Modernize IT to Increase Productivity and Security

Goal Leaders

Steve Censky, Deputy Secretary, United States Department of Agriculture

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

December 2018
Overview

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.
December 2018 Summary of Progress: Enhance Federal IT and Digital Services

• Approximately 66% of civilian CFO Act agency email inboxes are now serviced by cloud-based solutions (November 2018).
• The Technology Modernization Fund (TMF) awarded funding for three projects totaling $23.5 million (for more information see https://tmf.cio.gov/projects/)
• OMB has released draft versions of the following cloud enabling documents for public comment and are reviewing and incorporating feedback
  • Cloud Smart strategy document
  • Data Center Optimization Initiative (DCOI) policy update
  • Trusted Internet Connect (TIC) policy update
• OMB updated its High Value Asset (HVA) policy, creating a formal program that supports all agencies in HVA identification, assessment, remediation, and response to incidents.
• OMB issued its annual information security guidance, which updated many cybersecurity related policies. Most notably, the guidance empowers agencies to use existing tools and capabilities acquired outside of the Continuous Diagnostics and Mitigation (CDM) acquisition vehicles, provided the agency meets all CDM reporting requirements to the Federal Dashboard.
• The CIO Council announced the launch of the first Federal Cybersecurity Reskilling Academy, which will offer training in cybersecurity skills to current federal employees that do not have a background in IT or cyber.
December 2018 Summary of Progress: Reduce Cybersecurity Risks to the Federal Mission

Agencies continue to make progress on 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

Performance Summary

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

Manage Asset Security

<table>
<thead>
<tr>
<th></th>
<th>Q1FY18</th>
<th>Q2FY18</th>
<th>Q3FY18*</th>
<th>Q4FY18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Asset Management</td>
<td>12</td>
<td>13</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Software Asset Management</td>
<td>11</td>
<td>9</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>Authorization Management</td>
<td>10</td>
<td>13</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Mobile Device Management</td>
<td>15</td>
<td>21</td>
<td>19</td>
<td></td>
</tr>
</tbody>
</table>

Limit Personnel Access

<table>
<thead>
<tr>
<th></th>
<th>Q1FY18</th>
<th>Q2FY18</th>
<th>Q3FY18*</th>
<th>Q4FY18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Privileged Network Access Management</td>
<td>16</td>
<td>15</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>High Value Asset System Access Management</td>
<td>3</td>
<td>7</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>Automated Access Management</td>
<td>8</td>
<td>11</td>
<td>13</td>
<td>14</td>
</tr>
</tbody>
</table>

Protect Networks and Data

<table>
<thead>
<tr>
<th></th>
<th>Q1FY18</th>
<th>Q2FY18</th>
<th>Q3FY18*</th>
<th>Q4FY18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrusion Detection and Prevention</td>
<td>7</td>
<td>10</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Exfiltration and Enhanced Defenses</td>
<td>15</td>
<td>16</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Data Protection</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>14</td>
</tr>
</tbody>
</table>

* In July of 2018, OMB and DHS reviewed and updated the FISMA CIO metrics to include a greater focus on HVAs and enterprise-visibility of information. As a result of these changes, the number of agencies meeting particular metrics may have shifted.
December 2018 Summary of Progress: Build a Modern IT Workforce

Recruiting
- Agencies submitted workforce roles of critical need. OPM is analyzing agencies’ submissions and will produce a report on government-wide cybersecurity hiring needs in April 2019.
- DHS and OMB will build on OPM’s analysis to prioritize areas of government-wide critical need.

Reskilling
- The CIO Council announced the launch of the first Federal Cybersecurity Reskilling Academy, which will offer training in cybersecurity skills to current federal employees that do not have a background in IT or cyber.
- The Council is planning additional reskilling opportunities throughout FY19 that will be available to additional segments of the Federal workforce.

Cybersecurity Talent Management System
- DHS and OMB are designing a new personnel system that will use innovative techniques to attract, hire, and retain federal cybersecurity personnel.
- DHS is exploring ways to increase the mobility of the cybersecurity workforce.

