

- ❑ RFI released in February 2019 “IT Compute and Storage Modernization, Cloud Migration, and Data Center Optimization”

- ❑ 105 Respondents for 38 questions and sub-questions

- ❑ Responses to questions analyzed in four areas:
 - ❑ Data Center Optimization
 - ❑ Cloud Migration
 - ❑ Integration of Hybrid Environments
 - ❑ Business Models

Market Research Results – Key Findings

Bill Lewis, DHS OCIO

- ❑ **Data Center Optimization** - Virtualization, automation, and adoption of “as a service” models within a data center (driven by data and governance)
- ❑ **Cloud Migration** - One size does not fit all
- ❑ **Integration of Hybrid Environment** – Simultaneous operation of on-premise IT infrastructure, hosted infrastructure (colocation), and cloud “as a service” models
- ❑ **Integration of Hybrid Environment/Operations** – Common operating models for fault, capacity, security, asset, and performance management lower the cost of ownership and improve reliability
- ❑ **Business Models** – Focus on bringing speed and efficiency
 - ❑ On demand – being able to implement the essential characteristics of cloud
 - ❑ Use of non-traditional methods of government contracting

DCCO Overview - Service Delivery Model

Bill Lewis, DHS OCIO

Professional Services – Rationalization and Migration

Common Service Management

SERVICE PORTFOLIO

DC1

IaaS

PaaS

SaaS

CoLo

Common Intake Process

Office of Intelligence and Analysis

Countering Weapons of Mass

U.S. Customs and Border Protection

Office of Operations Coordination

Destruction Office

Cybersecurity and Infrastructure Security Agency

Management Directorate

Federal Law Enforcement Training Center

U.S. Immigration and Customs Enforcement

Transportation Security Administration

U.S. Coast Guard Federal Emergency Management Agency

Science and Technology Directorate



U.S. Citizenship and Immigration Services

U.S. Secret Service

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DCCO Scope Summary - Business Objectives

Dr. Mark Lucas – DHS OCIO



Improve Purchasing Value in Compute/Storage



Improve Responsiveness



Increase Scalability and Elasticity



Improve Reliability and Availability



Provide Continuous Security Monitoring and Mitigation



Provide Continual Operational Assessment and Improvement



Provide an Architectural Approach



Provide Service Governance



Simplify Management and Improve Transparency

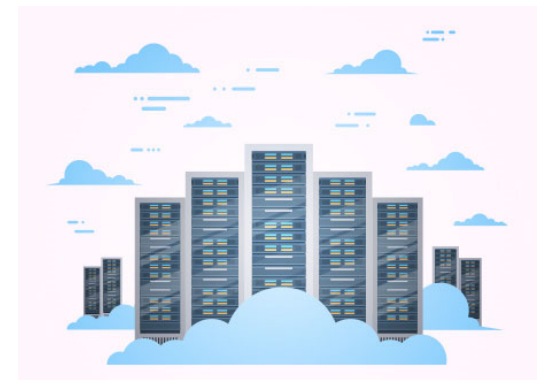
DCCO Scope Summary - Data Center 1

Dr. Mark Lucas, DHS OCIO

- ❑ Provide continuing support of current services

- ❑ Implement, optimize and operate compute and storage infrastructure and applications in DC1 and other associated locations

Current Data Center Services	
<ul style="list-style-type: none"> • Hosting/Computing Services 	<ul style="list-style-type: none"> • Application Services
<ul style="list-style-type: none"> • Performance and Capacity Monitoring 	<ul style="list-style-type: none"> • Network and Security Services
<ul style="list-style-type: none"> • Data Storage Services 	<ul style="list-style-type: none"> • Operation/Monitoring and Maintenance Services
<ul style="list-style-type: none"> • Data Archiving 	<ul style="list-style-type: none"> • Disaster Recovery/Continuity Services/Reconstitution
<ul style="list-style-type: none"> • Technical Guidance 	<ul style="list-style-type: none"> • Classified Computing Services
<ul style="list-style-type: none"> • Network and Security Infrastructure 	<ul style="list-style-type: none"> • Program & Project Management
<ul style="list-style-type: none"> • Migration Services 	<ul style="list-style-type: none"> • Virtualized Compute Services
<ul style="list-style-type: none"> • Professional Services supporting data center operations 	<ul style="list-style-type: none"> • Transition Support Services for technology and supplier changes



