SHIELDS UP

A BRIEF OVERVIEW OF RECOMMENDED ACTIONS AND RESOURCES FOR IMPROVING NEAR-TERM CYBER RESILIENCE

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State Cybersecurity Coordinator
Region 6 | Texas

Professional Bio

PROFESSIONAL EXPERIENCE

- **State Cybersecurity Coordinator & Cybersecurity Advisor,** Cybersecurity & Infrastructure Security Agency, (Washington D.C.; Texas/Region 6)
- **Adjunct Professor of Law,** St. Mary's University School of Law *NSA/DHS CAE-CDE (San Antonio, Texas)
- **Information Security Officer,** The Alamo Colleges District (San Antonio, Texas)
- **State Cybersecurity Coordinator**, Texas Department of Information Resources (Austin, Texas)
- **Chairman, Texas Cybersecurity Council**, Texas Department of Information Resources (Austin, Texas)
- **Information Systems Auditor**, CPS Energy (San Antonio, Texas)
- **Director**, The Center for Information Assurance Management and Leadership (a nationally recognized NSA/DHS Center for Academic Excellence in Cyber Defense Education) (San Antonio, Texas)
- **Assistant Professor of Computer Information Systems and Security**, Our Lady of the Lake University *NSA/DHS CAE-CDE (San Antonio, Texas)
- **Chief Information Security Officer**, Jefferson Bank (San Antonio, Texas)
- **Information Security Consultant**, Omnikron Systems, Inc. (Los Angeles, California)

FORMAL EDUCATION

- **Law School**: Doctor of Jurisprudence (IT, Intellectual Property, and Privacy Law)
- **Graduate School**: Master of Science, Computer Information Systems and Security
- **Undergraduate**: Bachelor of Science, Computer Information Systems and Security

PROFESSIONAL CERTIFICATIONS/CREDENTIALS

- (ISC)2 Computer Information Systems Security Professional (CISSP)
- ISACA Certified Information Systems Auditor (CISA)
- CompTIA Security+

CYBERSECURITY &
INFRASTRUCTURE
SECURITY AGENCY

Cybersecurity and Infrastructure Security Agency (CISA)

VISION

Secure and resilient infrastructure for the American people.

MISSION

CISA partners with industry and government to understand and manage risk to our Nation's critical infrastructure.

OVERALL GOALS

GOAL 1

DEFEND TODAY

Defend against urgent threats and hazards

seconds | days | weeks

GOAL 2

SECURE TOMORROW

Strengthen critical infrastructure and address long-term risks

months | years | decades

CYBERSECURITY & INFRASTRUCTURE SECURITY AGENCY

Our Work

The Cybersecurity and Infrastructure Security Agency (CISA) is the Nation's risk advisor, working with partners to defend against today's threats and collaborating to build more secure and resilient infrastructure for the future

- PARTNERSHIP DEVELOPMENT
- INFORMATION AND DATA SHARING
- CAPACITY BUILDING
- INCIDENT MANAGEMENT & RESPONSE
- RISK ASSESSMENT AND ANALYSIS
- NETWORK DEFENSE
- EMERGENCY COMMUNICATIONS

Critical Infrastructure Sectors

CISA assists the public and private sectors to secure their networks and focuses on organizations in the following 16 critical infrastructure sectors.

Chemical

Commercial Facilities

Communications

Critical Manufacturing

Dams

Defense Industrial Base

Emergency Services

Energy

Financial

Food & Agriculture

Government Facilities

Healthcare & Public Health

Information Technology

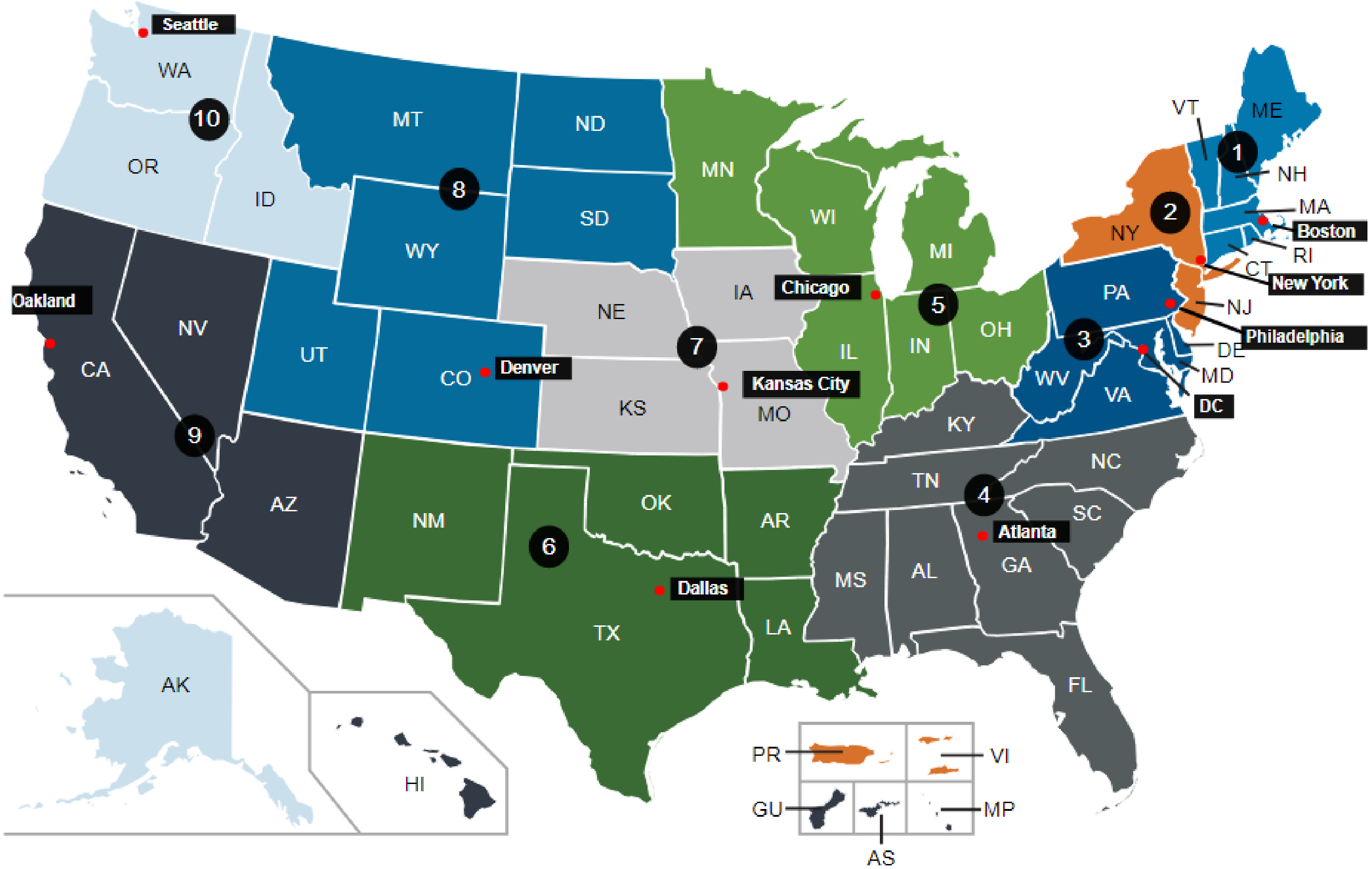
Nuclear Reactors, Materials & Waste

Transportations Systems

Water

CISA Regions

Region	Location
1	Boston, MA
2	New York, NY
3	Philadelphia, PA
4	Atlanta, GA
5	Chicago, IL
6	Dallas, TX
7	Kansas City, MO
8	Denver, CO
9	Oakland, CA
10	Seattle, WA



https://www.cisa.gov/cisa-regions

Cybersecurity State Coordinator (CSC)

The role of the Cybersecurity State Coordinator (CSC) is to build strategic public and private sector relationships in Texas to facilitate the development and maintenance of secure and resilient infrastructure, pursuant to 6 United States Code, Section 665(c) (2021).

- Build strategic public and private sector relationships;
- Serve as the Federal cybersecurity risk advisor;
- Facilitate the sharing of cyber threat information;
- Raise awareness of cyber resources from the Federal Government to non-Federal entities;
- Support training, exercises, and planning for continuity of operations from cyber incidents;
- Serve as a principle point of contact for non-Federal entities to engage the Federal Government on preparing, managing, and responding to cyber incidents;
- Assist State, local, Tribal, and territorial governments in development of State cyber plans;
- Coordinate with appropriate officials within the Agency (CISA).

Cybersecurity Advisors (CSAs)

To provide direct coordination, outreach, and regional support in order to protect cyber components essential to the sustainability, preparedness, and protection of the Nation’s Critical Infrastructure and Key Resources (CIKR) and State, Local, Tribal, and Territorial (SLTT) governments.

- **Assess**: Evaluate critical infrastructure cyber risk.
- **Promote**: Encourage best practices and risk mitigation strategies.
- **Build**: Initiate, develop capacity, and support cyber communities-of-interest and working groups.
- **Educate**: Inform and raise awareness.
- **Listen**: Collect stakeholder requirements.
- **Coordinate**: Bring together incident support and lessons learned.

No-Cost Cyber Resources and Assessments

No-Cost Strategic Cybersecurity Resources:

- Cyber Resilience Review (CRR) Assessment (Strategic)
- External Dependencies Management (EDM) Assessment (Strategic)
- Cyber Infrastructure Survey (CIS) Assessment (Strategic)
- Ransomware Readiness Assessment (Strategic)
- Cybersecurity Workshops (Strategic)
- Cybersecurity Tabletop Exercises (CTTX) (Strategic)

No-Cost Technical Cybersecurity Resources:

- Phishing Campaign Assessment (PCA) (Technical)
- Vulnerability and Web Application Scanning Service (CyHy) (Technical)
- Validated Architecture Design Review (VADR) (Technical)
- Remote Penetration Test (Technical)
- Risk & Vulnerability Assessment (Technical)

STRATEGIC
(C-Suite Level)
TECHNICAL
(Network-Administrator Level)

SHIELDS UP

Today's Risk Landscape

America remains at risk
from a variety of threats:

- INSIDER THREAT
- ACTS OF TERRORISM
- CYBER ATTACKS
- EXTREME WEATHER
- PANDEMICS
- ACCIDENTS OR TECHNICAL FAILURES

What is Information Security?

