





Modernize IT to Increase Productivity and Security

Goal Leaders

Steve Censky, Deputy Secretary, United States Department of Agriculture

Chris Liddell, Office of American Innovation, Executive Office of the President

Suzette Kent, Federal Chief Information Officer, Office of Management and Budget





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.





Goal Leadership

Lead - Executive Office of the President

Office of Management and Budget (OMB)

LEAD:

Suzette Kent, Federal Chief Information Officer

KEY PERSONNEL:

Margie Graves, Deputy Federal Chief Information Officer

Grant Schneider, Acting Federal Chief Information Security

Officer; Senior Director - Homeland, NSC Cybersecurity

Directorate

Peter Warren, Associate Director for Personnel and Performance

Management

Office of American Innovation (OAI)

LEAD:

Chris Liddell, Director, American Technology Council

U.S. Digital Service (USDS)

LEAD:

Matt Cutts, Acting Administrator

KEY PERSONNEL:

Eddie Hartwig, Deputy Administrator

Supporting Agencies

General Services Administration (GSA)

LEAD:

Emily Murphy, Administrator of General Services

KEY PERSONNEL:

Allison Brigati, Deputy Administrator

Alan Thomas, Commissioner, Federal Acquisition Service

Joanne Collins-Smee, Deputy Commissioner, Technology Transformation Service

Department of Homeland Security (DHS)

LEAD:

Christopher Krebs, Undersecretary Nominee, National Programs and Protection Directorate

KEY PERSONNEL:

Jeanette Manfra, Assistant Secretary, Cybersecurity and Communications (CS&C)

Richard Driggers, Deputy Assistant Secretary, CS&C

Mark Kneidinger, Director, Federal Network Resilience

CAP Partner Agency

Department of Agriculture (USDA)

LEAD:

Steve Censky, Deputy Secretary

KEY PERSONNEL:

Gary Washington, Chief Information Officer

Goal Pillars



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 in the <u>Report to the President on Federal IT Modernization</u> to allow for greater utilization of shared services, consolidated infrastructure, and cloud-based collaboration tools that can deliver improved functionality and drive cost efficiencies to improve Government operations and citizen services.

Implement the <u>Modernizing Government Technology Act</u> to enable agencies to establish IT working capital funds that can direct cross-agency dollars to IT modernization projects, and establishing a centralized \$500 million Technology Modernization Fund (pending appropriations) that will invest in modernization.

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

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.



Goal Structure

Modernizing Federal IT will enhance mission effectiveness and reduce mission risks through a series of complementary activities that culminate in 2022.



Enhance Mission Effectiveness

Improve the quality and efficiency of critical citizen-facing services by modernizing the IT stack and removing the barriers for rapidly adopting the best-in-class commercial solutions.



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 Mission Effectiveness

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



Modernize the Stack

Retire legacy IT systems, update systems that must remain on premise, and direct cost savings and lessons learned to achieve mission-driven outcomes.



Embrace Cloud Solutions

Rapidly implement cost-effective, cloud-based, commercial IT solutions, such as E-mail and collaboration tools, while also reducing the Government's IT footprint.



Mitigate Project Delivery Risks

Establish key performance measures to evaluate the status of project delivery and prevent project failure through early intervention, and level of customer satisfaction to inform the level of effort and allocation of resources.





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.



Protect Networks and Data

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



Limit Personnel Access

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





Goal Structure: Build a Modern IT Workforce

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

Offer opportunities for our employees to develop new skills to better address future Government and citizen needs.





Key Milestones: Modernize the IT Stack

Utilize new opportunities to drive foundational technology changes that will improve critical citizen services and increase efficiency.