DCCO Scope Summary - Cloud, Colocation and Integration Services

Dr. Mark Lucas, DHS OCIO

- ❑ Provide services from and integration to FedRAMP certified CSPs and colocation providers, with continual evaluation of service and cost models
- ❑ Ensure U.S.-based operations and management of CSPs and colocation environments
- ❑ Optimize costs to provide services from CSPs and colocation facilities for appropriate performance and scaling to and across environments
- ❑ Ensure disaster recovery, continuity services, and related data portability and storage in geographically dispersed locations that continue to support operations to ensure availability requirements are met
- ❑ Ensure system interoperability, availability, performance, and security across hosting environments



DCCO Scope Summary - Professional Services

Dr. Mark Lucas, DHS OCIO

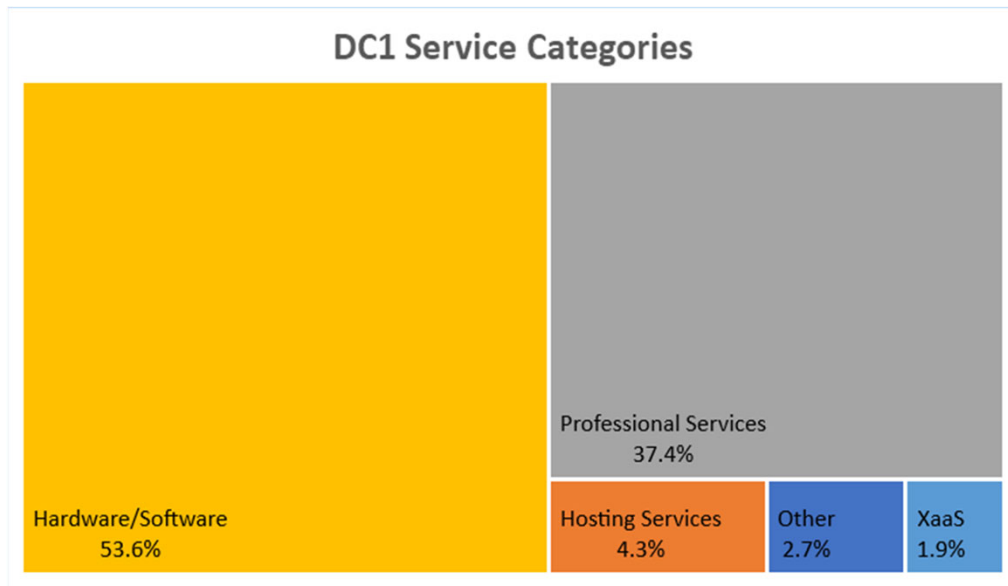
- ❑ Application rationalization – find the optimal course of action
- ❑ Planning, implementation, and testing migrations as well as providing post-migration support, sustainment and enhancement
- ❑ Optimization across DC1 and other DHS hosting environments
- ❑ Provide expertise on emerging cybersecurity, technology, and IT management practices and reporting
- ❑ Enhance management, cybersecurity, service level management, and performance monitoring and reporting



DC1 Current Purchasing Profile

Kim Ellmore, DHS OCIO

DC1 Service Categories	6/18-6/19 (\$M)	Percent of Total
XaaS	\$ 5.1	1.9%
Hosting Services	\$ 11.3	4.3%
Professional Services	\$ 98.5	37.4%
Hardware/Software	\$ 141.1	53.6%
Other	\$ 7.2	2.7%
Total Expensed	\$ 263.2	100.0%