Pipeline
- OMB is exploring ways to enhance the effectiveness of partnership programs between Federal agencies and higher education institutions, to simplify the transition process from degree-seeking programs to federal employment.
- OMB is also studying pipeline programs that address high-need skills (e.g., STEM) at earlier education levels.
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.

<table>
<thead>
<tr>
<th>STRATEGIES</th>
<th>OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Removing Barriers, Accelerating Adoption</strong></td>
<td>• Enable Enhanced, Secure Computing Solutions</td>
</tr>
<tr>
<td>Reduce policy and process burdens to help agencies integrate enhanced technologies to improve the delivery of services to the Government’s customers.</td>
<td>• Drive Technology Modernization Projects</td>
</tr>
<tr>
<td>• Streamline System Authorization</td>
<td>• Modernize the Services Model</td>
</tr>
<tr>
<td><strong>Modernize Federal IT Delivery</strong></td>
<td>• Focus on the User</td>
</tr>
<tr>
<td>Shift Government to a modern IT service delivery underpinned by user satisfaction and the provision of services by those poised to provide them.</td>
<td>• Strengthen Identity Management</td>
</tr>
<tr>
<td>• Prioritize HVA Modernization</td>
<td>• Prioritize HVA Modernization</td>
</tr>
<tr>
<td><strong>Embrace Modern Technology Solutions</strong></td>
<td>• Adopt Cost-Effective Technology Solutions</td>
</tr>
<tr>
<td>Adopt new and innovative technologies to deliver services more efficiently, effectively, and more readily.</td>
<td>• Promote Access to Shared Solutions</td>
</tr>
</tbody>
</table>

🎯
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
- OMB has issued a draft Cloud Smart strategy document for public comment, and is reviewing and incorporating feedback
- OMB has issued a draft Data Center Optimization Initiative (DCOI) policy update for public comment, which will significantly improve the quality of reporting metrics while reducing agency burden
- OMB has issued a draft Trusted Internet Connect (TIC) policy update for public comment, which will revolutionize the way agencies access the internet securely, removing barriers to cloud adoption

Drive Adoption of Technology Modernization Projects
- The Technology Modernization Fund (TMF) awarded funding for three projects totaling $23.5 million (for more information see https://tmf.cio.gov/projects/)
- The Technology Modernization Board continues to review applications for high priority projects

Streamline System Authorization
- OMB and GSA are evaluating the best mechanisms for normalizing Federal security requirements for FedRAMP ATO’s.
- OMB and GSA are also developing a process to better incorporate agile methodologies into the ATO process, providing a more flexible approach for Federal agencies and cloud service providers.
- OMB and GSA are developing a rotational program that would enhance the cybersecurity workforce by building a cadre of cloud security authorization experts (Cyber Cloud Corps).
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:

<table>
<thead>
<tr>
<th>Strategic Outcome</th>
<th>Near Term Key Milestones</th>
<th>Milestone Due Date</th>
<th>Milestone Status</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enable Enhanced, Secure Computing Solutions:</strong></td>
<td>OMB has issued a draft version of the Cloud Smart strategy document for public comment</td>
<td>Q4FY18</td>
<td>Complete</td>
<td>OMB, DHS, GSA</td>
</tr>
<tr>
<td><strong>Drive Technology Modernization Projects:</strong></td>
<td>OMB has issued a draft version of the Data Center Optimization Initiative (DCOI) policy update for public comment</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Streamline System Authorization:</strong></td>
<td>OMB has issued a draft Trusted Internet Connection (TIC) policy update for public comment</td>
<td>Complete</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Enable Enhanced, Secure Computing Solutions:</strong></td>
<td>OMB has issued the Cloud Smart strategy document</td>
<td>Q2FY19</td>
<td>On track</td>
<td></td>
</tr>
<tr>
<td><strong>Drive Technology Modernization Projects:</strong></td>
<td>OMB has issued an updated DCOI policy memo</td>
<td>Q2FY19</td>
<td>On track</td>
<td></td>
</tr>
<tr>
<td><strong>Streamline System Authorization:</strong></td>
<td>OMB has instituted standard cloud contracting guidance</td>
<td>Q4FY19</td>
<td>On track</td>
<td></td>
</tr>
</tbody>
</table>

- **Enable Enhanced, Secure Computing Solutions:** 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.
- **Drive Technology Modernization Projects:** 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.
- **Streamline System Authorization:** Replace drawn out compliance-based system authorization processes with nimble, risk-based decision making to drive effective and cost-effective utilization of commercial technology.
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**
- OMB issued M-19-02, which requires agencies to develop an enterprise-level Security Operations Center (SOC) Maturation Plan.

