FY 20-21 Agency Priority Goal Action Plan

Strengthen Federal Cybersecurity

Goal Leader:

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Performance.gov

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Overview

Goal Statement

- Protect federal networks by defending against threats and assisting agencies in managing risk. By September 30, 2021, 75% of critical and high configuration-based vulnerabilities identified through high value asset assessments will be mitigated within 30 days.

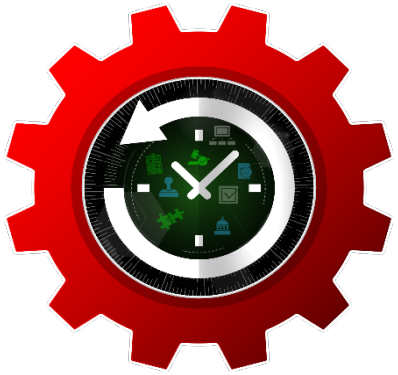
Challenges

- Variable agency capabilities and network architectures
- Network visibility limitations due to encryption and cloud computing
- Constantly evolving threat landscape and rapid pace of change in the cyber domain compared to the pace of federal government policy generation and implementation

Opportunities

- Empower DHS with additional authority to gain visibility into the federal enterprise and take action to safeguard systems
- Bring a unity of purpose to managing cybersecurity risks and protecting federal networks between DHS and agency network defense operators
- Ramp up use of coordinated tools and services to make federal networks more defensible and secure
- Synthesize risk posture data and assessments to reduce exposure to threats

Goal Strategies



Strategy 1: Increase Enterprise Risk Posture Awareness

Cybersecurity and Infrastructure Security Agency (CISA) will support departments and agencies to manage risk at an acceptable level, by tracking exposure to threats and heightening awareness of assets, users, and events on their networks to support risk-informed cybersecurity decisions and actions.

Understand the Environment
Identify and prioritize the most critical assets within the federal enterprise

Reduce Risk
Understand agencies' strategic risk postures through reporting and inputs from cybersecurity assessments

Strategy 2: Mitigate Known Vulnerabilities

CISA will deliver tools and technical support to fill critical gaps in agencies' cybersecurity capabilities and leverage policy directives and authorities to establish requirements and expectations for timely mitigation of vulnerabilities.

Provide Tools & Assistance
Offer assistance through tools and services, such as Continuous Diagnostics and Mitigation (CDM), cyber hygiene scanning, and high value asset assessments

Take Action
Strengthen cybersecurity posture and mitigate impacts

Strategy 3: Manage Malicious Incidents

CISA will defend the federal enterprise and target its efforts toward identifying and preventing the most significant threats through analysis, alerts, and intrusion detection and prevention technologies. Malicious activity will be mitigated and contained through collaboration with agency counterparts on cyber defense actions and direct response when needed.

Identify Threats
Detect and prevent malicious traffic

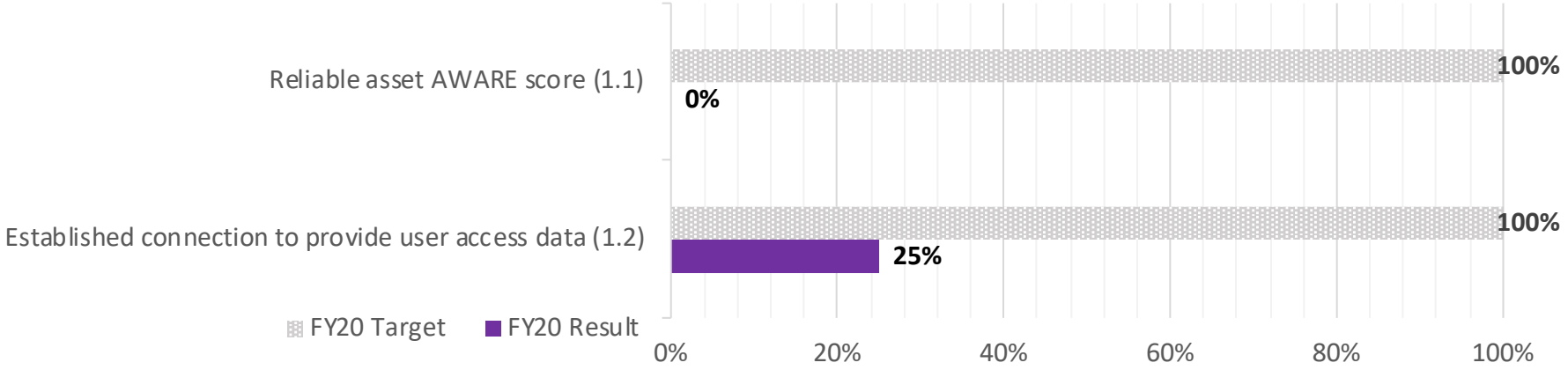
Respond to Incidents
Harness cross-cutting information from EINSTEIN, CDM, and other internal and external sources for agile analysis