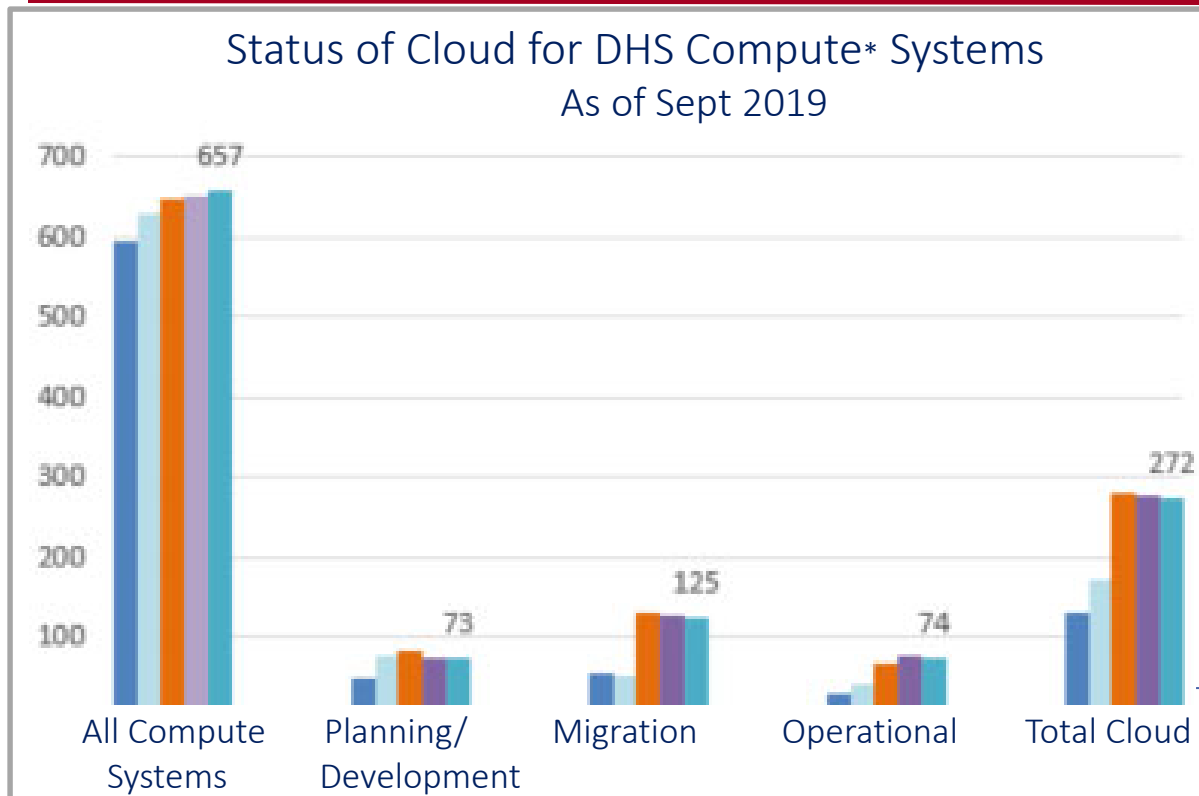


Definitions

- ❑ **XaaS:** Tools and technologies that are delivered “as a service” to Component customers
- ❑ **Hosting Services:** Compute and storage installation and support, plus additional management and monitoring (i.e., ping, power, pipe, patch)
- ❑ **Professional Services:** Tailored services to support applications and manage hybrid IT environment
- ❑ **Hardware/Software:** Costs for equipment, software and hardware/software maintenance
- ❑ **Other:** Storage, backup, and alternate site/redundant services

DC1 Current Purchasing Profile - DHS Cloud Trends

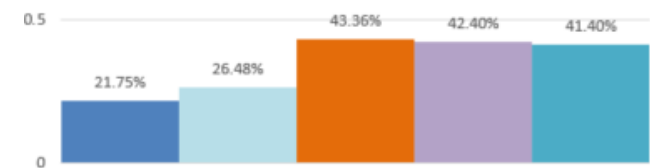
Kim Ellmore, DHS OCIO



Planned DHS Cloud Costs	FY 2019 (\$M)	Percent of Total
IaaS	\$ 82.03	47.7%
PaaS	\$ 43.25	25.1%
SaaS	\$ 46.87	27.2%
Total	\$ 172.15	100.0%

22% growth from FY 2018 to FY 2019
Experiencing higher growth for FY 2020

Percentage of DHS Compute Systems Using Cloud



* Compute systems are all systems using physical and virtual servers

Legend:	As of
Blue	Feb-18
Light Blue	Dec-18
Orange	Apr-19
Purple	Jun-19
Teal	Sep-19

Cloud Usage Status:
 Planning/Development – New systems direct to cloud
 Migration – Moving from a data center to cloud
 Operational – In production in cloud

Component Perspective - OBIM Environment

Patrick Nemeth, OBIM

OBIM is DHS's Biometrics Provider



- Customers are DHS, Federal, International
- >100 mission accounts
- MQ, AQ, & Web Services
- Finger, Face, Iris

Immigration and Border Management

Law Enforcement

Defense and Intelligence

Credentialing

Infrastructure

- Over 1200 devices under management
- 62 cabinets
- Virtualization on IBM P795s/980s
- XIV's IDENT (13 devices)
- SVC's (1 devices)
- Tape Libraries (2 devices)

IDENT Transactions

- IDENT has 265 million unique identities
 - Approximately 2 million transactions per day
 - 400,000 Biometric requests
 - 1.6 million Biographic requests
 - 36 million enrolled Faces
 - 3 million Irises
- Average IDENT System Operational Availability 99.8%

