



Modernize IT to Increase Productivity and Security FY 2018 Q2 Update

Goal Leaders

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Goal Statement

- The Executive Branch will build and maintain more modern, secure, and resilient information technology (IT) to enhance mission delivery and productivity – driving value by increasing efficiencies of Government IT spending while potentially reducing costs, increasing efficiencies, and enhancing citizen engagement and satisfaction with the services we provide.



Challenges

- Limited accountability for achieving enterprise-wide outcomes that enhance IT service effectiveness and reduce cybersecurity risks.
- Slow adoption of cutting edge commercial technologies due to onerous acquisition and authorization processes.
- Federal agencies employ patchwork network architectures and rely on legacy systems that are costly and difficult to secure and upgrade.



Opportunities

- Expand the use of modern commercial technologies that are effective, economical, and secure.
- Reduce the impact of cybersecurity risks by safeguarding IT systems, sensitive data, and networks.
- Leverage common solutions and innovative practices to improve efficiency, increase security, and ultimately meet citizens' needs.



A multi-pronged IT modernization strategy between OMB and Agency Partners to achieve the desired results this Administration expects and our citizens deserve.

Realize the recommendations made in the Report to the President on Federal IT Modernization in order to enhance the functionality of citizen services and drive cost efficiencies of Government operations.

Implement the Modernizing Government Technology Act to enable agencies to establish IT working capital funds that can direct cross-agency dollars to IT modernization projects, and establishing a centralized fund that will invest in modernization.

Develop a new Federal cloud adoption strategy to provide agencies the guidance and flexibilities needed to move safely, securely and rapidly to the cloud and decommission antiquated internal agency systems.

Strengthen the Federal cybersecurity posture in order to protect valuable information systems, aligning agency security outcomes with Federal cybersecurity strategies.

Collaborate with the Office of American Innovation and the General Services Administration to establish Centers of Excellence to provide technical expertise and strategic acquisition support to help agencies perform top to bottom modernization activities.

Work with the Office of Personnel Management to fundamentally overhaul our recruitment, retention, and reskilling strategies to bring more top technical talent into the Government, improve the technology and cybersecurity capabilities of our current workforce.





Modernizing Federal IT will enhance mission effectiveness and reduce mission risks through a series of complementary initiatives that will drive sustained change in Federal technology, deployment, security, and service delivery.



Enhance Federal IT and Digital Services

Improve the quality and efficiency of critical citizen-facing services by removing the barriers for rapidly adopting the best-in-class commercial solutions to better meet the needs of citizens.



Reduce Cybersecurity Risks to the Federal Mission

Mitigate the impact of risks to Federal agencies' data, systems, and networks by implementing cutting edge cybersecurity capabilities.



Build a Modern IT Workforce

Enable agencies to develop and empower an IT workforce with the skills to achieve modernization goals and support up-to-date technology.



Goal Structure: Enhance Federal IT and Digital Services



Enhance the effectiveness and efficiency of government services, leveraging data-driven, customer-focused strategies to modernize legacy systems, consolidate common agency services, adopt new shared service models, and embrace commercial cloud solutions.

STRATEGIES



Removing Barriers, Accelerating Adoption

Reduce policy and process burdens to help agencies integrate enhanced technologies to improve the delivery of services to the Government's customers.



Modernize Federal IT Delivery

Shift Government to a modern IT service delivery underpinned by user satisfaction and the provision of services by those poised to provide them.



Embrace Modern Technology Solutions

Adopt new and innovative technologies to deliver services more efficiently, effectively, and more readily.

OUTCOMES

- Enable Enhanced, Secure Computing Solutions
- Drive Technology Modernization Projects
- Streamline System Authorization

- Modernize the Services Model
- Focus on the User
- Strengthen Identity Management
- Prioritize HVA Modernization

- Adopt Cost-Effective Technology Solutions
- Promote Access to Shared Solutions



This goal has been updated to align with the structure of the Federal Government's digital modernization strategy. There have been numerous other updates over the last quarter:

- The Technology Modernization Fund (TMF), which supports the transformation of agency IT to improve mission execution and delivery of services to the American public, has awarded funding for three projects (for more information see <https://tmf.cio.gov/projects/>)
- Implemented the first paperless submission and review process at the Small Business Administration for numerous programs, including for Women Owned Small Businesses and the 8(a) Business Development Program
- Trusted Internet Connection (TIC) pilots have been launched to examine improved solutions for accessing cloud services while maintaining cybersecurity.
- OMB released a draft update to Federal identity policy for public comment. This revised policy will consolidate existing requirements and transition the government to an outcome focused approach for improving identity and access management.
- Approximately 45% of civilian CFO Act agency email boxes are now serviced by cloud-based solutions
- CDM Phase 1 tools are about 60% deployed across the Federal Government and Phase 2 tools are approximately 30% deployed