Definition: Information Security

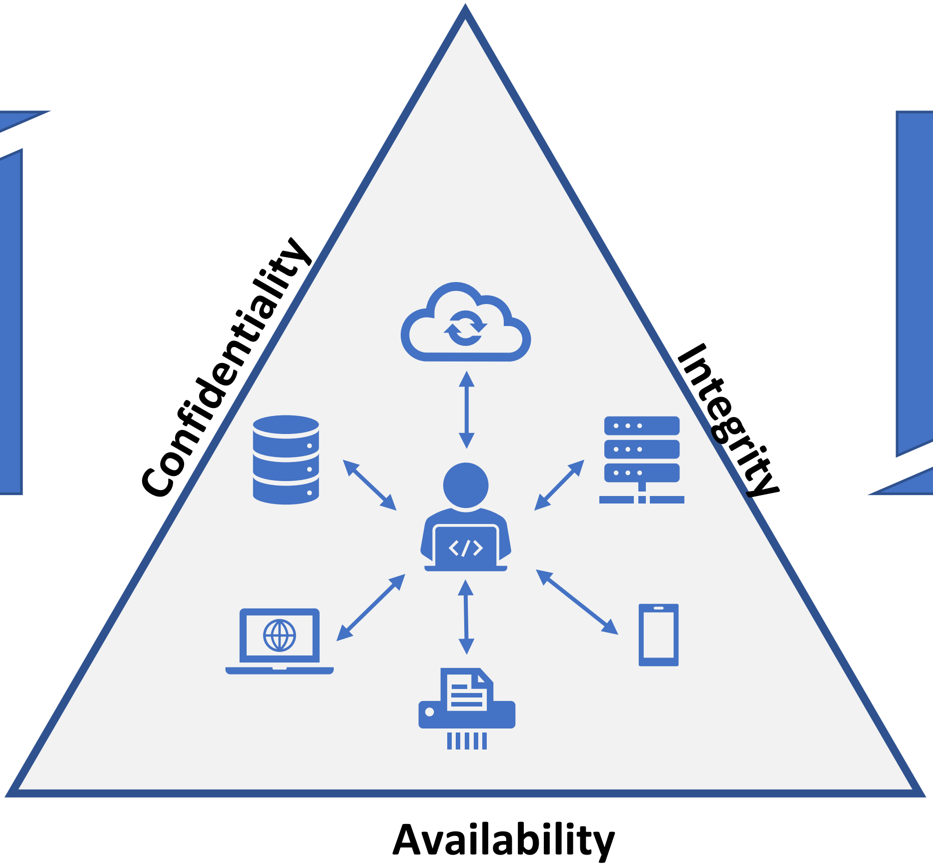
According to NIST, **Information Security** is *"[t]he protection of information and information systems against unauthorized access, use, disclosure, modification, or destruction in order to provide confidentiality, integrity, and availability."*

National Institute of Standards and Technology

Source: NIST SP 800-171 Rev. 1

Information refers to *"[a]ny communication or representation of knowledge such as facts, data, or opinions in any medium or form, including textual, numerical, graphic, cartographic, narrative, or audiovisual."*

Source: NIST SP 800-171 Rev. 1 Protecting Controlled Unclassified Information in Nonfederal Systems and Organizations



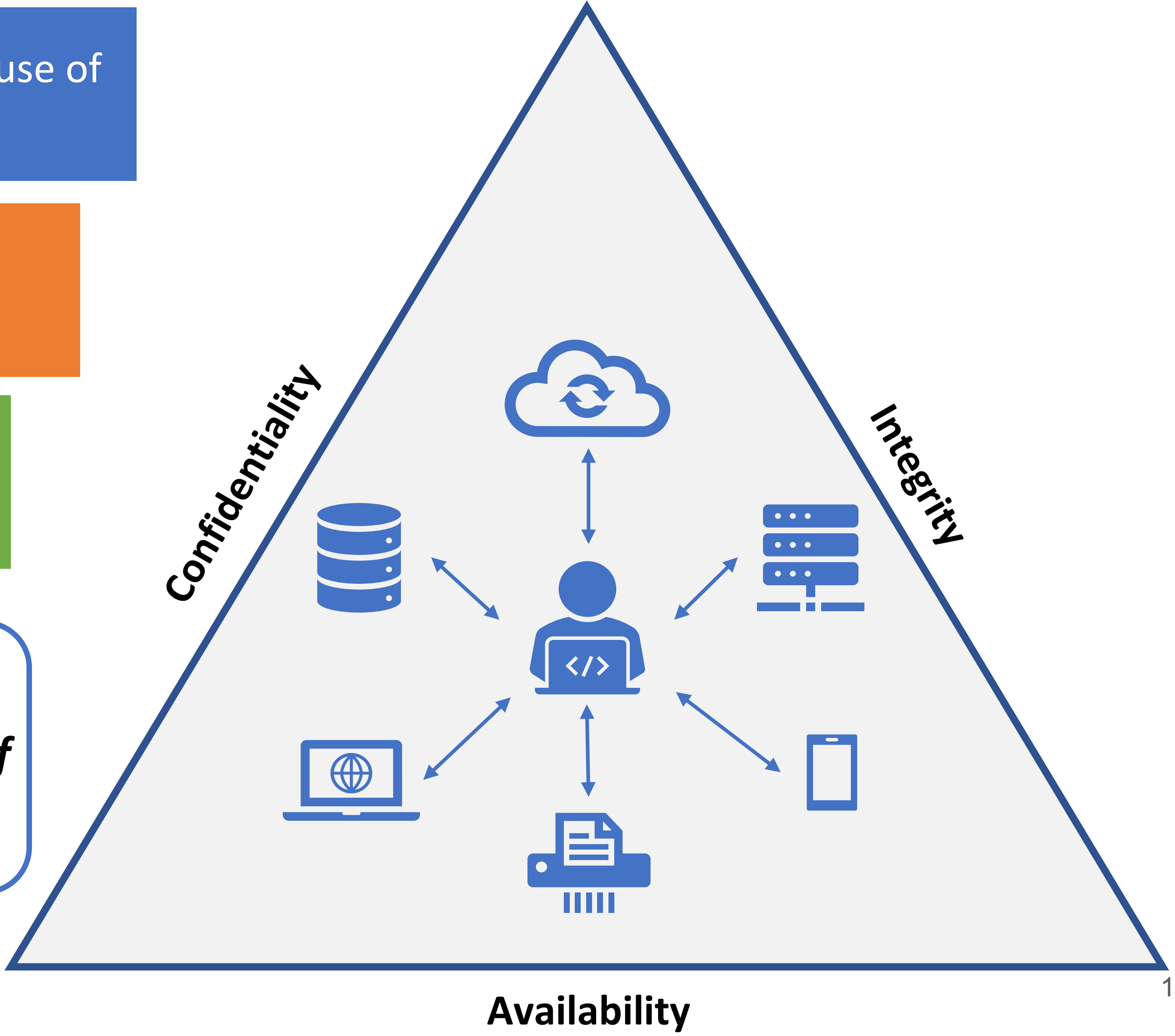
Information System refers to *"[a] discrete set of information resources organized for the collection, processing, maintenance, use, sharing, dissemination, or disposition of information."*

Source: NIST SP 800-53 Rev. 4 Security and Privacy Controls for Federal Information Systems and Organization

Core Principles of Information Security

C	Prevent unauthorized access and use of information resources
I	Prevent unauthorized change and ensure reliability of information resources
A	Ensure timely availability of information resources

Users must exercise due care to ensure the confidentiality, integrity, and availability of the information resources under their care.

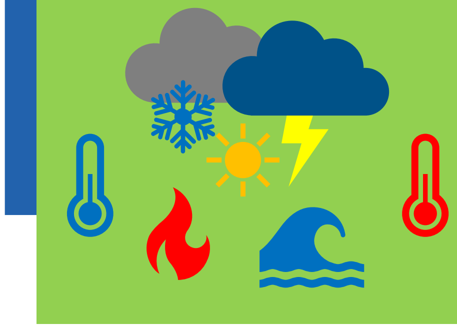


Threats

THREATS

Nature-Based

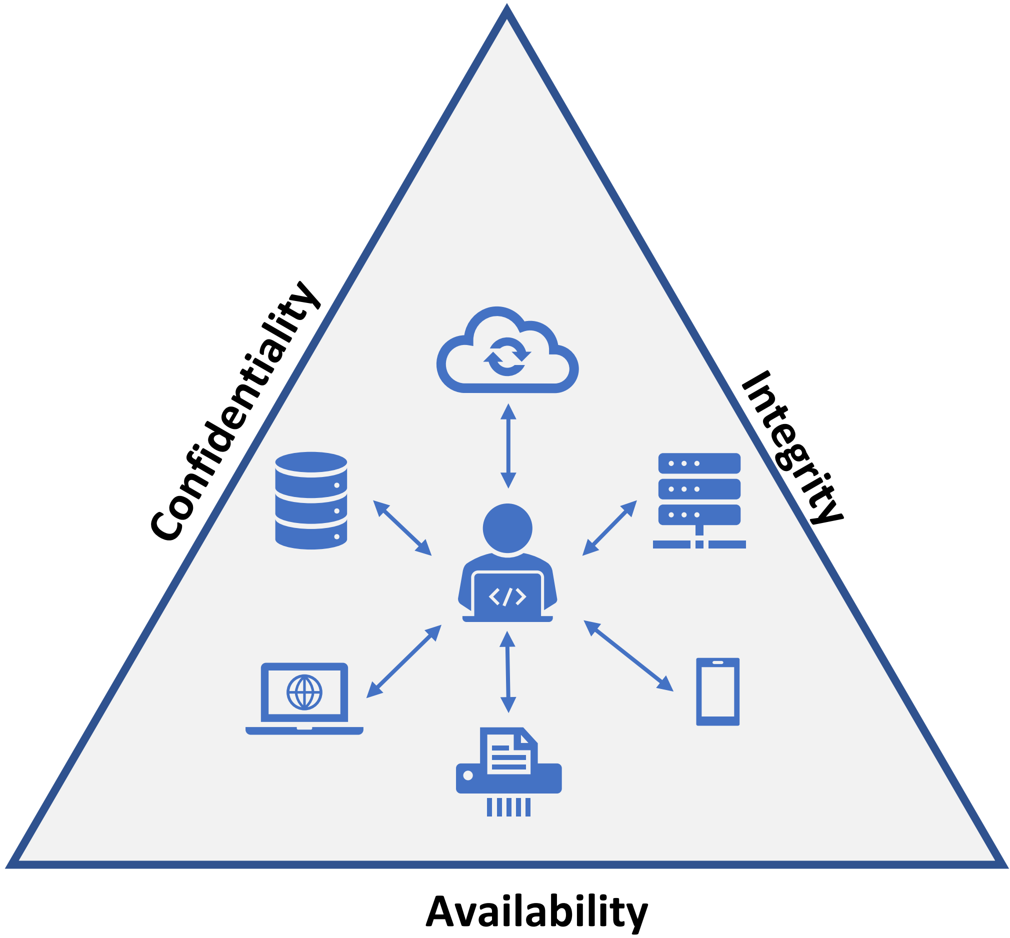
Threats that naturally occur, such as fires, floods, or hurricanes.