IDENT Vendor Support

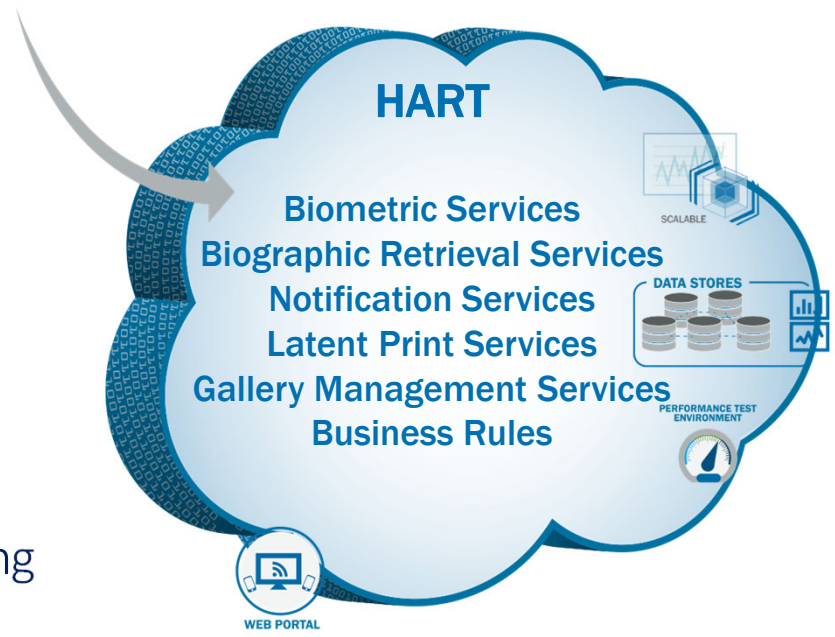
- Services and support* through DC1 include, but are not limited to:
 - IBM (hardware & operating system)
 - Oracle (database & virtual machines)
 - HP (hardware)
 - Dell (hardware)
 - Thales/Cogent (matcher tier)
 - NEC (matcher tier)

*These are in addition to hosting/professional services

Component Perspective - OBIM Future Expectations

Patrick Nemeth, OBIM

- Data Center 1 footprint expansion during 3-4 year transition
- Cloud implementation and data migration; small DC1 footprint remains
- Homeland Advanced Recognition Technology
- New services – Including Enterprise Data Warehouse, Web Portal, Analytics, Reporting, Disaster Recovery Site
- Cloud services
 - Platform Services
 - Data Backup and Recovery
 - Data Replication
- HART Operation Services
 - Operations & Maintenance
 - Break Fix
 - Monitoring & Troubleshooting
 - Security Team Support
 - Deployment of new Capabilities



Component Perspective - ICE Cloud

Rich Clark, ICE OCIO

- ❑ Diversity of applications
 - ❑ Back office to mission front line
 - ❑ 24x7 support requirements

- ❑ Drivers for ICE cloud migration
 - ❑ Constraints within exiting data center prompted an aggressive timeline to relocate
 - ❑ Approximately 85% of ICE systems were located in targeted DC1 zone
 - ❑ Leveraged two years of cloud planning and development, including DevOpsSec capabilities

- ❑ Multi-cloud service provider presence
- ❑ Predominately “lift and shift” migrations to meet DC1 reduction goals
- ❑ Suspended all but highest priority/most critical changes while migrating
- ❑ Internal resources used to perform the migration

Component Perspective - ICE Cloud

Rich Clark, ICE OCIO

- ❑ Agile approach – the only thing that we were assured of was change
 - ❑ Different tolerances for risk and/or ambiguity for each application
 - ❑ Focused on systematic reduction of volume and/or impact of changes the closer each application was to its migration

- ❑ Halfway through migration, ICE had to spin up in an entirely new cloud service provider region
 - ❑ Automation allowed duplication of ICE cloud presence inside another region
 - within six weeks

- ❑ Despite limitations and concerns with lift and shift, ICE recognized significant benefits
 - ❑ Incremental progress and improvements continue
 - ❑ DevOpsSec adoption ensures continued improvement

Acquisition Next Steps

Breean Jaroski, DHS OCPO

- ❑ Communication
 - ❑ Industry Day Presentation will be made available on beta.SAM.gov
 - ❑ One-on-one engagements will be held in the April timeframe.
 - ❑ DHS will continue to provide frequent updates on the subject requirement via beta.SAM.gov

- ❑ Updated Notional Timeline
 - ❑ Industry Day Slides and Written Responses Published – 03/12/2020
 - ❑ One-on-One Sessions – April 2020
 - ❑ Draft Solicitation Released – May 2020
 - ❑ Comments Due from Industry – May 2020
 - ❑ Industry Day II (Webinar) – June 2020
 - ❑ Solicitation Released – July 2020
 - ❑ Proposal Due Date – August 2020
 - ❑ Anticipated Award – October 2020

Panel Discussion OCIO, OBIM, ICE & OCPO

Question & Answer Session

OCPO

1. The Government has been very informative to industry with the Jan 9th release of planned activities through the release of the draft solicitation in May. Will the Government please provide additional information on the planned procurement schedule such as the estimated release of the live solicitation, estimated submission timeframes, and an estimate of the planned award date?
2. Will the Government please identify whether a specific contract vehicle has been selected or, if not, what vehicles are being considered for the procurement?
3. Will the Government confirm that this contract is mandatory for DHS and all components?