Governance Approach for Remediation Escalation

Escalation Level	Remediation Timeline	Escalated By	Escalated To	CISA Action
6	Varies based on issue	Varies based on issue	Varies based on issue	If issue is not resolved by Escalation Level 5, CISA leadership and program staff work together to determine next escalation steps, including involvement by the DHS Deputy Under Secretary (DUS) and OMB. In-scope communication methods include phone call, prearranged meeting, or email notification with signed letter attached detailing escalation rationale.
5	10 business days after Escalation Level 4	CSD Assistant Director	Agency SAORM	CISA leadership facilitates escalation by CSD Assistant Director to agency Senior Agency Officials for Risk Management (SAORM) or equivalent. In-scope communication methods include phone call, prearranged meeting, or email notification with signed letter attached detailing escalation rationale.
4	10 business days after Escalation Level 3	CISA Leadership: Associate Director or Deputy Associate Director	Agency CIO	CISA management facilitates escalation by CISA leadership (Associate Director and/or Deputy Associate Director) to agency CIO. In-scope communication methods include phone call, prearranged meeting, or email notification with signed letter attached detailing escalation rationale.
3	5 business days after Escalation Level 2	CISA Management	Agency CISO	CISA program POC coordinates with CISA management and CISA Cyber Service Liaison (CSL) to notify agency CISO through email, phone call, or an arranged meeting (preferred method). CSL facilitates notification through established relationship with CISO and is included in notification and/or meeting.
2	5 business days after Escalation Level 1	CISA Program POC	Agency POC	CISA communicates past due date and outstanding action as second escalation by email notification or phone call to agency POC. Relevant CISA management included in communication, as applicable, and briefed as needed in preparation for potential action.
1	30-60 days after remediation is requested, or 1-2 days after defined deadline	CISA Program POC	Agency POC	CISA initiates escalation and communicates past due-date and outstanding action by email notification or phone call to agency POC.
0	1-30 days after remediation is requested, or other defined deadline	CISA Program POC	Agency POC	CISA articulates requested agency action and deadline and provides associated guidance and template, as relevant.

Key Indicators

Strategy 1: Increase Enterprise Risk Posture Awareness



#	Measure	Explanation
1.1	Percent of agencies for which a reliable Agency-Wide Adaptive Risk Enumeration (AWARE) score can be calculated for assets reporting to the Federal Dashboard	A total of 52 agencies (18 CFO Act and 34 non-CFO Act agencies) were reporting AWARE scores up to the Federal Dashboard at the end of Q2 FY20, but their reliability was not fully verified. The CDM program representatives and CDM integrators are now working together with agencies to implement the Data Quality Management Plan (DQMP); a preliminary dry run of data quality protocols was conducted in March to verify and validate the DQMP protocol process and finalize quality criteria to ensure reliable scores. The CDM program expects to finish an analysis of these results by the end of April and begin data quality assessments and certifications in May.
1.2	Percent of agencies who have established a data connection and begun providing user access data to the Federal Dashboard	Five CFO Act and 36 non-CFO Act agencies are currently reporting user access data to the Federal Dashboard. Three CFO Act agencies (GSA, EPA, and NRC) are now reporting user access data to the CDM data integration layer, and will be ready to begin reporting to the Federal Dashboard when the new CDM Dashboard Ecosystem is implemented at those agencies by July 2020. The CDM program continues to work with remaining agencies to ensure data readiness in advance of the updated dashboard deployments.

Note: Measure descriptions are located in the Appendix (Table 1).