Human-Based

Threat actors who take actions to compromise the CIA of an organization.

Impact: Confidentiality, Integrity, and Availability



Definition: Threat

According to NIST, the term "**threat**" refers to *"[a]ny circumstance or event with the potential to adversely impact organizational operations, organizational assets, individuals, other organizations, or the Nation through a system via unauthorized access, destruction, disclosure, modification of information, and/or denial of service."*

Source: NIST SP 800-171 Rev. 1

Threat Actors

THREAT ACTORS

HACKTIVISTS

Conduct attacks in furtherance of political interests.

CRIMINALS

Conduct attacks in furtherance of financial interests.

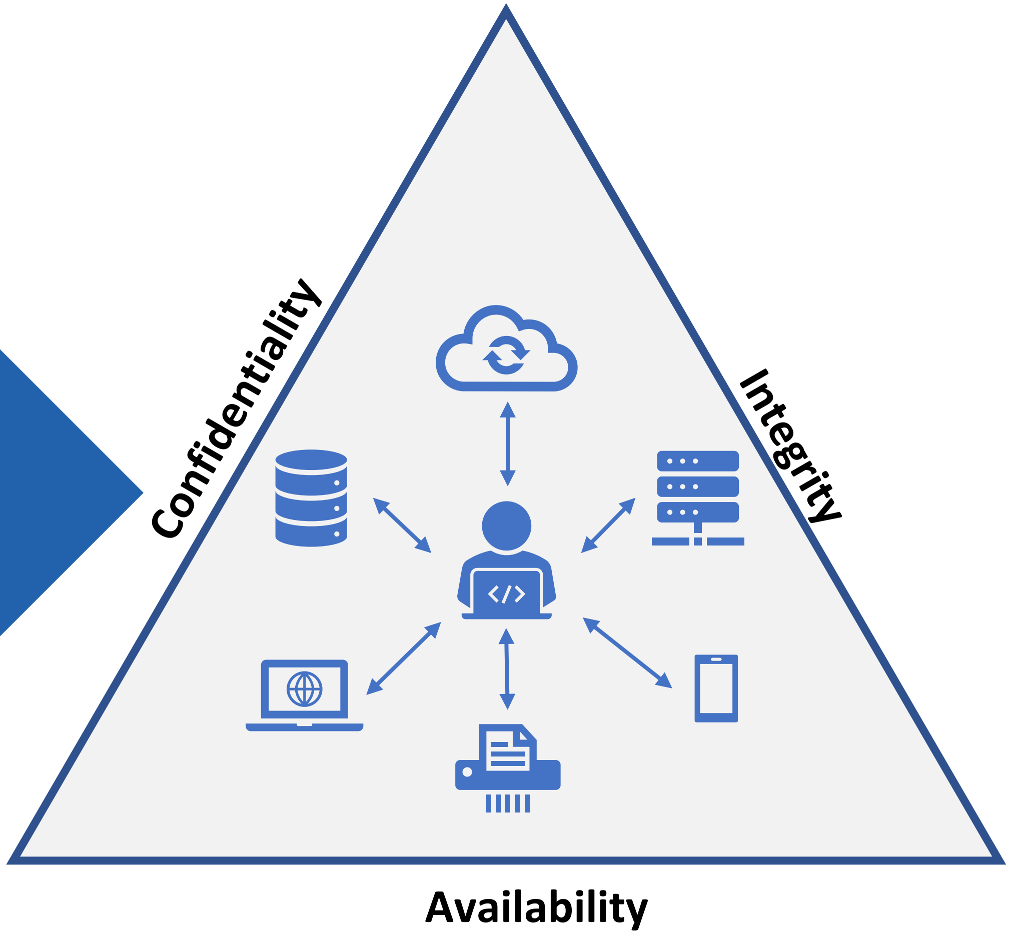
INSIDERS

Conduct attacks in furtherance of personal interests.

STATE ACTORS

Destruction, disruption, and espionage in furtherance of national interests.

Impact: Confidentiality, Integrity, and Availability



ODNI 2021 Annual Threat Assessment

Russia - Remains a top cyber threat as it refines and employs its espionage, influence, and attack capabilities.

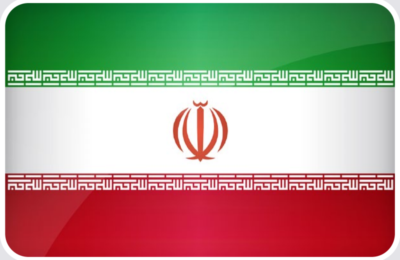
- Continues to target critical infrastructure, including underwater cables and industrial control systems.

- Considers cyber attacks an acceptable option to deter adversaries, control escalation, and prosecute conflicts.

China - Presents a prolific and effective cyber-espionage threat, possesses substantial cyber-attack capabilities, and presents a growing influence threat.

- Cyber pursuits and proliferation of related technologies increase the threats of cyber attacks against the US.

- Can cause localized, temporary disruptions to critical infrastructure within the US.



Iran - Expertise and willingness to conduct aggressive cyber operations make it a significant threat to the security of US networks and data.

- Has the ability to conduct attacks on critical infrastructure, as well as to conduct influence and espionage activities.

- Responsible for multiple cyber attacks against Israeli water facilities.

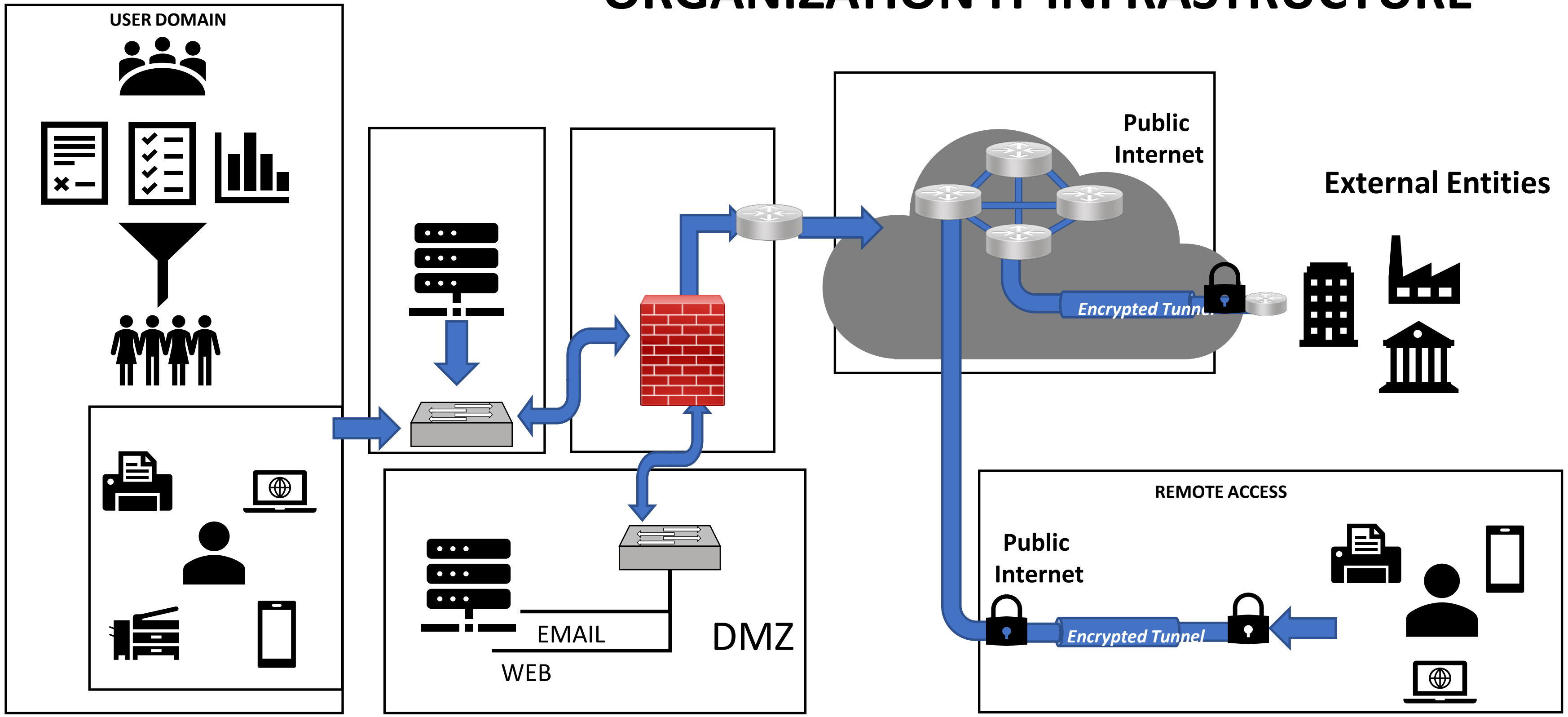
North Korea - Cyber program poses a growing espionage, theft, and attack threat.