Key Milestones	Milestone Due Date	Milestone Status	Change from last quarter	Owner	Anticipated Barriers or other Issues Related to Milestone Completion								
Enterprise Infrastructure Solutions (EIS)													
All agencies submit Agency Transition Plans (ATPs) to modernize its network infrastructure to OMB.	Q2FY18	In Progress	N/A	OMB	Agencies are on a tight schedule to migrate services to EIS and may defer modernizing just to meet schedule								
All agencies release less than 3 Fair Opportunity solicitations.	Q2FY18	In Progress	N/A	Agencies	Agency failure of planning requirements and time constraints to meet FY2020 migration deadline								
Agencies release their consolidated fair opportunity task order solicitations on according to their ATP schedule.	Q4FY18	Not Started	N/A	OMB, Agencies	Modernizing and consolidating services may require additional time for planning requirements								
	Technology	Modernizatio	n Fund (TMF)*										
Launch at least 3 initial projects selected for funding through the Technology Modernization Fund	Q3FY18	In Progress	N/A	OMB OFCIO, GSA	Dependent on agencies submitting valid project proposals and identifying methods to repay the Technology Modernization Fund investment								
100% of initially funded projects demonstrate successful completion of initial milestones	Q4FY18	Not Started	N/A	OMB OFCIO, GSA	Insufficient team strength or delays in deployment of technical assistance resources or acquisition execution								
100% of project repayment schedules are on time	Q4FY19	Not Started	N/A	Agencies, GSA	Successful project execution, leading to cost savings.								
100% of project completion schedules are on time	Q4FY19	Not Started	N/A	Agencies, GSA	Successful project execution								



Key Milestones: Embrace Cloud Solutions

Leverage and secure the commercial cloud for the right services; improve the on-premises alternative.

Key Milestones	Milestone Due Date	Milestone Status	Change from last quarter	Owner	Anticipated Barriers or other Issues Related to Milestone Completion								
Cloud and Email Migration													
At least 3 agencies without cloud email begin leveraging the Acquisition Tiger Team's "quick start" acquisition package to facilitate rapid license and migration service acquisitions	Q3FY18	In progress	N/A	OMB	Resource constraints on setting up number of Tiger Teams to meet agency demand								
Track agency migration to cloud email and use data engage agencies to facilitate migration	Q3FY18	Not Started	N/A	DHS & GSA	Agencies appropriately use this information target cloud email migration								
All agencies with cloud email develop initial set of standardized requirements as baseline for greater collaboration optimization	Q4FY18	Not Started	N/A	OMB, GSA	Enabling a central body to convene the appropriate stakeholders and receive agreement among the interagency on standardized requirements								
All agencies are using cloud email and cloud-based collaboration tools unless specific legal or mission constraints make it impossible	Q3FY19	Not Started	N/A	OMB, Agencies	Some Federal policies may need to be updated to sufficiently support migrations								
	Data C	Center Consol	idation*										
Agency submission of data center optimization initiative strategic plans	Q3FY18	Not Started	N/A	OMB, Agencies	Prioritization of Data Center Optimization and moving to the cloud within agencies and ensuring accountability								
Federal agencies demonstrate cost savings of \$2.7 billion or more	Q4FY18	Not Started	N/A	OMB, Agencies	Failure to realize cost savings from consolidation and closures performed to date								
100% of federal agencies' tiered data centers have power metering	Q4FY18	Not Started	N/A	Agencies									
All agency-operated tiered data centers achieve a power usage effectiveness (PUE) rating of 1.5 or below	Q1FY19	Not Started	N/A	Agencies									
Federal agencies close 471 tiered data centers and 4,006 non-tiered data centers	Q1FY19	Not Started	N/A	Agencies	Inability to migrate or deprecate systems and applications to enable closure; difficulties disposing of facilities identified for closure								





Key Milestones: Mitigate Project Delivery Risk

Ensure that all IT projects are delivering services in a timely and efficient manner that meet customer expectations

Key Milestones	Milestone Due Date	Milestone Status	Change from last quarter	Owner	Anticipated Barriers or other Issues Related to Milestone Completion								
Improve IT Project Delivery													
Redesign data collection efforts to more accurately capture IT investment performance data (e.g. schedule, cost, etc.)	FY19	In progress	N/A	OMB & GSA	Changes to existing data collection (e.g. CPIC) is slow; might meet resistance								
Establish new process for identifying and intervening on struggling or failing investments (e.g. TechStat)	Q3FY18	Not Started	N/A	OMB									
Develop models for identify existing failure and predicting future failure before it occurs	FY 19	Not Started	N/A	OMB									
	Improve	Customer Sa	ntisfaction										
Promote and facilitate the use of customer satisfaction & customer experience metrics into work flows through guidance and training	FY19	Not Started	N/A	OMB & GSA	PRA challenges might slow or stall progress								
Identify and aggressively address barriers that prevent the agencies from using customer satisfaction surveys	Q3FY18	Not Started	N/A	OMB & GSA	PRA challenges might slow or stall progress								
Develop plan to identify and standardize customer satisfaction metrics across government (e.g. CSAT, NPS, CES)	FY19	Not Started	N/A	OMB & GSA	PRA challenges might slow or stall progress								
Increase the usage of Digital Analytics Program (gov web analytics); and connect this web analytics data to existing IT budget and performance	FY19	In progress	N/A	OMB & GSA	Requires prioritization								