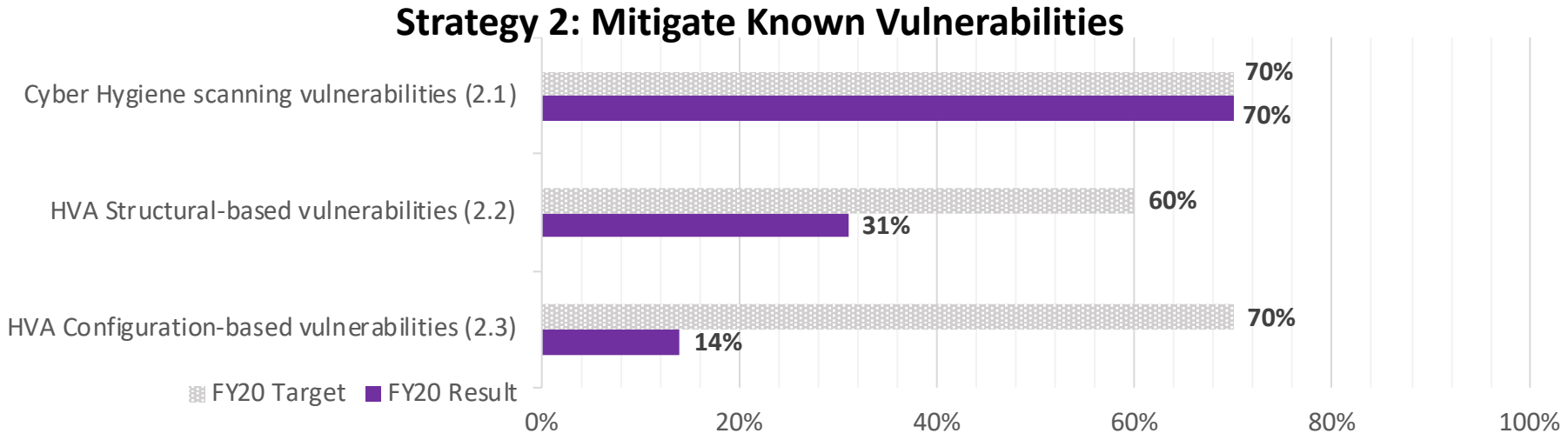
Key Indicators

Strategy 1: Increase Enterprise Risk Posture Awareness

#	Measure	Explanation
1.3	Percent of agencies where IT hardware devices reported in the Federal Dashboard is within ten percent of agency self-reported numbers for Federal Information Security Management Act (FISMA) devices	**Reporting will begin in FY21**
1.4	Percent of agencies where the number of active users in the Federal Dashboard is within ten percent of agency self-reported numbers for FISMA users	**Reporting will begin in FY21**

Note: Measure descriptions are located in the Appendix (Table 1).