Key Milestones: Removing Barriers, Accelerating Adoption



Federal access to innovative technologies has been hampered by outdated policies and IT acquisition processes. The Removing Barriers, Accelerating Adoption strategy is designed to help agencies adopt advanced technology solutions to better deliver services to the public.

The following milestones will modernize the acquisition of Federal telecom services, alleviate policy obstructions, and move away from compliance-based processes:

Strategic Outcome	Near Term Key Milestones	Milestone Due Date	Milestone Status	Owner
<u>Enable Enhanced, Secure Computing Solutions:</u> Empower agencies to utilize the full benefits of secure cloud-based computing solutions to strategically drive mission objectives . This includes updating to better enable smart, risk-based decisions before performance measures can be captured.	OMB has issued an update to current Cloud Strategy document	Q4FY18	On track	OMB, DHS, GSA
	OMB has instituted standard cloud contracting guidance		On track	
	OMB has rationalized the Data Center Optimization Initiative (DCOI) with the Cloud Strategy		On track	
	Update TIC/EINSTEIN structure to accommodate new cloud access options		On track	
<u>Drive Technology Modernization Projects:</u> Provide flexible means by which agencies can finance and undertake IT modernization projects through avenues such as the TMF, working capital funds, and regular appropriations.	The Technology Modernization Board has allocated appropriated funds to a broad portfolio of projects of varying risk levels	Q4FY20	On track	Agencies, Board
	100% of TMF project repayment schedules are on time		On track	
	100% of TMF project completion schedules are on time		On track	
	Through increased engagement with agency CIOs, fully rationalize modernization to the application level	Q4FY18	On track	
<u>Streamline System Authorization:</u> Replace drawn out compliance-based system authorization processes with nimble, risk-based decision making to drive effective and cost-effective utilization of commercial technology .	OMB, DHS, and GSA have issued a strategic plan for streamlining ATO processes, including FedRAMP, based on common needs	Q4FY18	On track	Agencies, OMB, GSA





Key Milestones: Removing Barriers, Accelerating Adoption



Many of these activities are still in the early phases of development, requiring updated guidance to be issued to set expectations and requirements for agency implementation. The following progress has been made thus far:

Enable Modern, Secure Computing Solutions

- Two full-scale Trusted Internet Connection (TIC) pilots have been launched to examine improved solutions for accessing cloud services without negatively impacting security
- Three smaller scale pilots have been launched as well

Drive Adoption of Technology Modernization Projects

- The Technology Modernization Fund (TMF) has awarded funding for three projects (for more information see <https://tmf.cio.gov/projects/>)
 - UNISYS Mainframe Migration at the Department of Housing and Urban Development
 - Enterprise Cloud Email at the Department of Energy
 - Farmers.gov Portal at the Department of Agriculture
- The Technology Modernization Board is reviewing applications for high priority projects

Streamline System Authorization

- Five low impact software-as-a-service (SaaS) products are undergoing review as part of the streamlined [FedRAMP Tailored](#) process, which is designed to speed the rapid deployment of cloud solutions





Key Milestones: Modernize the Federal IT Delivery Model



Modernizing Federal IT requires a reassessment of the way the Government currently delivers IT services and how it can be improved. The Modernize the Federal IT Delivery Model strategy places a focus on the user experience and promotes the idea that services should be provided by those best suited to achieve the mission.

The following milestones will drive an increased focus on usability of Federal IT and information services and reduce the fragmentation of Federal cybersecurity:

Strategic Outcome	Near Term Key Milestones	Milestone Due Date	Milestone Status	Owner
<u>Modernize the Services Model</u> : Improve the way services are provisioned within the government, <i>promoting models in which under performing or under resourced agencies can purchase services elsewhere.</i> SOC as a Service will be used as a test case.	OMB has issued updated CPIC guidance which includes staffing and resourcing of agency Security Operation Centers (SOCs)	Q3FY18	On track	OMB, GSA
	OMB has issued a questionnaire to gauge the effectiveness of agency SOC's	Q3FY18	On track	
	GSA has issued an RFI regarding provision of SOC services from private sector entities	Q4FY18	On track	
<u>Focus on the User</u> : Encourage the <i>use of user centered design in the development of Federal IT products and digital services</i> , including capturing reliable and actionable information to improve overall user experience.	Metrics and assessment criteria to determine the extent to which agencies are utilizing customer feedback to improve the delivery of digital services have been established	Q4FY18	On track	OMB, GSA
	Federal design standards and best practices for user centered design for Federal websites and digital service have been issued	Q4FY19	On track	OMB, GSA
	Aligns with the <u>Improving Customer Experience</u> CAP Goal			OMB
<u>Strengthen Identity Management</u> : Enable agencies to implement <i>modern and privacy enhancing identity, access, and credentialing technologies</i> that align with industry-leading practices.	OMB has issued a draft identity policy for public comment	Q3FY18	On track	OMB
	OMB has issued a final identity policy	Q4FY18	On track	
<u>Prioritize High Value Asset (HVA) Modernization</u> : Promote the <i>modernization and security of the Federal Government's highest value information assets</i> in a prioritized fashion.	OMB has issued an update to current HVA guidance	Q3FY18	On track	OMB, DHS
	DHS has issued updated guidance on HVA classification and protection			
	A Federal strategy is set forth to categorize high value data	Q4FY19	On track	OMB





Key Milestones: Modernize the Federal IT Delivery Model



Many of these activities are still in the early phases of development, requiring updated guidance to be issued to set expectations and requirements for agency implementation. The following progress has been made thus far:

Modernize the Services Model

- Security operations have been identified as a priority for model improvement, and a survey to collect capability and resourcing information is being finalized and will be conducted through the CISO Council
- GSA and OMB are compiling technical requirements for public and private sector organizations to offer SOC as a Service

Focus on the User

- OMB is working with agency partners to develop initial metrics to improve the quality and value of user satisfaction data

Strengthen Identity Management

- OMB released a draft update to its Federal identity policy for public comment. This revised policy will consolidate existing requirements and transition the government to an outcome focused approach for improving identity and access management.

Prioritize High Value Asset (HVA) Modernization

- OMB is finalizing guidance on the classification and protection of HVAs





Key Milestones: Embrace Modern Technology Solutions



The Government must work to adopt technologies that are not only more efficient, but deliver services to the public in a way that focuses on the user. The Embrace Modern Technology Solutions strategy seeks to promote the adoption of innovative technology solutions to drive improved outcomes for the customer.

The following milestones will drive the development and integration of advanced technology solutions:

Strategic Outcome	Near Term Key Milestones	Milestone Due Date	Milestone Status	Owner
<u>Adopt Cost-Effective Technology Solutions:</u> Increase the utilization of technology which drives greater efficiency in the conduct of government business and communication.	Federal agencies have moved to cloud-based solutions to increase the efficiency of email inboxes	Q4FY20	On track	Agencies
<u>Promote Access to Shared Solutions:</u> Promote the adoption of tools and services that allow the utilization of government economies of scale and service specific expertise.	Aligns together with the Sharing Quality Services CAP Goal			OMB
	OMB has issued updated Continuous Diagnostic Mitigation (CDM) guidance which enhances the service acquisition model for Phases 2 and 3	Q4FY18	On track	
	OMB, GSA, and their Federal partners have established guidance for the rationalization of shared IT services as more become available	Q4FY19	On track	OMB, GSA, Others



Key Milestones: Embracing Modern Technology Solutions



Many of these activities are still in the early phases of development, requiring updated guidance to be issued to set expectations and requirements for agency implementation. The following progress has been made thus far:

Adopt Cost-Effective Technology Solutions

- Approximately 45% of civilian CFO Act agency email inboxes have transitioned to cloud-based solutions

Promote Access to Shared Security Solutions

- CDM Phase 1 tools are about 60% deployed across the Federal Government and Phase 2 tools are approximately 30% deployed
- An update to existing CDM policy to better integrate risk-based decision making is currently undergoing final review



Goal Structure: Reduce Cybersecurity Risks to the Federal Mission



Mitigate the risk and impact of threats to Federal agencies' data, systems, and networks by implementing cutting edge cybersecurity capabilities.

STRATEGIES



Manage Asset Security

Implement capabilities that provide observational, analytical, and diagnostic data of an agency's cybersecurity.



Limit Personnel Access

Implement credential and access management capabilities that ensure users only have access to the resources necessary for their job function.