**Strengthen Identity Management**
- OMB collected input from the public on its draft Federal identity policy, receiving feedback from over 500 individuals and organizations. OMB is currently incorporating the public’s feedback.

**Prioritize High Value Asset (HVA) Modernization**
- OMB updated its [HVA policy](#), creating a formal program that supports all agencies in HVA identification, assessment, remediation, and response to incidents.
- OMB issued M-19-02, which requires agencies to report their High Value Assets (HVAs) to DHS quarterly.
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:

<table>
<thead>
<tr>
<th>Strategic Outcome</th>
<th>Near Term Key Milestones</th>
<th>Milestone Due Date</th>
<th>Milestone Status</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modernize the Services Model: Improve the way services are provisioned within the government, promoting models in which under performing or under resourced agencies can purchase services elsewhere.</td>
<td>Activities have been incorporated into the <a href="#">Sharing Quality Services CAP Goal</a>. This strategic outcome will no longer be tracked beginning next quarter.</td>
<td></td>
<td></td>
<td>OMB, GSA</td>
</tr>
<tr>
<td>Focus on the User: Encourage the use of user centered design in the development of Federal IT products and digital services, including capturing reliable and actionable information to improve overall user experience.</td>
<td>Activities have been incorporated into the <a href="#">Improving Customer Experience CAP Goal</a>. This strategic outcome will no longer be tracked beginning next quarter.</td>
<td></td>
<td></td>
<td>OMB, GSA</td>
</tr>
<tr>
<td>Strengthen Identity Management: Enable agencies to implement modern and privacy enhancing identity, access, and credentialing technologies that align with industry-leading practices.</td>
<td>OMB has issued a draft identity policy for public comment. OMB has issued a final identity policy.</td>
<td>Q3FY18</td>
<td>Complete</td>
<td>OMB</td>
</tr>
<tr>
<td>Prioritize High Value Asset (HVA) Modernization: Promote the modernization and security of the Federal Government’s highest value information assets in a prioritized fashion.</td>
<td>DHS has issued updated guidance on HVA classification and protection (BOD 18-02). OMB has issued an update to current HVA guidance (<a href="#">OMB M-19-03</a>). A Federal strategy is set forth to categorize high value data.</td>
<td>Q3FY18</td>
<td>Complete</td>
<td>DHS, OMB</td>
</tr>
</tbody>
</table>
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 66% of civilian CFO Act agency email inboxes are now serviced by cloud-based solutions (November 2018). For a complete readout by agency, see [Cloud Email KPI](https://performance.gov) at performance.gov

**Promote Access to Shared Security Solutions**
- OMB issued [M-19-02](https://www.whitehouse.gov), which empowers agencies to use existing tools and capabilities acquired outside of the Continuous Diagnostics and Mitigation (CDM) acquisition vehicles, provided the agency meets all CDM reporting requirements to the Federal Dashboard
- All 23 Federal civilian CFO Act agencies are now sharing cybersecurity information between their agency-level dashboards and the DHS CDM Federal Dashboard, which provides government-wide situational awareness
- A total of 27 agencies are now covered by task orders for CDM DEFEND, the new generation of cybersecurity capability acquisition designed to provide agencies with more flexibility in selecting the tools they use to protect their networks and information
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:

<table>
<thead>
<tr>
<th>Strategic Outcome</th>
<th>Near Term Key Milestones</th>
<th>Milestone Due Date</th>
<th>Milestone Status</th>
<th>Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adopt Cost-Effective Technology Solutions</strong>: Increase the utilization of technology which drives greater efficiency in the conduct of government business and communication.</td>
<td>75% of civilian CFO Act agencies inboxes utilize cloud-based solutions</td>
<td>Q4FY19</td>
<td>On track</td>
<td>Agencies</td>
</tr>
<tr>
<td></td>
<td>95%* of civilian CFO Act agencies inboxes utilize cloud-based solutions</td>
<td>Q4FY20</td>
<td>On track</td>
<td>Agencies</td>
</tr>
<tr>
<td><strong>Promote Access to Shared Solutions</strong>: Promote the adoption of tools and services that allow the utilization of government economies of scale and service specific expertise.</td>
<td>Aligns together with the <a href="#">Sharing Quality Services CAP Goal</a></td>
<td></td>
<td></td>
<td>OMB, DHS</td>
</tr>
<tr>
<td></td>
<td>OMB has issued updated Continuous Diagnostic Mitigation (CDM) guidance which enhances the service acquisition model for Phases 2 and 3 (<a href="#">OMB M-19-02</a>)</td>
<td>Q4FY18</td>
<td>Complete</td>
<td>OMB, DHS</td>
</tr>
<tr>
<td></td>
<td>CDM Phase 3 Event Monitoring tools are made available to 100% of participating agencies</td>
<td>Q4FY19</td>
<td>On track</td>
<td>OMB, DHS</td>
</tr>
</tbody>
</table>

* Based on mission-critical needs, a limited number of agency email inboxes may require on premise hosting
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.
Implement capabilities to allow agencies to understand the assets and users operating on their networks.

Changes in metrics (effective July 2018) included a greater focus on HVAs. As a result of this change, the number of agencies meeting particular metrics may have shifted.

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:

<table>
<thead>
<tr>
<th>Key Milestones*</th>
<th>Milestone Due Date</th>
<th>Milestone Status</th>
<th>Change from last quarter</th>
<th>Owner</th>
<th>Anticipated Barriers or other Issues Related to Milestone Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardware Asset Management</strong>: 95% of hardware assets are covered by a capability to detect and alert upon the connection of an unauthorized hardware asset</td>
<td>Q4FY20</td>
<td>On track</td>
<td>Better, 16 agencies met (1 more)</td>
<td>Agencies, OMB</td>
<td>Delays in implementation of government-wide tools have led to uneven implementation of ISCM capabilities</td>
</tr>
<tr>
<td><strong>Software Asset Management</strong>: 95% of software assets are covered by a whitelisting capability</td>
<td>Q4FY20</td>
<td>On track</td>
<td>Worse, 10 agencies met (1 fewer)</td>
<td>Agencies, OMB</td>
<td>Delays in implementation of government-wide tools have led to uneven implementation of ISCM capabilities</td>
</tr>
<tr>
<td><strong>Authorization Management</strong>: 100% of High and Moderate Impact Systems are covered by a valid security ATO</td>
<td>Q4FY20</td>
<td>On track</td>
<td>Better, 14 agencies met (2 more)</td>
<td>Agencies, OMB</td>
<td></td>
</tr>
<tr>
<td><strong>Mobile Device Management</strong>: 95% of mobile devices are covered by a capability to remotely wipe contents if the device is lost or compromised</td>
<td>Q4FY20</td>
<td>On track</td>
<td>Better, 19 agencies met (1 more)</td>
<td>Agencies, OMB</td>
<td></td>
</tr>
</tbody>
</table>

*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.
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.

Changes in metrics (effective July 2018) included a greater focus on HVAs. As a result of this change, the number of agencies meeting particular metrics may have shifted.