Key Indicators

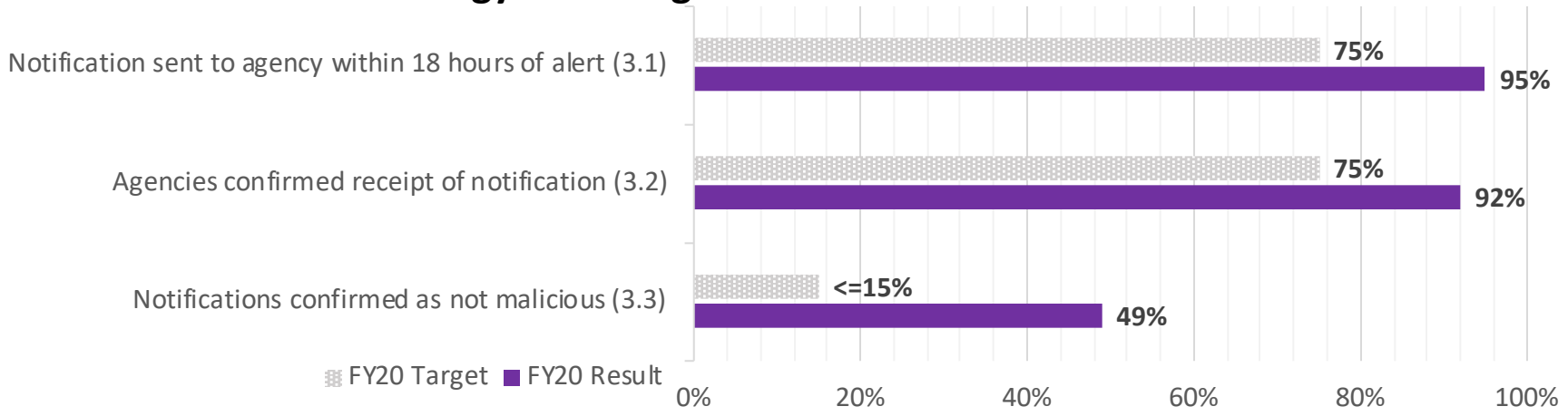


#	Measure	Explanation
2.1	Percent of critical and high vulnerabilities identified through cyber hygiene scanning mitigated within the designated timeline	With BOD 19-02 being in effect since April 2019, agencies are demonstrating progress in addressing vulnerabilities within required timelines. Mitigation performance dropped slightly from Q1 to Q2, however agencies have not reported any significant challenges or circumstances that are impacting BOD compliance.
2.2	Percent of mitigation activities for critical and high structural-based vulnerabilities identified through high value asset (HVA) assessments that are on schedule	As of Q2, there are 15 of 44 open structural-based findings from FY18-20 on schedule. Structural based-finding not on schedule are due to department and agency's lack of submission of remediation plans or not meeting approved mitigation timelines.
2.3	**Key Measure: Percent of critical and high configuration-based vulnerabilities identified through high value asset assessments mitigated within 30 days**	During Q1 and Q2, 12 configuration-based findings were past the 30-day remediation time. Two configuration-based findings were remediated within 30 days.

Note: Measure descriptions are located in the Appendix (Table 1).

Key Indicators

Strategy 3: Manage Malicious Incidents



#	Measure	Explanation
3.1	Percent of potential malicious cyber activity notifications where impacted agencies were alerted within the specified timeframe	The results indicate that notifications were sent out 94% of the time within the 18-hour window in Q2. On average, it took 6 hours for the notification to occur, much faster than the benchmark. The cumulative result thus far is 95%.
3.2	Percent of potential malicious cyber activity notifications where the notified agency confirms receipt	Of the 18 alerts issued from CISA, 100% of agencies who received them confirmed the receipt in Q2. The cumulative result thus far is 92%. CISA's increased focus on, and quarterly reporting of, agency response rate has had a positive effect. The percent of responses has improved from Q1 to Q2. New processes, as well as confirming and updating contact information, has contributed to the higher response rate.
3.3	Percent of potential malicious cyber activity notifications confirmed by agencies as not malicious	Of the alerts issued from CISA in Q2, 61% of the alerts were confirmed by agencies as not malicious. With the current sensor setup, CISA only sees the network perimeter as EINSTEIN is almost 15 years old. CISA will continue to see network traffic that looks malicious from its inspection point, but is actually not when agencies inspect, until visibility inside agency networks improves. Without knowing the internal device (staff workstation, printer, security appliance, etc.) CISA will continue to report that traffic as potentially malicious, because from an outside perspective it matches true malicious traffic on a network..

Note: Measure descriptions are located in the Appendix (Table 1).

Summary of Progress

Strategy	Progress Update
1. Increase Enterprise Risk Posture Awareness	The CDM program has initiated its Data Quality Management Plan (DQMP) assessment process. Preliminary analyses of agency AWARE scores and underlying data will be completed by the end of April. More detailed reviews and certification assessments will begin in May.
2. Mitigate Known Vulnerabilities	Steady progress was made in Q2 towards CISA meeting its targeted measurements; noting DHS is among the agencies with the lowest amount of detections of open vulnerabilities. Although DHS (ICE) had open vulnerabilities detected, all 3 instances were related to cameras that are essential in collecting video evidence for an ongoing/active investigation. Shutting down the camera for any reason (e.g., applying patches) during an active investigation could jeopardize the investigation and the current deployment needs to remain until the local field offices indicate the device is no longer needed for the investigation. The estimated completion date is tentatively set to be some time in August 2020, but may change according to the active needs of the investigation. DHS continues to be the model agency in its close communication and swift responses to CISA inquires around Federal cybersecurity directives. CISA commits to partnering with DHS/ICE and all other federal civilian executive branch agencies to cooperatively find robust solutions to any and all open vulnerabilities surrounding Federal information systems.
3. Manage Malicious Incidents	Lack of visibility into agency networks continues to be a problem and hinders thorough analysis of potential threats before alerting agencies. As a result, many alerts sent to agencies continue to turn out as non-malicious once the alerted agency conducts additional inspection of their internal network. While analysis suffers due to lack of visibility, the timeliness of alerting and the percentage of agencies confirming receipt continued to meet performance targets in Q2. The percentage of agencies confirming receipt improved from 86% in Q1 to 100% in Q2. This is due in large part to the update and verification of agency SOC contact information.