- Possesses the expertise to cause temporary, limited disruptions of some critical infrastructure networks and disrupt business networks.

- Conducted cyber theft against financial institutions and cryptocurrency exchanges worldwide.

Cyber Attacks: Assets as Targets

ORGANIZATION IT INFRASTRUCTURE



Prime Targets: Vulnerable Devices, Users, and Vendors

THREAT ACTOR

Planning

- Identify target(s)

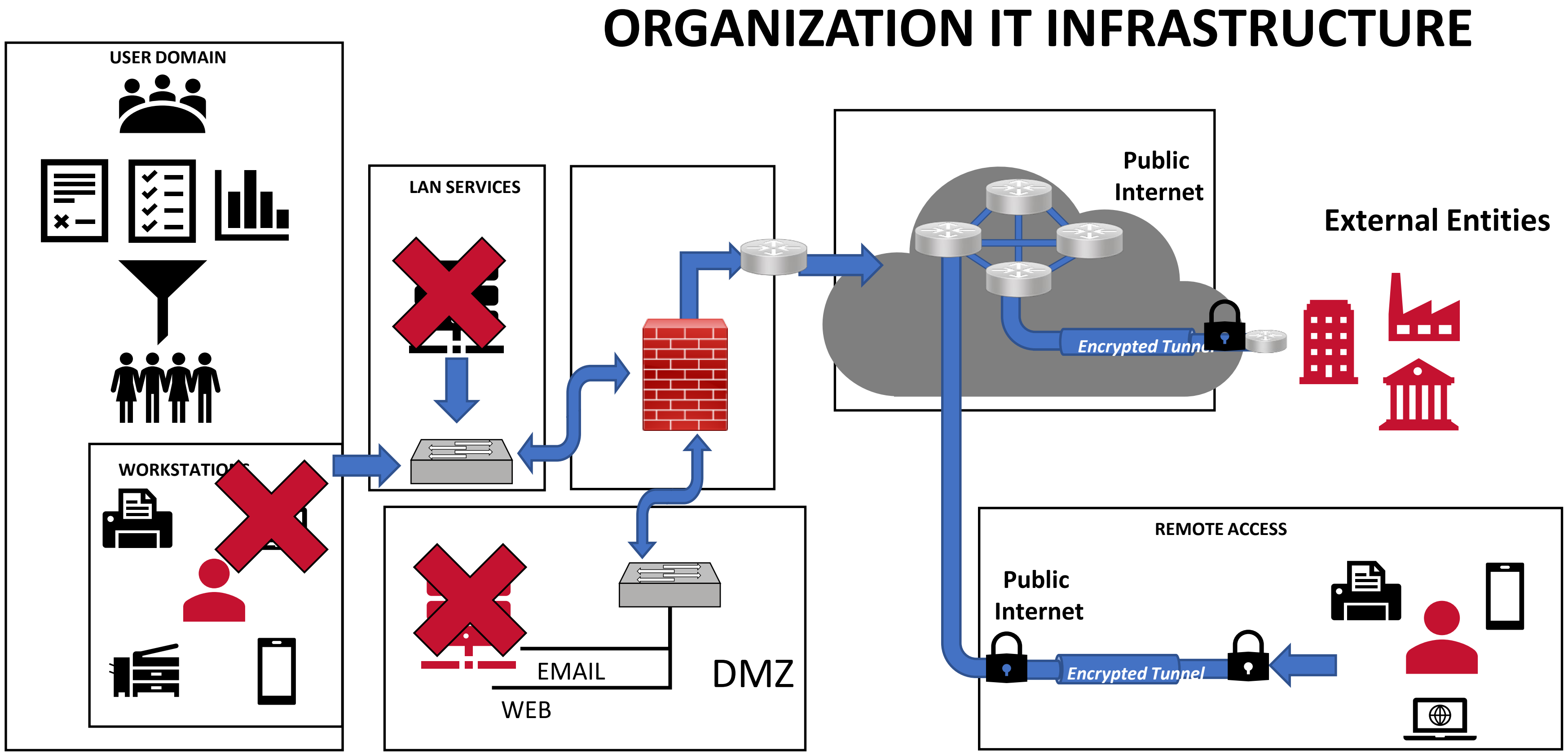
Discovery

- Identify target systems/users
- Identify vulnerabilities
- Identify exploits

Attack

- Gain access
- Maintain access
- Hide tracks
- Accomplish attack goal

Cyber Attacks: Service Disruption



THREAT ACTOR

Planning

- Identify target(s)

Discovery

- Identify target systems/users
- Identify vulnerabilities
- Identify exploits

Attack

- Gain access
- Maintain access
- Hide tracks
- Accomplish attack goal

Attacks on Assets>Service Disruption>Mission Failure

Cyber Attacks: Attacks on Users

Social Engineering Attacks

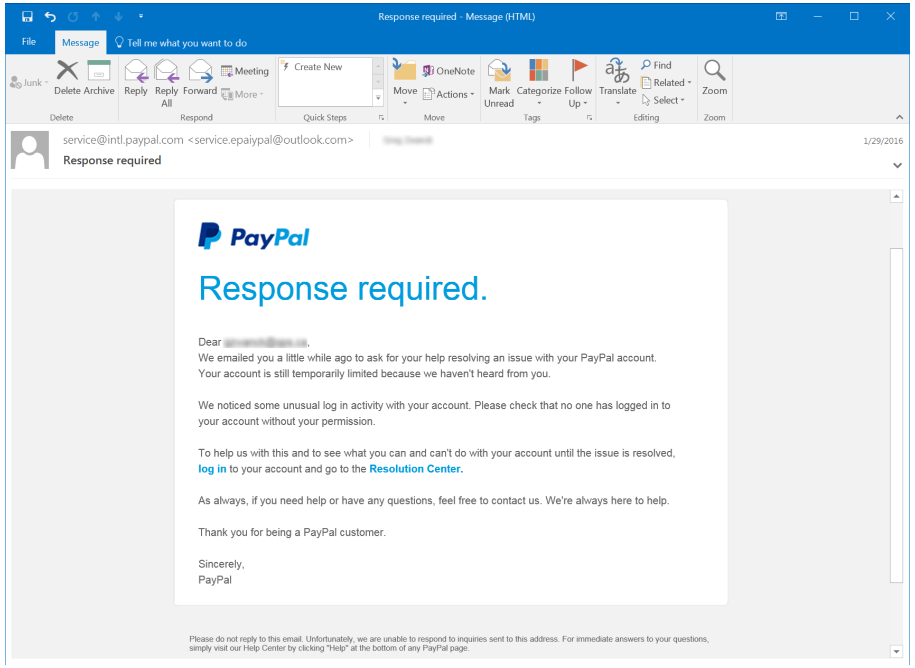
- **Description**:
  - According to NIST, social engineering refers to *“[t]he act of deceiving an individual into revealing sensitive information, obtaining unauthorized access, or committing fraud by associating with the individual to gain confidence and trust.”* **Source**: [NIST SP 800-63-3 Digital Identity Guidelines]
- **Threat Actor Objective**:
  - Manipulate a target (i.e., a user) into providing unauthorized access to information or information systems.
- **Common Threat Actor Techniques**:

  Phishing (Email-Based)

  SMISHING (SMS-Based)

  VISHING (Voice-Based)

  Masquerading (In-Person/Physical)



service@intl.paypal.com <service.epaiypal@outlook.com> [redacted]

1/29/2016

Response required

PayPal

Response required.

Dear [redacted],
We emailed you a little while ago to ask for your help resolving an issue with your PayPal account. Your account is still temporarily limited because we haven't heard from you.

We noticed some unusual log in activity with your account. Please check that no one has logged in to your account without your permission.

To help us with this and to see what you can and can't do with your account until the issue is resolved, **log in** to your account and go to the **Resolution Center.**

As always, if you need help or have any questions, feel free to contact us. We're always here to help.

Thank you for being a PayPal customer.

Sincerely,
PayPal

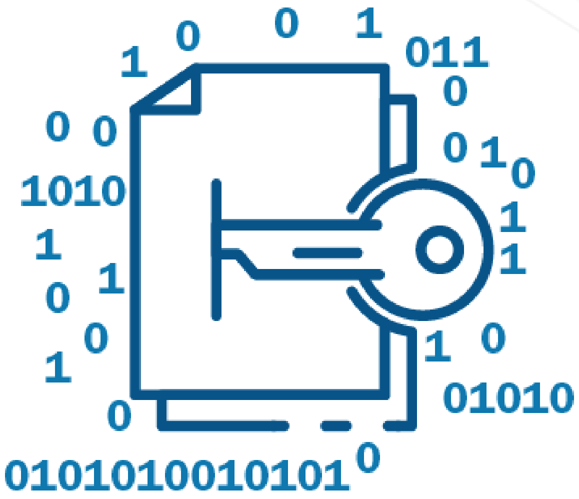
Please do not reply to this email. Unfortunately, we are unable to respond to inquiries sent to this address. For immediate answers to your questions, simply visit our Help Center by clicking "Help" at the bottom of any PayPal page.