Protect Networks and Data

Implement advanced network and data protection capabilities to protect agency networks and sensitive government and citizen data.



FY18Q2 Summary of Progress: Reduce Cybersecurity Risks to the Federal Mission



Agencies continue to make progress in implementing key cybersecurity capabilities, addressing the ongoing threats and vulnerabilities to the Federal Mission. For agency level detail, see the [Cybersecurity KPIs](#) at [performance.gov](#)

OMB and DHS, in collaboration with agency partners, reviewed and updated the [FISMA CIO metrics](#) to ensure alignment with the priorities outlined in the *Report to the President on Federal IT Modernization*, other sections of the President's Management Agenda.

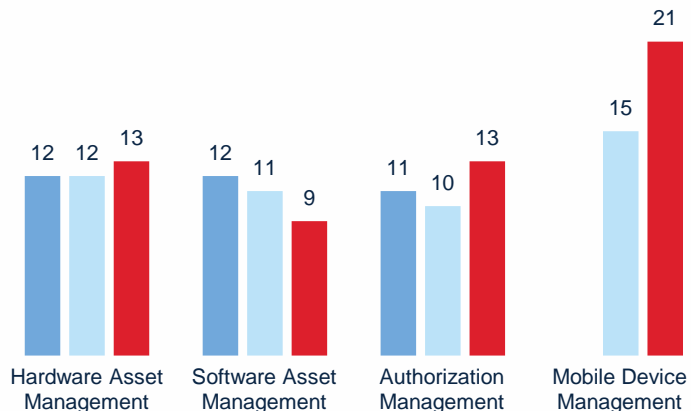
These changes (effective July 2018) include a greater focus on HVAs and enterprise-level visibility of information, but also removed duplicative or unassessed metrics in order to reduce burden. Agency performance ratings are anticipated to shift next quarter due to these updates.

Performance Summary

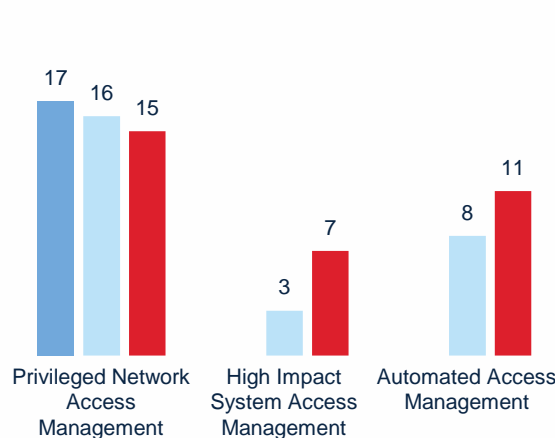
Number of civilian CFO Act agencies (out of 23) meeting target

■ Q4FY17 ■ Q1FY18 ■ Q2FY18

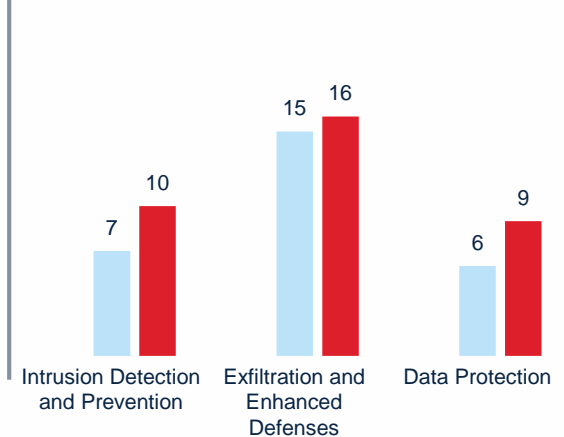
Manage Asset Security



Limit Personnel Access



Protect Networks and Data





Key Milestones: Manage Asset Security



Implement capabilities to allow agencies to understand the assets and users operating on their networks.