Key Milestones

Strategy 1: Increase Enterprise Risk Posture Awareness

#	Key Milestone	Due Date	Status	Comments
M.1.1	Complete survey of agency asset reporting at the CDM Federal Dashboard, evaluate against authoritative, reported data, and notify agencies of results	FY20, Q1	Complete	The CDM PMO reviewed the agency asset reporting at the CDM Federal Dashboard level and evaluated it against the agency CDM asset discovery data and the reported FISMA data for FY19. The CDM PMO Architecture and Technology Integration Section has developed a Data Quality Management Plan (DQMP) that addresses the approach for validating agency asset counts, as well as ensuring the data quality (e.g., vulnerability and configuration information) associated with those assets. The CDM PMO met with the CDM system integrators to discuss the direction for data quality and met with the agencies in January during the CDM Customer Advisory Forum to discuss the current asset counts and the plan for ensuring the quality of those asset counts.
M.1.2	Develop and implement data quality improvement protocols and execution plan in collaboration with agencies	FY20, Q2	Complete	The CDM PMO initiated its Data Quality Management Plan with agencies and system integrators. Next steps will begin with a top-to-bottom architecture review of CDM solutions to conduct system analysis focused on data quality. The CDM PMO representatives and system integrators ran a series of "dry-run" surveys with agency data sets to prove out assessment processes and criteria. Results are being analyzed to inform the data certification process and will be completed by the end of April. Full-scale quality reviews are expected to begin in May and continue through the remainder of the fiscal year.

#	Key Milestone	Due Date	Status
M.1.3	Validate agency summary asset reporting results on the CDM Federal Dashboard against agency authoritative asset reports	FY20, Q3	On-Track
M.1.4	Complete delivery and integration of agency user access management tools with agency dashboards, and verify agency summary user access management data exchanges with the Federal Dashboard	FY20, Q4	Scheduled

Note: Milestone Status Definitions are located in the Appendix (Table 2).

Key Milestones

Strategy 2: Mitigate Known Vulnerabilities

#	Key Milestone	Due Date	Status	Comments
M.2.1	Implementation of improved process to integrate CDM, the Quality Service Management Office (QSMO), HVA, and Vulnerability Management support during engagements and out-briefs to provide enhanced technical support to agencies for remediation of vulnerabilities	FY20, Q1	Complete	Once assessment reports are drafted, relevant CISA program offices are notified so they can review the reports to identify any potential actions by their teams to address vulnerabilities utilizing current CISA services, QSMO offerings, or cyber engineering support. Critical and Major/High risks take priority over moderate or information risks. Relevant program offices participate in the internal and external risk briefs to ensure early engagement with agencies in their remediation processes. CISA's HVA and CDM teams are working together to proactively define technical capabilities aligned to the most common findings, so remediation support can be executed more quickly. CISA also continues to engage agencies in the CDM Data protection pilots to quickly address risks. These engagements are still in the early phase, and CISA continues to reach out to agencies to work with them in applying already outlined capabilities against known historical findings.
M.2.2	Accelerate and enhance escalation process for missed remediation plan dates progressively up the agency's leadership chain	FY20, Q2	Complete	The CISA Cyber Directives team has revised the escalation process and received approval to utilize this moving forward. The Directives team closely tracks Agency compliance and utilizes internal tools to monitor necessary and ongoing escalations. Escalations have proven useful to receive materials from the agency and closing out open findings faster.

#	Key Milestone	Due Date	Status
M.2.3	Completion of a gap analysis of common risks compared with CISA offerings and solutions	FY20, Q3	Scheduled
M.2.4	Create and implement a process to leverage Plan of Action and Milestones (POA&M) information to build an agency-focused profile of remediation efforts, systemic challenges, reoccurring issues, cycle times of vulnerabilities, outliers, and other aspects of vulnerability management to allow CISA to make informed decisions on assistance to the agencies	FY20, Q4	Scheduled

Note: Milestone Status Definitions are located in the Appendix (Table 2).

Key Milestones

Strategy 3: Manage Malicious Incidents

#	Key Milestone	Due Date	Status	Comments
M.3.1	Modifications to Standard Operating Procedures (SOPs) for notification and tracking of reported potential incidents complete	FY20, Q1	Complete	The SOP was created and implemented, but there were some refinements identified that CISA plans to address in Q2 to improve the process further.
M.3.2	Verification and update of agency Security Operations Center (SOC) contact information launched	FY20, Q2	Complete	CISA worked in Q1 and Q2 to verify and update SOC contact information. This process to verify and update SOC contact information is believed to have contributed to the increase in agency responses from Q1 to Q2.