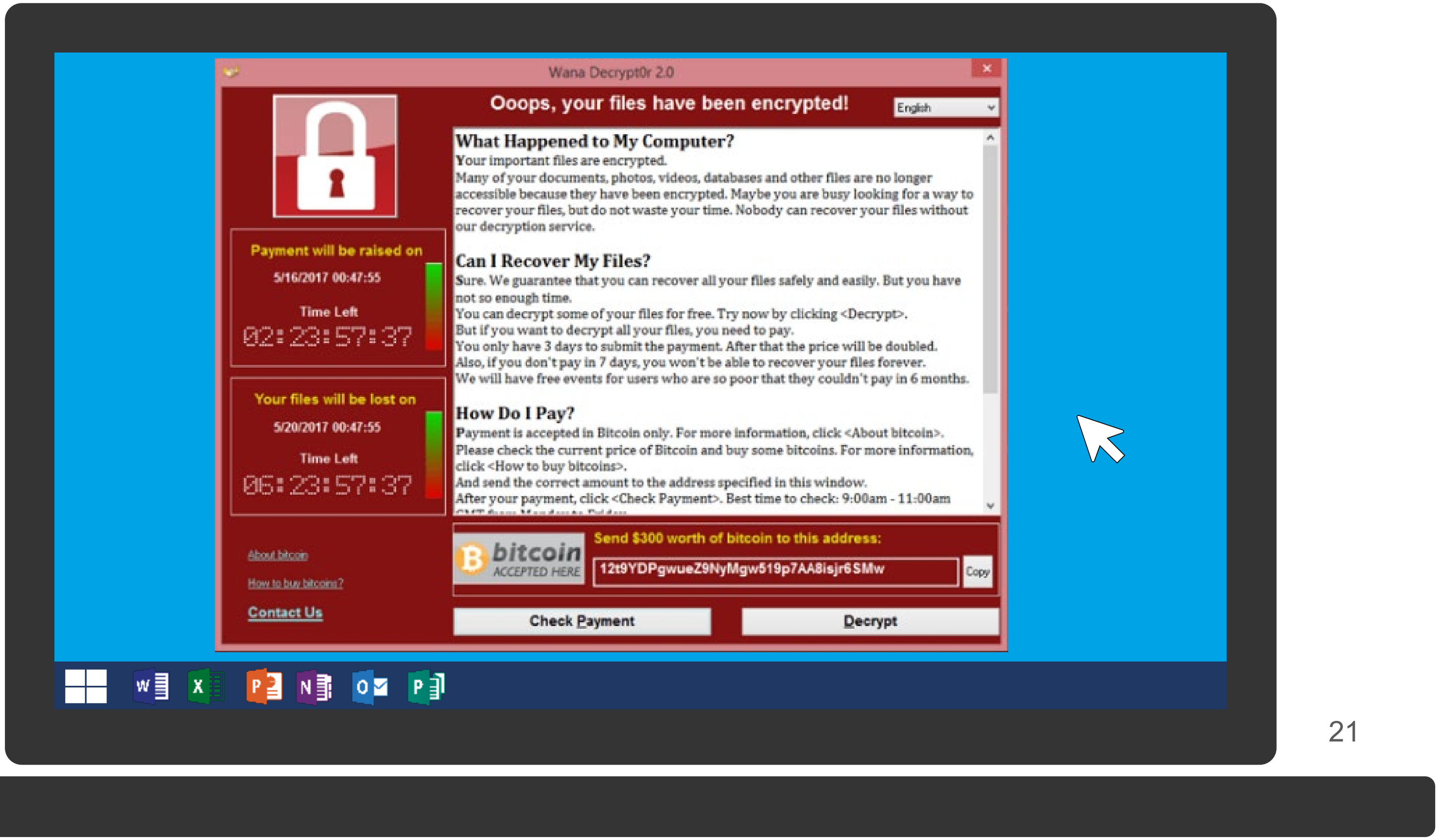
Image Source: knowbe4.com

Cyber Attacks: Ransomware

Ransomware Attack

- **Ransomware:** the term “**ransomware**” refers to *“a form of malware designed to encrypt files on a device, rendering any files and the systems that rely on them unusable. Malicious actors then demand ransom in exchange for decryption.”*
- **Source**: CISA Ransomware Guide 2020





Ooops, your files have been encrypted!

What Happened to My Computer?

Your important files are encrypted.
Many of your documents, photos, videos, databases and other files are no longer accessible because they have been encrypted. Maybe you are busy looking for a way to recover your files, but do not waste your time. Nobody can recover your files without our decryption service.

Can I Recover My Files?

Sure. We guarantee that you can recover all your files safely and easily. But you have not so enough time.
You can decrypt some of your files for free. Try now by clicking <Decrypt>.
But if you want to decrypt all your files, you need to pay.
You only have 3 days to submit the payment. After that the price will be doubled.
Also, if you don't pay in 7 days, you won't be able to recover your files forever.
We will have free events for users who are so poor that they couldn't pay in 6 months.

How Do I Pay?

Payment is accepted in Bitcoin only. For more information, click <About bitcoin>.
Please check the current price of Bitcoin and buy some bitcoins. For more information, click <How to buy bitcoins>.
And send the correct amount to the address specified in this window.
After your payment, click <Check Payment>. Best time to check: 9:00am - 11:00am

Send $300 worth of bitcoin to this address:

12t9YDPgwueZ9NyMgw519p7AA8isjr6SMw

Shields Up: Objective

https://www.cisa.gov/shields-up

Heightened Cybersecurity Posture

- Objective: Adopt a Heightened Cybersecurity Posture
- Near-Term Actions:
  1. Minimize Attack Surface
     i. Reducing the likelihood of a damaging cyber intrusion
  2. Monitor and Protect Network
     i. Detecting a potential cyber intrusion
  3. Incident Response: Exercise Your Plan
     i. Prepare to respond to cyber intrusions
  4. Operational Resilience: Backups & Redundancy
     i. Maximize operational resilience to a cyber incident
  5. See Something, Report Something

https://www.cisa.gov/free-cybersecurity-services-and-tools

https://www.cisa.gov/shields-up

Step 1: Minimize Attack Surface

Reduce the Likelihood of Damaging Cyber Intrusions

Minimize Attack Surface: Near-Term Steps

- Minimize Attack Surface and Harden Assets (Lock Doors & Windows)
  - Implement Multi-Factor Authentication for all accounts according to best practices
  - Enforce a strong password policy across the organization
  - Stop Bad Practices
    - End-of-Life Software, Default Accounts, Single-Factor Authentication
  - Update Software
    - Prioritize known exploitable vulnerabilities identified by CISA
  - System Hardening
    - Remove unnecessary accounts, ports, services, software on machines
  - Signup for CISA's Cyber Hygiene Services (External/Internet-Facing Scans)
    - Vulnerability Scanning
    - Web Application Scanning
  - Perform regular internal vulnerability scans
  - Run antivirus software throughout your network
  - Enable strong spam filters to prevent phishing emails from reaching end user
    - Train end users to identify, respond to, and report on phishing attacks

https://www.cisa.gov/uscert/shields-technical-guidance

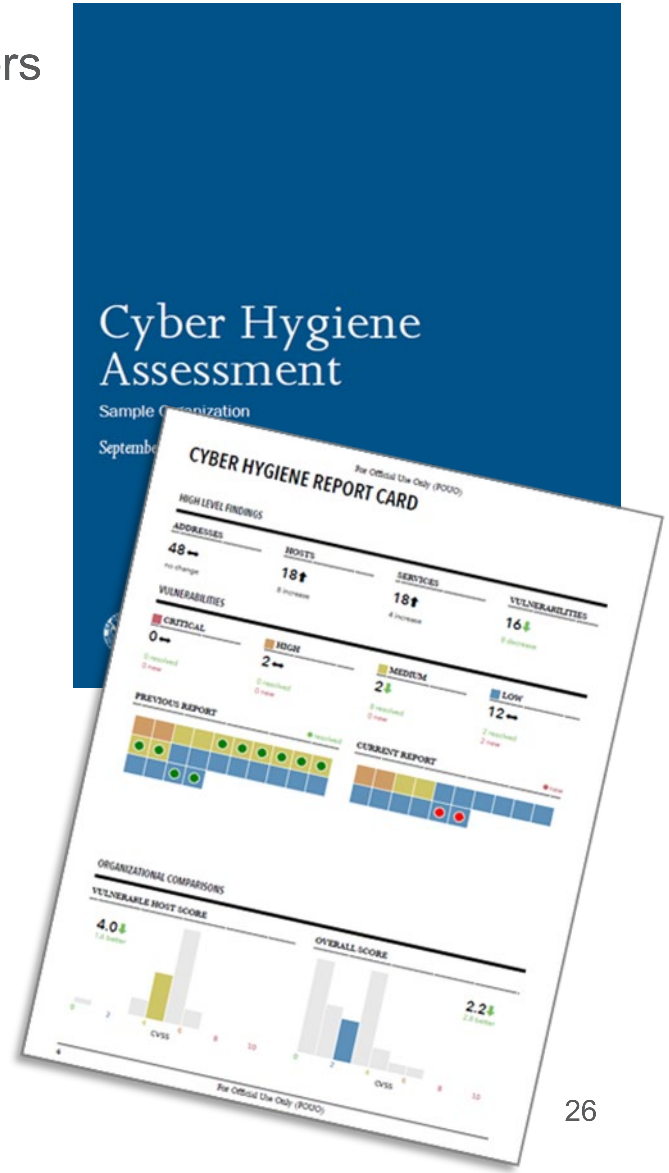
Vulnerability Scanning Service (CyHy)

Assess Internet accessible systems for known vulnerabilities and configuration errors

Work with organization to proactively mitigate threats and risks to systems

Activities include:

- Network Mapping
  - ➢ Identify public IP address space
  - ➢ Identify hosts that are active on IP address space
  - ➢ Determine the O/S and Services running
  - ➢ Re-run scans to determine any changes
  - ➢ Graphically represent address space on a map
- Network Vulnerability & Configuration Scanning
  - ➢ Identify network vulnerabilities and weakness



Cyber Hygiene Assessment

Sample Organization

Septembe

CYBER HYGIENE REPORT CARD

For Official Use Only (FOUO)

HIGH LEVEL FINDINGS

ADDRESSES 48 ↔ no change

HOSTS 18 ↑ 8 increase

SERVICES 18 ↑ 4 increase

VULNERABILITIES 16 ↓

VULNERABILITIES

CRITICAL 0 ↔ 0 resolved 0 new

HIGH 2 ↔ 0 resolved 0 new

MEDIUM 2 ↓ 8 resolved 0 new

LOW 12 ↔ 2 resolved 2 new

PREVIOUS REPORT ● resolved

CURRENT REPORT ● new

ORGANIZATIONAL COMPARISONS

VULNERABLE HOST SCORE 4.0 ↓

OVERALL SCORE 2.2 ↓

For Official Use Only (FOUO)

https://www.cisa.gov/cyber-hygiene-services

Web Application Scanning Service (CyHy)