Delays in implementation of government-wide tools have led to uneven implementation of these capabilities. All agencies will seek to meet the following targets by 2020:

Key Milestones*	Milestone Due Date	Milestone Status	Change from last quarter	Owner	Anticipated Barriers or other Issues Related to Milestone Completion
<u>Hardware Asset Management</u> : 95% of hardware assets are covered by a capability to detect and alert upon the connection of an unauthorized hardware asset	Q4FY20	On track	Better	Agencies, OMB	<i>Delays in implementation of government-wide tools have led to uneven implementation of ISCM capabilities</i>
<u>Software Asset Management</u> : 95% of software assets are covered by a whitelisting capability	Q4FY20	On track	Worse	Agencies, OMB	<i>Delays in implementation of government-wide tools have led to uneven implementation of ISCM capabilities</i>
<u>Authorization Management</u> : 100% of High and Moderate Impact Systems are covered by a valid security ATO	Q4FY20	On track	Better	Agencies, OMB	
<u>Mobile Device Management</u> : 95% of mobile devices are covered by a capability to remotely wipe contents if the device is lost or compromised	Q4FY20	On track	Better	Agencies, OMB	



*These milestones represent key areas within the Federal Information Security Modernization Act of 2014 (FISMA) Chief Information Officer metrics. DHS programs, including Continuous Diagnostics and Mitigation (CDM) and EINSTEIN, may provide some of these capabilities to agencies.



Key Milestones: Limit Personnel Access



Credential and access management capabilities allow agencies to understand who is on their networks and limit users' access to the information necessary to perform their work.

The updated strategy moves from a focus on multifactor authentication (FY 2012 - FY 2017) to the more advanced issue of access management. All agencies will seek to meet the following targets by 2020:

Key Milestones*	Milestone Due Date	Milestone Status	Change from last quarter	Owner	Anticipated Barriers or other Issues Related to Milestone Completion
<u>Privileged Network Access Management</u> : 100% of privileged users are required to use a PIV card or AAL3 multifactor authentication method to access the agency's network**	Q4FY18	On track	Worse	Agencies, OMB	<i>Overall Federal implementation is currently approximately 99%, with small numbers of privileged users still awaiting appropriate credentials</i>
<u>High Impact System Access Management</u> : 90% of High Impact Systems require all users to authenticate using a PIV card or AAL3 multifactor authentication method	Q4FY20	On track	Better	Agencies, OMB	<i>OMB is in the process of updating guidance regarding the protection of HVAs; upon the issuance of this policy, metrics associated with the protection of high impact systems will shift to HVAs</i>
<u>Automated Access Management</u> : 95% of users are covered by an automated, dynamic access management solution that centrally tracks access and privilege levels	Q4FY20	On track	Better	Agencies, OMB	<i>Decentralized identity management at agencies is a significant impediment to improving access management</i>

* These milestones represent key areas within the Federal Information Security Modernization Act of 2014 (FISMA) Chief Information Officer metrics. DHS programs, including Continuous Diagnostics and Mitigation (CDM) and EINSTEIN, may provide some of these capabilities to agencies.

** This is a continuation of the FY 2015-2017 Cybersecurity CAP Goal; as such, agencies are expected to complete this metric by Q4FY18





Key Milestones: Protect Networks and Data



Advanced network and data protection capabilities defend agency networks and systems from malicious actors and the potential loss of government information.

The three components of Intrusion Detection and Prevention, Exfiltration and Enhanced Defenses, and Data Protection are new, and agencies will seek to meet the following targets by 2020:

Key Milestones*	Milestone Due Date	Milestone Status	Change from last quarter	Owner	Anticipated Barriers or other Issues Related to Milestone Completion
<u>Intrusion Detection and Prevention</u> : At least 4 of 6 Intrusion Prevention metrics have met an implementation target of at least 90% and 100% of email traffic is analyzed using DMARC email authentication protocols	Q4FY20	On track	Better	Agencies, OMB	
<u>Exfiltration and Enhanced Defenses</u> : At least 4 of 5 Exfiltration and Enhanced Defenses metrics have met an implementation target of at least 90%	Q4FY20	On track	Better	Agencies, OMB	
<u>Data Protection</u> : At least 5 of 7 Data Protection metrics have met an implementation target of at least 90%	Q4FY20	On track	Better	Agencies, OMB	OMB is in the process of updating guidance regarding the protection of High Value Assets (HVAs); upon the issuance of this policy, metrics associated with the protection of high impact systems will shift to HVAs



*These milestones represent key areas within the Federal Information Security Modernization Act of 2014 (FISMA) Chief Information Officer metrics. DHS programs, including Continuous Diagnostics and Mitigation (CDM) and EINSTEIN, may provide some of these capabilities to agencies.



Enable Federal agencies to build a workforce with modern technology skills.

STRATEGIES



Assessment and Planning

Identify workforce position and skill gaps using better data and develop strategies to address those gaps.



Recruit and Retain Exceptional Talent

Recruit and retain top talent by offering competitive pay and workplace flexibilities.