#	Key Milestone	Due Date	Status
M.3.3	Verification and update of agency SOC contact information completed	FY20, Q3	Scheduled
M.3.4	Feedback from agencies on how they analyze and respond to notifications of potential malicious incidents received	FY20, Q4	Scheduled

Note: Milestone Status Definitions are located in the Appendix (Table 2).

Contributing Programs & Stakeholders

Contributing Programs

- Cybersecurity Division (CSD), DHS/CISA
- DHS Office of the Chief Information Security Officer (OCISO)
- Federal Civilian Executive Branch Agencies
- Agency Security/Network Operations Centers (SOC/NOC)

Stakeholders

- Federal Civilian Executive Branch Agencies
- Federal Chief Information Officers (CIOs)
- Federal Chief Information Security Officers (CISOs)
- Office of Management and Budget (OMB)
- Congress
- Government Accountability Office (GAO)
- Agency Inspectors General (IGs)
- The American Public

Appendix

APG Measure Descriptions and Milestone Status Definitions

Additional information on the performance measure data accuracy and reliability are available at:
DHS FY19-21 Annual Performance Report Appendix A

Appendix

Table 1: Measure Descriptions

Measure Name	Measure Description
1.1 Percent of agencies for which a reliable Agency-Wide Adaptive Risk Enumeration score can be calculated for assets reporting to the Federal Dashboard	This measure reports the percent of participating federal agencies that have established a reliable active Continuous Diagnostics and Mitigation (CDM) connection with the Federal Dashboard allowing the calculation of an Agency-Wide Adaptive Risk Enumeration (AWARE) score. Reliable AWARE scores use numerical scales to quantify the severity of identified vulnerabilities of IT systems (assets), how long they have been present, and the impact to these systems. This measure is an indicator of agencies' cybersecurity posture, and their ability to provide information to the Federal Dashboard to identify system vulnerabilities. AWARE scores serve as a mechanism to prioritize and remediate system vulnerabilities.
1.2 Percent of agencies who have established a data connection and begun providing user access data to the Federal Dashboard	This measure reports the percent of participating federal civilian executive branch agencies where they have established an active Continuous Diagnostics and Mitigation (CDM) connection with the Federal Dashboard and begun providing user access and privilege information. The value being counted is whether any one of the agencies' organizations is providing user access and privilege information to the Federal Dashboard. The user access and privileged information being gauged relates to Identity and Access Management (formerly Phase Two) of the CDM tools reflecting "who is on the network" and demonstrates the successful deployment, integration, display and exchange of data. The measure gauges implementation progress for restricting network privileges and access to only those individuals who need it to perform their duties on federal networks.
1.3 Percent of agencies where IT hardware devices reported in the Federal Dashboard is within ten percent of agency self-reported numbers for Federal Information Security Management Act devices	This measure reports the percent of participating federal agencies with an active Continuous Diagnostics and Mitigation (CDM) connection with the Federal Dashboard whose automated collection of the number of hardware devices is within ten percent of the agency's self-report Federal Information Security Management Act (FISMA) device numbers. Currently due to complexities with automated detection along with the status of CDM implementation, device data can vary significantly for federal agencies. This measure provides an indicator of the extent of this deviation and is intended to drive attention to addressing and resolving these differences and improve data integrity.
1.4 Percent of agencies where the number of active users in the Federal Dashboard is within ten percent of agency self-reported numbers for Federal Information Security Management Act users	This measure reports the percent of participating federal agencies with an active Continuous Diagnostics and Mitigation (CDM) connection with the Federal Dashboard whose automated collection of the number of active users is within ten percent of the agency's self-report Federal Information Security Management Act (FISMA) users. Currently due to complexities with automated detection along with the status of CDM implementation, user data can vary significantly for federal agencies. This measure provides an indicator of the extent of this deviation and is intended to drive attention to addressing and resolving these differences and improve data integrity.