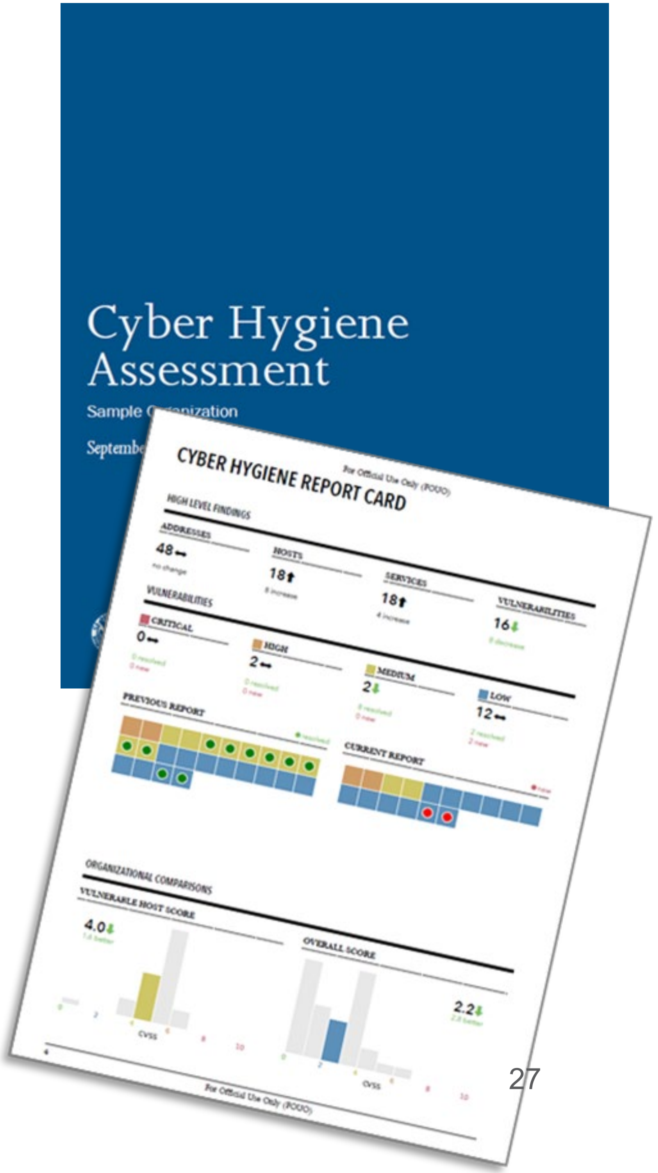
An Internet-based scanning service that assesses the "health" of your publicly accessible web applications, checking for known vulnerabilities and weak configurations.

Scanning Objectives:

- Maintain enterprise awareness of your publicly accessible web-based assets
- Provide insight into how systems and infrastructure appear to potential attackers
- Drive proactive mitigation of vulnerabilities to help reduce overall risk

Scanning Phases

- Discovery Scanning: Identifying active, internet-facing web applications
- Vulnerability Scanning: initiate non-intrusive checks to identify vulnerabilities and configuration weaknesses



Cyber Hygiene Assessment

Sample Organization

Septembe

CYBER HYGIENE REPORT CARD

For Official Use Only (FOUO)

HIGH LEVEL FINDINGS

ADDRESSES 48 no change

HOSTS 18 8 increase

SERVICES 18 4 increase

VULNERABILITIES 16 8 decrease

VULNERABILITIES

CRITICAL 0 0 resolved 0 new

HIGH 2 0 resolved 0 new

MEDIUM 2 8 resolved 0 new

LOW 12 2 resolved 2 new

PREVIOUS REPORT

CURRENT REPORT

ORGANIZATIONAL COMPARISONS

VULNERABLE HOST SCORE 4.0 1.6 better

OVERALL SCORE 2.2 2.8 better

For Official Use Only (FOUO)

https://www.cisa.gov/cyber-hygiene-services

Step 2: Monitor and Protect

Take Steps to Quickly Detect a Potential Intrusion

Monitor and Protect

- Monitor and Protect the Network: Near-Term Steps for "Heightened Security Posture"
  - Monitor your network for unusual behavior and vulnerabilities
    - Enable logging
    - Monitor hosts
    - Monitor network traffic
    - Monitor external vendors and/or contractors
    - Perform regular internal vulnerability scans on your network
  - Deploy host- and network-based anti-virus/anti-malware controls
    - Keep the signatures updated

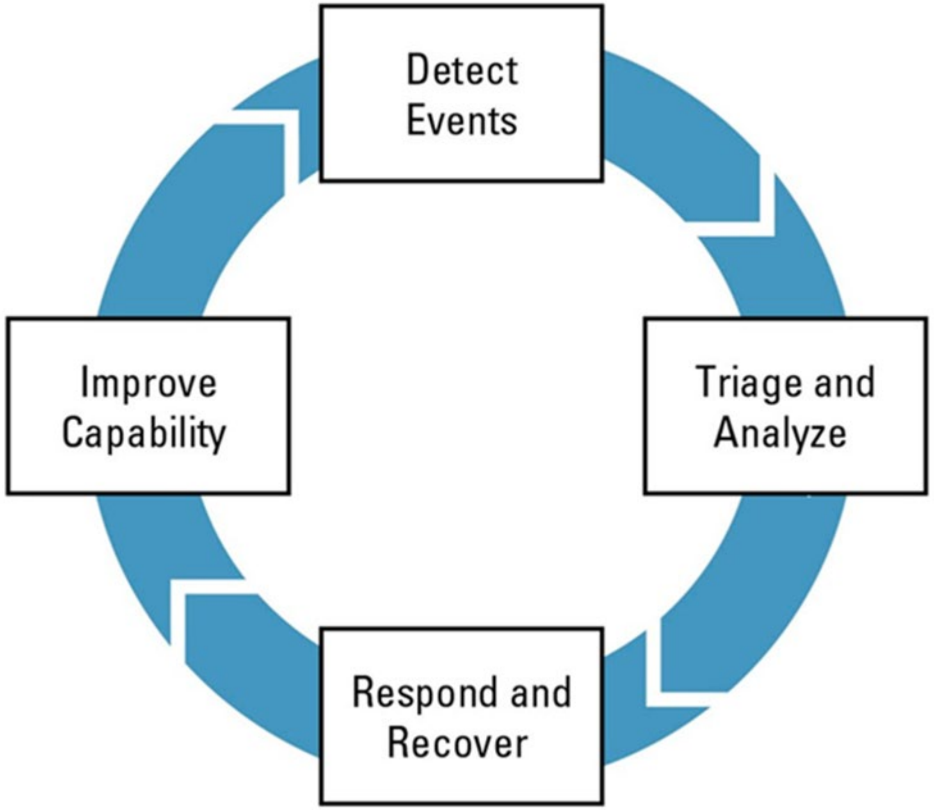
Step 3: Incident Management

Be Prepared to Respond to Cyber Incidents

What is Incident Management?

The process of detecting, analyzing, responding to, and improving from disruptive events is known as **incident management**.

The **goal** of incident management is to mitigate the impact of a disruptive event.