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
Intrusion Detection and Prevention: 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	In Progress	New, 7 agencies met	Agencies, OMB	
Exfiltration and Enhanced Defenses: At least 4 of 5 Exfiltration and Enhanced Defenses metrics have met an implementation target of at least 90%	Q4FY20	In Progress	New, 15 agencies met	Agencies, OMB	
<u>Data Protection</u> : At least 5 of 7 Data Protection metrics have met an implementation target of at least 90%	Q4FY20	In Progress	New, 6 agencies met	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





Protect Networks and Data: Q1 Update

	Octobe	er 2017 (FY 201	.7 Q4)	Januar	y 2018 (FY 201	8 Q1)		Change			
Agency	Intrusion Detection and Prevention*	Exfiltration and Enhanced Defenses	Data Protection	Intrusion Detection and Prevention*	Exfiltration and Enhanced Defenses	Data Protection	Intrusion Detection and Prevention	Exfiltration and Enhanced Defenses	Data Protection		
Commerce				5	4	3					
DHS				5	3	1					
DOT				5	4	3					
ED				3	5	3					
Energy				3	2	1					
EPA				3	3	4					
GSA				4	5	4					
HHS				3	3	2			Φ		
HUD		~		6	5	6		~			
Interior		2018		6	4	3		2018			
Justice		7.2		6	5	3					
Labor		New in FY		6	2	6		New in F≺			
NASA		.⊑ >		4	1	0		.⊑ >			
NRC		Şev Vev		5	5	2		Ş e			
NSF		_		4	4	5		_			
OPM				6	5	5					
SBA				1	5	4					
SSA				4	4	7					
State				5	5	4					
Treasury				4	5	2					
USAID				4	3	5					
USDA				6	5	3					
VA				6	3	1					
# Met Goal				7	15	6					



^{*} Marked as met if at least 4 of 6 metrics are met and if 100% of email traffic is analyzed using DMARC email authentication protocols (DHS BOD 18-01).



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
Hardware Asset Management: 95% of hardware assets are covered by a capability to detect and alert upon the connection of an unauthorized hardware asset	Q4FY20	In Progress	Unchanged from 12 agencies	Agencies, OMB	Delays in implementation of government-wide tools have led to uneven implementation of ISCM capabilities
Software Asset Management: 95% of software assets are covered by a whitelisting capability	Q4FY20	In Progress	Decrease from 12 agencies to 11	Agencies, OMB	Delays in implementation of government-wide tools have led to uneven implementation of ISCM capabilities
Authorization Management: 100% of High and Moderate Impact Systems are covered by a valid security ATO	Q4FY20	In Progress	Decrease from 11 agencies to 10	Agencies, OMB	
Mobile Device Management: 95% of mobile devices are covered by a capability to remotely wipe contents if the device is lost or compromised	Q4FY20	In Progress	New, 15 agencies met	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.