Appendix

Measure Name	Measure Description
2.1 Percent of critical and high vulnerabilities identified through cyber hygiene scanning mitigated within the designated timeline	This measure calculates the percent of critical and high vulnerabilities, identified through cyber hygiene scanning, that have been mitigated within the specified timeline. Cyber scanning occurs in federal agencies and departments but does not include the Department of Defense or the Intelligence Community. For critical vulnerabilities, mitigation is required within 15 days from point of initial detection, and for high vulnerabilities mitigation is required within 30 days. Cyber hygiene scanning prioritizes vulnerabilities based on their severity as a means for agencies to make risk-based decisions regarding their network security. Identifying and mitigating vulnerabilities on a network in a timely manner is a critical component of an effective cybersecurity program, as it is critical to maintaining operational availability and integrity of IT systems.
2.2 Percent of mitigation activities for critical and high structural-based vulnerabilities identified through high value asset assessments that are on schedule	This measure reports the percent of mitigation activities federal agencies and departments have established to resolve critical and high structural vulnerabilities identified in High Value Assets (HVA) asset assessments that are on schedule. HVA assessments are performed across the Federal Government to identify vulnerabilities associated with the most sensitive IT systems and data. Structural-based vulnerabilities are those that have adverse impact across multiple business units and require long-term and detailed planning, procurement, integration, and testing to be mitigated (such as network segmentation, data loss prevention, and data encryption). Ensuring mitigation activities stay on schedule ensure agencies and departments are on track and dedicating resources to mitigate structural-based vulnerabilities so as to protect the Federal Government's most sensitive IT systems and data.
2.3 Percent of critical and high configuration-based vulnerabilities identified through high value asset assessments mitigated within 30 days	This measure reports the percent of critical and high configuration-based vulnerabilities identified in High Value Assets (HVA) assessments that have been mitigated within 30 days. HVA assessments are performed across the Federal Government to identify vulnerabilities associated with the most sensitive IT systems and data. Configuration-based vulnerabilities are those that can be more quickly be mitigated by agencies and departments through such actions as changing security settings, software or configuration changes, patching software vulnerabilities, and adjusting user account privileges. Agencies and departments report monthly to the program on the status of mitigating these configuration-based vulnerabilities. The results indicate if agencies and departments are resolving less complex HVA vulnerabilities within the government-wide goal of 30 days.
3.1 Percent of potential malicious cyber activity notifications where impacted agencies were alerted within the specified timeframe	The measure tracks the percent of potential malicious cyber activity notifications identified as credible where the affected agency is alerted within the specified timeframe. Potential malicious cyber activity on federal networks is detected by automated tools through the National Cyber Protection System (NCPS) alert-based detection function. The system sends automated notifications to analysts within NCPS, who then manually review the notification(s), confirm if a potential credible threat exists, and if so, the affected agency is sent a notification by email for their further exploration. The specified timeframe to notify affected agencies of potential malicious cyber activity is 18 hours for FY20 and 12 hours for FY21.

Appendix

Measure Name	Measure Description
3.2 Percent of potential malicious cyber activity notifications where the notified agency confirms receipt	This measure tracks all the potential malicious cyber activity notifications that were sent to agencies where the notified agency acknowledges receipt. Potential malicious cyber activity on federal networks is detected by automated tools through the National Cyber Protection System (NCPS) alert-based detection function. The system sends automated notifications to Computer Network Defense (CND) analysts within NCPS, who then manually review the notification(s), confirm if a potential credible threat exists, and if so, the affected agency is sent an email for their further exploration. This measure provides confirmation to the program that the notification has been received.
3.3 Percent of potential malicious cyber activity notifications confirmed by agencies as not malicious	This measure tracks all the potential malicious cyber activity notifications that were sent to agencies where the notified agency confirmed the activity as not malicious. Potential malicious cyber activity on federal networks is detected by automated tools through the National Cyber Protection System (NCPS) alert-based detection function. The system sends automated notifications to analysts within NCPS, who then manually review the notification(s), confirm if a potential credible threat exists, and if so, the affected agency is sent an email notification for their further exploration. Upon receipt of the notification, agencies investigate the potential malicious activity and communicate back to the program if the notification pertained to non-malicious activity. This measure provides an indicator of the precision of the diagnosis process.

Table 2: Milestone Status Definitions

Milestone Status	Definition
Unscheduled	Specific activities to meet the milestones have not been determined
Scheduled	Specific activities to meet the milestone have been determined
On Track	Specific activities to meet the milestone have started
Complete	Milestone has been accomplished by due date
Missed	Milestone was not accomplished by due date