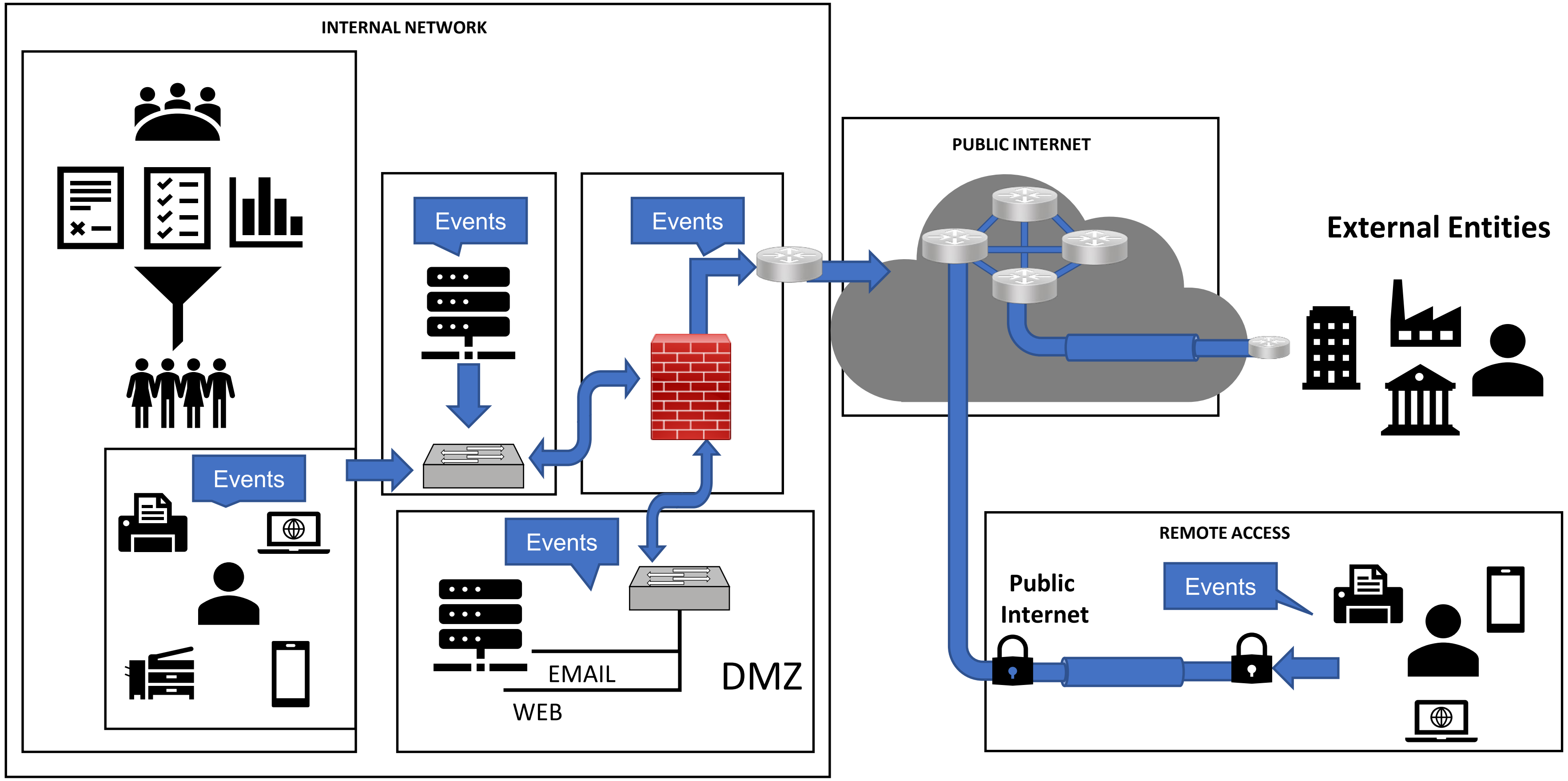
Detect Events

Triage and Analyze

Respond and Recover

Improve Capability

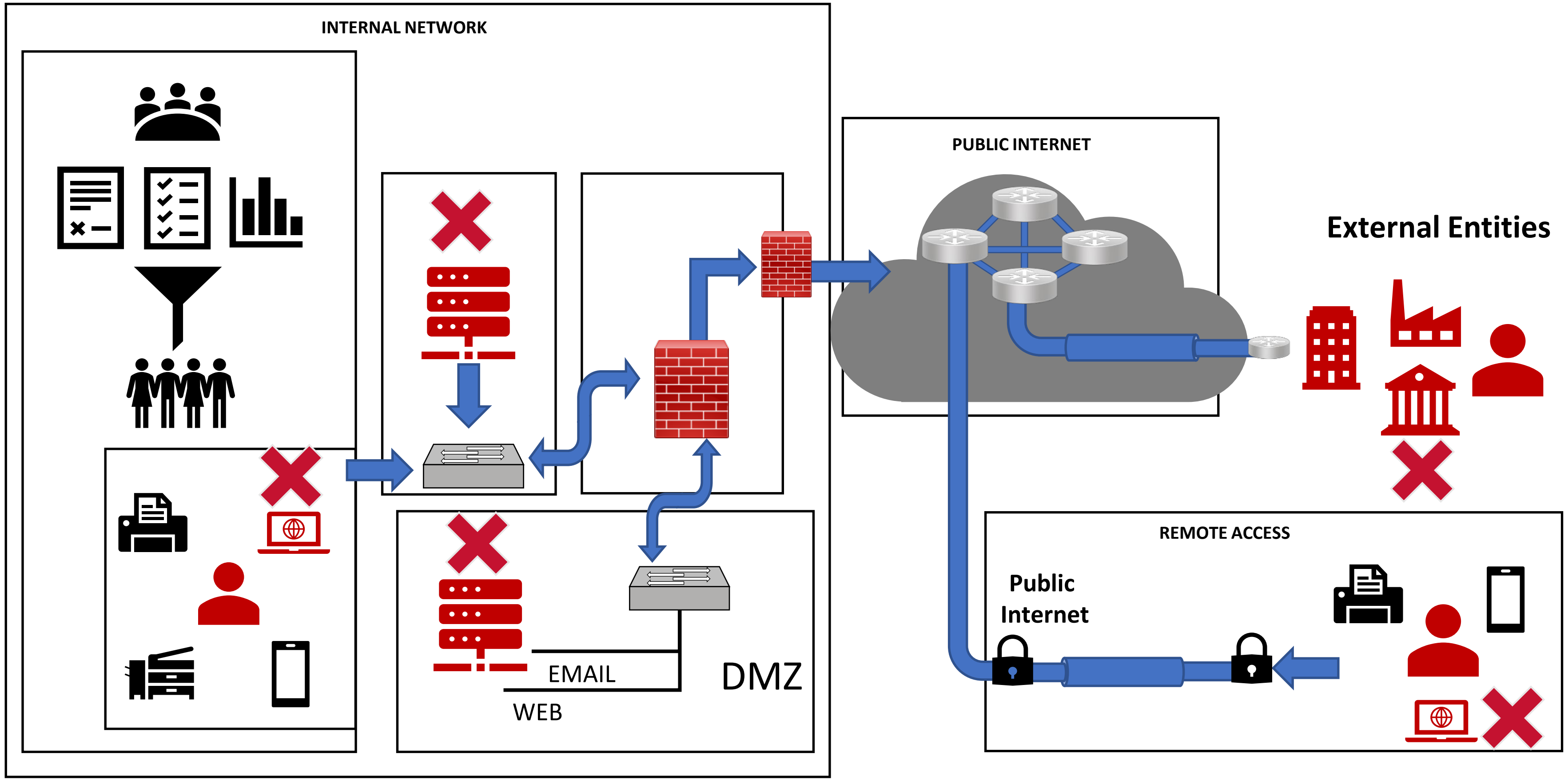
What's an "event"?



- **Event Defined**:
  - An event is "one or more occurrences that affect organizational assets and have the **potential** to disrupt operations."
  - An event may be any <u>observable</u> or <u>measurable</u> occurrence in the organization's systems or network
- **Event Examples**:
  - Account login attempts
  - File access
  - File modification
  - File deletion
  - File transfers
  - Remote access of internal resources
  - Network traffic blocked at the firewall

Note: Events are generated by users and systems interacting with the technology assets in the organization's network. Most are imperceptible without specialized tools.

What’s an “incident”?



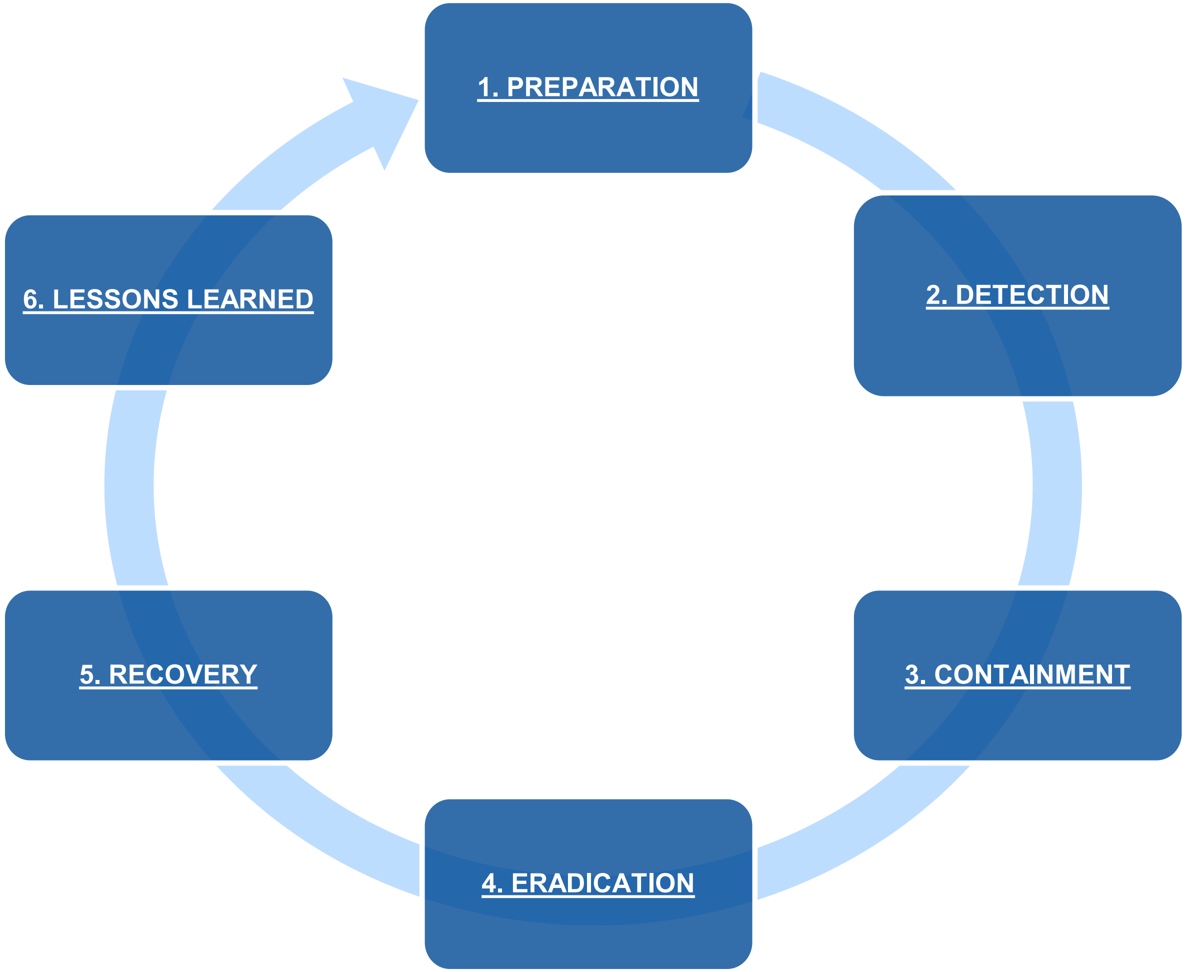
- **Incident Defined**:
  - An incident is a high-magnitude event, or series of events, that:
    - Affects organizational operations;
    - Impacts the confidentiality, integrity, or availability of information systems;
    - Has a realized impact to operations; or
    - Requires a response in order to resume normal operations.
- **Incident Examples**:
  - Ransomware attack
  - Unauthorized access of technology or information assets
  - Denial of service attack

Note: Organizations define the criteria of what qualifies as an incident. That criteria determines when an incident is declared. Once an incident is declared, the organization executes its incident response plan, in order to contain the impact, eradicate the threat, and recover the affected systems to a pre-incident state.

What is an Incident Response Plan?