Reskill the Workforce

Identify existing programs or leverage new programs to offer opportunities for employees to develop new skills to better address future Government and citizen needs.



Many workforce activities are still in the early phases of development, requiring updated guidance to be issued to set expectations and requirements for agency implementation. The following progress has been made thus far:

Implementation of the Federal Cybersecurity Workforce Assessment Act

- Agencies are on target to identify and code federal civilian positions performing information technology, cybersecurity, or other cyber-related functions.
- OPM has issued guidance for identifying, addressing, and reporting critically needed cybersecurity work roles

Human Capital Strategic Planning

- Agencies are currently completing updates to their Human Capital Strategic Plans to align with the President's Management Agenda and Agency Priority Goals
- OMB and OPM continue to work collaboratively with federal agencies to identify successful recruitment, retention, and reskilling initiatives that may be piloted government-wide.

Chief Information Officer (CIO) and Chief Human Capital Officer (CHCO) Councils

- The CIO and CHCO councils are working jointly to develop and execute on federal workforce initiatives for FY18 and FY19. Additional updates may be found at CIO.gov and/or CHCO.gov.
- The CIO Council has engaged multiple academic institutions to explore existing IT and cybersecurity curriculums available to federal employees.
- Private sector engagement options are being explored to evaluate other federal education and training opportunities.

Market-Informed Pay

- DHS and OPM working toward a market-informed pay and compensation system for DHS cybersecurity personnel





Key Milestones: Build a Modern IT Workforce



Invest in recruiting, retaining, and reskilling IT and cybersecurity talent to support mission outcomes and deliver more effective, efficient, and secure Government services.

The following milestones will enhance the Federal IT and Cybersecurity workforce:

Key Milestones	Milestone Due Date	Milestone Status	Change from last quarter	Owner	Anticipated Barriers or other Issues Related to Milestone Completion
All agencies identify and quantify workforce positions and skill gaps using the National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework per P.L. 114-113	Q3FY18	On track	Better	Agencies, OPM, OMB,	
Each agency CIO and CHCO must jointly identify two position or skills gap priorities and incorporate them into to the agency's Human Capital Operating Plan, which will be shared with OMB. Actions to address these two gaps must be executed no later than FY19	Q1FY19	On track	Better	Agencies, OPM, OMB	
OPM will provide agencies Federal Employment Viewpoint Survey and other workforce data to aid in workforce planning. OPM, in collaboration with CHCO and CIO councils, will develop a standard dashboard to be used by all agencies to track and analyze workforce data that facilitates agile operations	Q4FY18	Not started	No change	Agencies, OPM, OMB,	
Engage industry and academia to develop Federal workforce planning strategies that include initiatives to reskill and redeploy the existing workforce to achieve mission results. The CHCO and CIO councils shall jointly present recommendations to OMB no later than FY19	Q2FY19	On track	Better	Agencies, OPM, OMB, CIO Council, CHCO Council	
Develop a market-informed pay and compensation strategy for cybersecurity and other mission critical IT positions to improve recruitment and retention	Q2FY19	On track	Better	Agencies, OPM, OMB	



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Department of Homeland Security

Numerous DHS programs support the Reduce Cybersecurity Risks to the Federal Mission strategy. DHS has established an Agency Priority goal (APG) to Strengthen Federal Cybersecurity with the FY 2019 President's Budget.

- The APG measures the effectiveness of several DHS cybersecurity programs, including: Continuous Diagnostics and Mitigation (CDM), National Cybersecurity Protection System (NCPS), the High Value Asset Program, Cyber Hygiene Scanning, and Hunt and Incident Response Teams (HIRT).
- DHS' APG supports this CAP Goal by providing tools and services that help agencies achieve the targets set forth in all three components of the Reduce Cybersecurity Risks strategy.

General Services Administration

The Modernize the Stack and Embrace Cloud Solutions portion of the CAP Goal rely on GSA as a close partner to help Federal agencies acquire and adopt modern IT products and services.

- Federal Acquisition Service (FAS)
 - Technology Transformation Service (TTS)
- Office of Government-wide Policy (OGP)

Interagency Councils

- CIO Council
- CHCO Council
- CISO Council
- Small and Micro Agency Council

Department of Commerce

- National Institute of Standards and Technology (NIST)

Office of Personnel Management

- Employee Services (ES)

U.S. Department of Agriculture

- IT Modernization Partner