Manage Asset Security: Q1 Update

	(October 201	7 (FY 2017 Q	.4)	J	anuary 201	8 (FY 2018 Q	1)		Cha	ange	
Agency	Hardware Asset Management	Software Asset Management	Authorization Management*	Mobile Device Management	Hardware Asset Management	Software Asset Management	Authorization Management*	Mobile Device Management	Asset	Software Asset Management	Authorization Management	Mobile Device Management
Commerce	71%	64%	100%		65%	64%	100%	89%	-6%	0%	0%	
DHS	77%	95%	95%		81%	90%	91%	100%	4%	-5%	-4%	
DOT	95%	85%	78%		95%	85%	94%	94%	0%	-1%	16%	
ED	100%	100%	97%		100%	100%	97%	100%	0%	0%	0%	
Energy	85%	91%	96%		73%	90%	97%	99%	-12%	-1%	1%	
EPA	38%	63%	92%		50%	13%	0%	98%	12%	-50%	-92%	
GSA	100%	96%	100%		100%	95%	100%	100%	0%	-1%	0%	
HHS	93%	51%	97%		85%	43%	97%	84%	-8%	-8%	0%	
HUD	99%	100%	100%		99%	100%	100%	100%	0%	0%	0%	
Interior	79%	36%	100%	2018	57%	43%	100%	100%	-22%	7%	0%	2018
Justice	97%	98%	100%	7 20	96%	97%	100%	99%	-1%	-1%	0%	7
Labor	77%	100%	100%	ΕΥ	87%	97%	100%	100%	10%	-3%	0%	Ē
NASA	4%	0%	100%	New in	4%	0%	99%	100%	0%	0%	-1%	New in FY
NRC	98%	96%	100%	Š	99%	95%	96%	23%	1%	-1%	-4%	è
NSF	100%	54%	100%	_	100%	39%	100%	65%	0%	-14%	0%	_
ОРМ	100%	100%	100%		100%	100%	100%	100%	0%	0%	0%	
SBA	98%	10%	78%		98%	0%	83%	72%	0%	-10%	5%	
SSA	100%	100%	100%		100%	100%	100%	100%	0%	0%	0%	
State	82%	96%	45%		82%	97%	44%	100%	0%	1%	-1%	
Treasury	89%	94%	86%		86%	92%	84%	92%	-3%	-1%	-2%	
USAID	100%	98%	71%		100%	100%	100%	100%	0%	2%	29%	
USDA	95%	100%	82%		100%	100%	88%	100%	5%	0%	6%	
VA	20%	7%	98%		20%	8%	73%	92%	0%	1%	-25%	
Civilian CFO Act Average	67%	68%	91%		64%	65%	91%	96%	-3%	-3%	0%	
# Met Goal	12	12	11		12	11	10	15	0	-1	-2	

 $^{^{}st}$ Marked as met if both high and moderate impact systems are 100%. Value presented is smaller of the two.



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
Privileged Network Access Management: 100% of privileged users are required to use a PIV card or AAL3 multifactor authentication method to access the agency's network*	Q4FY18	In Progress	Decrease from 17 agencies to 16	Agencies, OMB	Overall Federal implementation is currently approximately 99%, with small numbers of privileged users still awaiting appropriate credentials
High Impact System Access Management: 90% of High Impact Systems require all users to authenticate using a PIV card or AAL3 multifactor authentication method	Q4FY20	In Progress	New, 3 agencies met	Agencies, OMB	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
Automated Access Management: 95% of users are covered by an automated, dynamic access management solution that centrally tracks access and privilege levels	Q4FY20	In Progress	New, 8 agencies met	Agencies, OMB	Decentralized identity management at agencies is a significant impediment to improving access management



^{*} 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



Limit Personnel Access: Q1 Update

	October	2017 (FY 2017	' Q4)	January	2018 (FY 201	8 Q1)		Change	
Agency	Privileged Network Access Management		Automated Access Management	Privileged Network Access Management	High Impact System Access Management	Automated Access Management	Privileged Network Access Management	High Impact System Access Management	Automated Access Management
Commerce	97%			98%	68%	10%			
DHS	99%			99%	91%	21%			
DOT	100%			97%	68%	19%			
ED	100%			100%	67%	5%			
Energy	96%			96%	89%	47%			
EPA	100%			100%	100%	0%			
GSA	100%			100%	20%	0%			
HHS	100%			100%	32%	100%			
HUD	100%			100%	NA	96%			
Interior	99%	2018		100%	33%	100%		2018	2
Justice	94%	7 2		93%	16%	0%		20	ĺ
Labor	100%	New in FY		100%	NA	0%		Z ci we Z	
NASA	100%	. <u>.</u>		100%	0%	0%			•
NRC	100%	e e		100%	20%	100%		وَ	
NSF	100%	_		100%	NA	1%			-
ОРМ	100%			100%	35%	100%			
SBA	100%			94%	NA	95%			
SSA	100%			100%	NA	100%			
State	93%			12%	90%	100%			
Treasury	100%			100%	35%	5%			
USAID	100%			100%	NA	0%			
USDA	100%			100%	78%	5%			
VA	100%			100%	0%	0%			
Civilian CFO Act Average	98%			92%	42%	30%			
# Met Goal	17			16	3	8			



^{*} Agency reports no high impact systems



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.

Key Milestones I	Milestone Due Date	Milestone Status	Change from last	Owner	Anticipated Barriers or other Issues Related to Milestone Completion
	Duc Dute		quarter		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	In Progress	N/A	Agencies, OPM, OMB,	Additional communications may be required from newly appointed OPM Director.
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	Not Started	N/A	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	N/A	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	Not Started	N/A	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	Not Started	N/A	Agencies, OPM, OMB	



Contributing Programs

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