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:

<table>
<thead>
<tr>
<th>Key Milestones*</th>
<th>Milestone Due Date</th>
<th>Milestone Status</th>
<th>Change from last quarter</th>
<th>Owner</th>
<th>Anticipated Barriers or other Issues Related to Milestone Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>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**</td>
<td>Q4FY18</td>
<td>On track</td>
<td>No change, 17 agencies met</td>
<td>Agencies, OMB</td>
<td>Small populations of privileged users still awaiting appropriate credentials</td>
</tr>
<tr>
<td>High Value Asset System Access Management: 90% of High Value Assets require all users to authenticate using a PIV card or AAL3 multifactor authentication method</td>
<td>Q4FY20</td>
<td>On track</td>
<td>Better, 14 agencies met (2 more)</td>
<td>Agencies, OMB</td>
<td>OMB is in the process of updating guidance regarding the protection of HVAs</td>
</tr>
<tr>
<td>Automated Access Management: 95% of users are covered by an automated, dynamic access management solution that centrally tracks access and privilege levels</td>
<td>Q4FY20</td>
<td>On track</td>
<td>Better, 14 agencies met (1 more)</td>
<td>Agencies, OMB</td>
<td>Decentralized identity management at agencies is a significant impediment to improving access management</td>
</tr>
</tbody>
</table>

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

Changes in metrics (effective July 2018) included a greater focus on HVAs and enterprise-level visibility of information. As a result of these changes, the number of agencies meeting particular metrics may have shifted.

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:

<table>
<thead>
<tr>
<th>Key Milestones*</th>
<th>Due Date</th>
<th>Status</th>
<th>Change from last quarter</th>
<th>Owner</th>
<th>Anticipated Barriers or other Issues Related to Milestone Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrusion Detection and Prevention</td>
<td>Q4FY20</td>
<td>On track</td>
<td>Better, 9 agencies met (6 more)</td>
<td>Agencies, OMB</td>
<td>Agencies are working to complete activities related to BOD 18-01</td>
</tr>
<tr>
<td>Exfiltration and Enhanced Defenses</td>
<td>Q4FY20</td>
<td>On track</td>
<td>No change, 23 agencies met</td>
<td>Agencies, OMB</td>
<td>With high agency implementation in this area, OMB intends to shift focus to specific metrics</td>
</tr>
<tr>
<td>Data Protection</td>
<td>Q4FY20</td>
<td>On track</td>
<td>Better, 14 agencies met (2 more)</td>
<td>Agencies, OMB</td>
<td></td>
</tr>
</tbody>
</table>

*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.
**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:

<table>
<thead>
<tr>
<th>Key Milestones</th>
<th>Milestone Due Date</th>
<th>Milestone Status</th>
<th>Change from last quarter</th>
<th>Owner</th>
<th>Anticipated Barriers or other Issues Related to Milestone Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>All agencies identify and quantify workforce positions and critical needs using the National Initiative for Cybersecurity Education (NICE) Cybersecurity Workforce Framework per P.L. 114-113</td>
<td>Q4FY18</td>
<td>Complete</td>
<td>Better</td>
<td>Agencies, OPM, OMB</td>
<td></td>
</tr>
<tr>
<td>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</td>
<td>Q4FY18</td>
<td>Complete</td>
<td>Better</td>
<td>Agencies, OPM, OMB</td>
<td></td>
</tr>
<tr>
<td>Establish a reskilling process to train federal employees from diverse backgrounds in IT and cybersecurity skills.</td>
<td>Q4FY19</td>
<td>On track</td>
<td>Better</td>
<td>Agencies, OPM</td>
<td></td>
</tr>
<tr>
<td>Each agency finalizes coding cybersecurity positions and declaring cybersecurity work roles of critical needto OPM, in accordance with the Cybersecurity Workforce Assessment Act. OPM produces a report to Congress on the government-wide cybersecurity workforce needs.</td>
<td>Q4FY19</td>
<td>On track</td>
<td>Better</td>
<td>Agencies, OPM</td>
<td></td>
</tr>
<tr>
<td>Develop a market-informed pay and compensation strategy for cybersecurity and other mission critical IT positions to improve recruitment and retention</td>
<td>Q4FY19</td>
<td>On track</td>
<td>Better</td>
<td>Agencies, OPM</td>
<td></td>
</tr>
<tr>
<td>Develop a centralized training capability for all cybersecurity personnel across the Federal workforce.</td>
<td>Q4FY21</td>
<td>On track</td>
<td>Better</td>
<td>Agencies, OPM</td>
<td></td>
</tr>
</tbody>
</table>
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

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
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