OCPO

4. How many awards does DHS intend to make for this acquisition?
5. Is there going to be a set aside?
6. What type of contract does DHS expect to specify?
7. Will DHS consider awarding different contract types to different objectives?
8. Will DHS consider multiple awards to meet specific objectives / service requirements if demonstrated to be beneficial to the government?

OCPO

9. Will the Government please provide an estimate of the planned Small Business goals, overall and by category, for this solicitation?
10. Will the Government please comment on the plans for the pricing structure, for example "Unit of Service" FFP CLINS for service consumption and a T&M rate card for project work as it may require over the life of the contract?
11. DC1 Contract Transition Approach: Is the government considering putting out a concurrent opportunity for DC2 per the RFI or has that opportunity been put on hold? If a DC2 effort is going to be released concurrently (or soon) please provide additional information on how that effort relates to this and the projected scope.

OCPO

12. Would the Government consider publishing an acceptable price range for the anticipated acquisition in order to prevent "low ball" bidders?
13. For a program of this size, scope, and complexity, will the Government please consider at least a 60 day response time for proposal submission?
14. Will the Government please identify in the April release any 3rd party support contractors that are engaged to support the solicitation process?
15. DCCO Contract and Acquisition Strategy: Will DHS establish a reading room and the necessary controls to allow DCCO bidders the opportunity to review detailed DC-1 system requirements and documents that would inform industry more thoroughly into the workloads that will be part of the DCCO scope? If not, how does DHS plan to inform industry of this information

OCIO

1. DCCO Contract and Acquisition Strategy: The NASA facility support services described in the section titled Background of the Executive Summary have a separate NASA contract that the costs get flowed to DHS. What is the plan going forward in terms of how DHS will recover these NASA costs? Will DCCO customers bear these costs or will HQ absorb these costs? What will be the DCCO contractor's involvement in the recovery of these costs?
2. DCCO Managed Services: Will any of the services being contemplated under DCCO be performed as a Managed Service, e.g. where the DCCO contractor would invest its capital to cover the labor, equipment and software to perform the capability, and recover its investment over time?

OCIO

3. DCCO Contract and Acquisition Strategy: If the TIC and PEP are not within the DCCO scope, how will the DCCO contractor interact with these functions?
4. DCCO Contract and Acquisition Strategy: Will the DCCO contract include the network transport between DC1, "other associated locations", Colocation Service Providers, and Commercial Cloud Service Providers?
5. In the event of a hybrid cloud, do you plan on migrating to multiple CSP's or a single CSP?

OCIO

6. Does the DHS DC at Stennis service only DHS wide requirements or does it also provide IT services supporting DHS agencies – such as Coast Guard, CBP, TSA, etc. – specific requirements?
7. DCCO Contract and Acquisition Strategy: Will the management and optimization of the DHS Trusted Internet Connection (TIC) and Policy Enforcement Points (PEP) be included in the scope of DCCO?
8. DCCO Contract and Acquisition Strategy: Will DCCO bidders be able to propose which Commercial Cloud Service Providers are included in their solution or will DHS inform industry which Cloud Service Providers they will utilize?

OCIO

9. DCCO Contract and Acquisition Strategy: Will DCCO bidders be able to propose which Colocation Service Providers are included in their proposed solution or will DHS inform industry which Colocation Service Providers they will utilize?
10. DC1 Contract Transition Approach: Are DHS federal staff the only personnel running data center (DC1) operations for DHS or is there also a current contractor supporting this work? If there is contractor supporting this effort please provide the name of the contractor.
11. DC1 Contract Transition Approach: Please clarify if DHS is asking offerors to take over operation/maintenance of DHS' hardware/software within the data center (DC1). Typically a company that specializes in cloud engineering, migration, and optimization will not also have qualifications to run and fully staff a data center. Likewise, it's rare that companies that run data centers also specialize in cloud migration/optimization.

OCIO

12. DCCO Contract and Acquisition Strategy: Is DHS currently contracted with any Co-Location Service Provider that the DCCO contractor will be expected to interface with?
13. For a program of this size, scope, and complexity, will the Government please comment on their plans for post-award transition timeframes?

Thank You for Participating in the DCCO Industry Day!



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Security

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