According to NIST, an **Incident Response Plan** is *"[t]he documentation of a predetermined set of instructions or procedures to detect, respond to, and limit consequences of a malicious cyber attacks against an organization's information system(s)."*

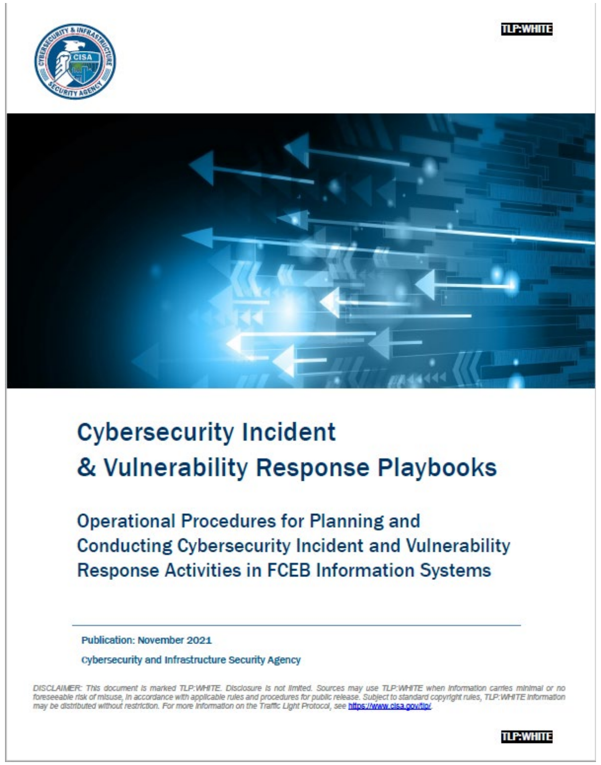
Source: [NIST SP 800-34 Rev 1]



Example Incident Response process based off NIST SP 800-61r2

Incident Management: Near-Term Steps

- Incident Management/Response: Near-Term Steps for “Heightened Security Posture”
  - Designate an incident response team
  - Assure availability of key personnel
  - If you have an incident response plan – assess it with a tabletop exercise
  - If you **DO NOT** have an incident response plan – create one now
    - CISA Ransomware Guide
    - Federal Government Cybersecurity Incident and vulnerability response playbooks
    - CISA Incident Management Workshop
- CISA Ransomware Guide
  - Part 1: Ransomware Prevention Best Practices
  - Part 2: Ransomware Response Checklist



TLP:WHITE

Cybersecurity Incident
& Vulnerability Response Playbooks

Operational Procedures for Planning and
Conducting Cybersecurity Incident and Vulnerability
Response Activities in FCEB Information Systems

Publication: November 2021

Cybersecurity and Infrastructure Security Agency

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https://www.cisa.gov/uscert/ncas/current-activity/2021/11/16/new-federal-government-cybersecurity-incident-and-vulnerability

https://www.cisa.gov/cisa-tabletop-exercises-packages

CISA Facilitated Tabletop Exercise

Description: A 3-hour non-technical facilitated cybersecurity tabletop exercise, where organizations are presented with a cyber threat-based scenario and are challenged to consider how their organization would respond, based on existing incident response plans.

Goal: The goal of the workshop is to provide organizations an opportunity to assess their level of readiness to respond to and recover from a cybersecurity incident impacting their operating environment.

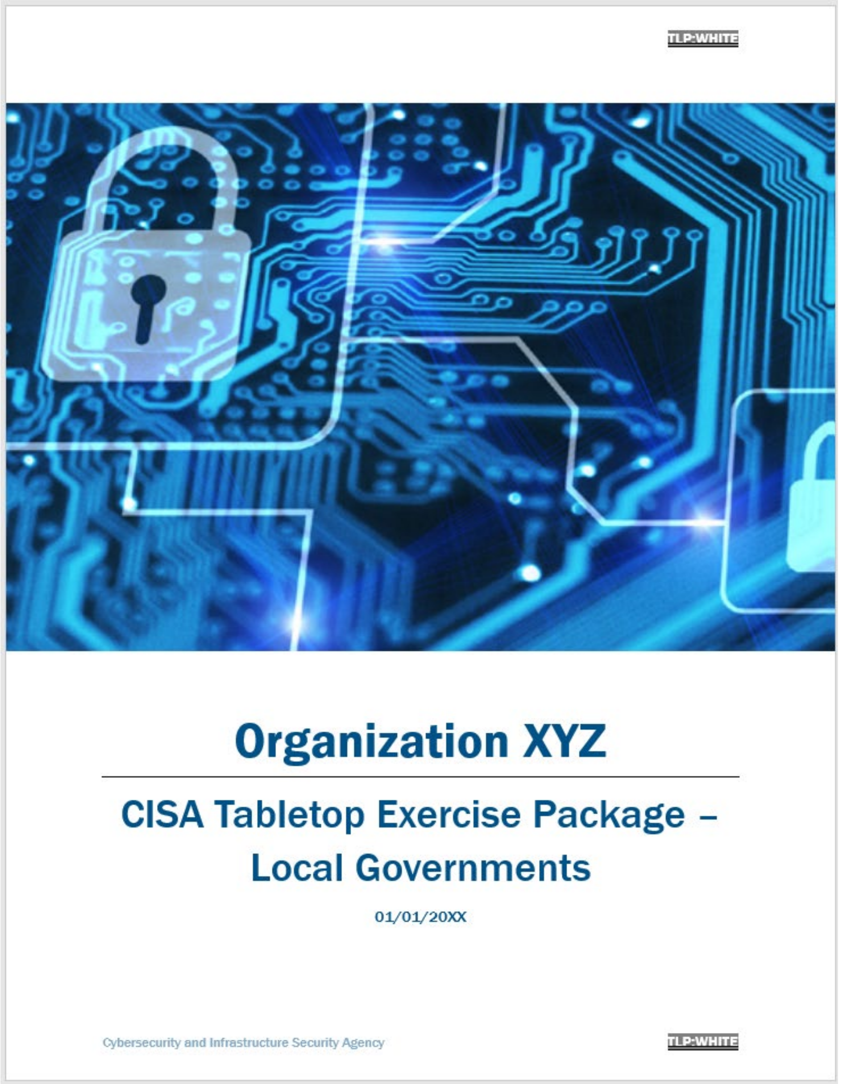
Audience: Organizations that want to assess their level or readiness to respond to and recover from a cybersecurity incident.

Format:

In-Person or Virtual

Key Topic: Incident Response, Incident Response Planning and Managing

Contact: ernesto.ballesteros@cisa.dhs.gov



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Organization XYZ

CISA Tabletop Exercise Package – Local Governments

01/01/20XX

Cybersecurity and Infrastructure Security Agency

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Cyber Incident Management Workshop

Description: A 2-hour non-technical and informative session designed to help organizations understand incident management concepts, key elements, planning and implementation.

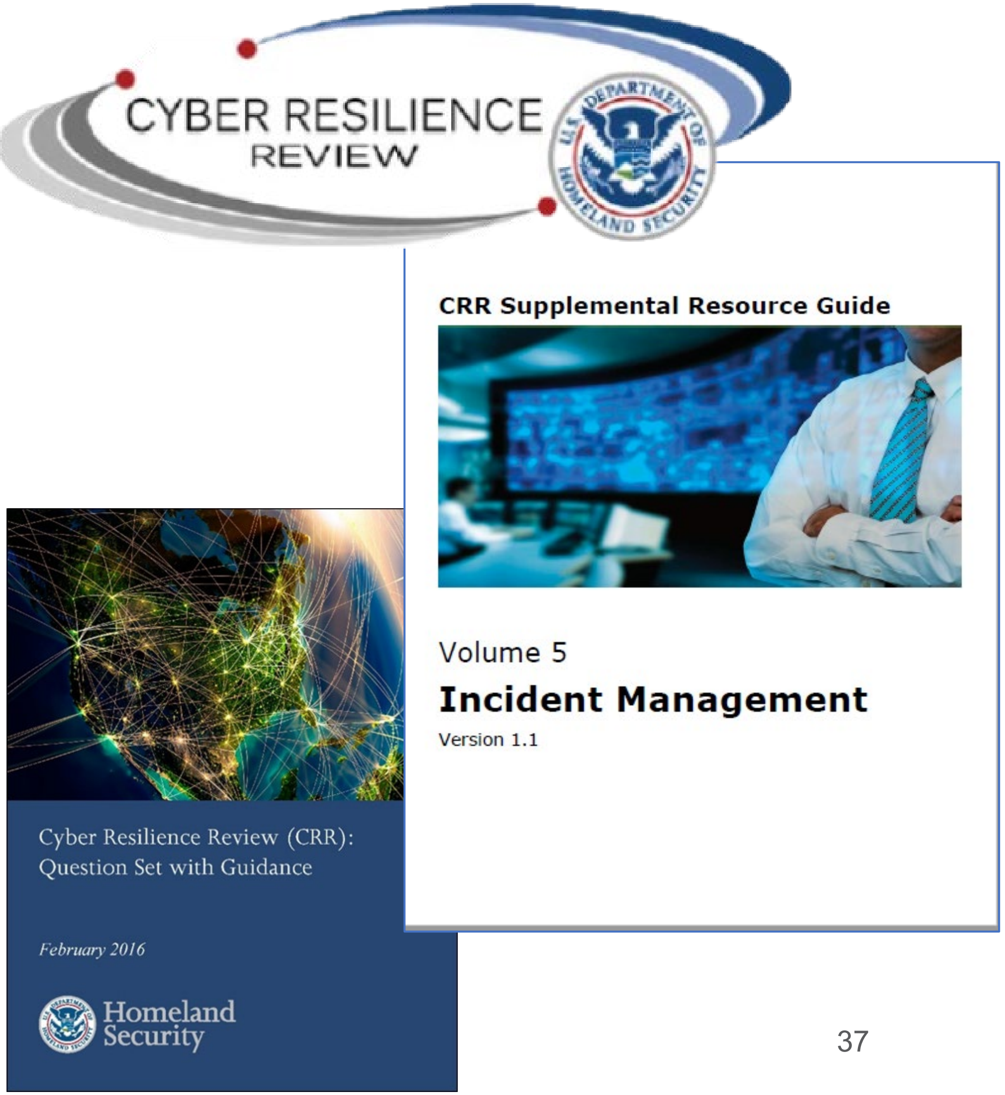
Goal: The goal of the workshop is to provide organizations with tangible, useful takeaway information on how to manage cybersecurity incidents effectively and, ultimately, achieve operational resilience.

Audience: Organizations that want to learn about an approach to developing a cyber incident management capability.

Format:

In-Person or Virtual

Key Topic: Incident Management, Incident Response Planning



CYBER RESILIENCE REVIEW

CRR Supplemental Resource Guide

Volume 5

Incident Management

Version 1.1

Cyber Resilience Review (CRR): Question Set with Guidance

February 2016

Homeland Security

Contact: ernesto.ballesteros@cisa.dhs.gov

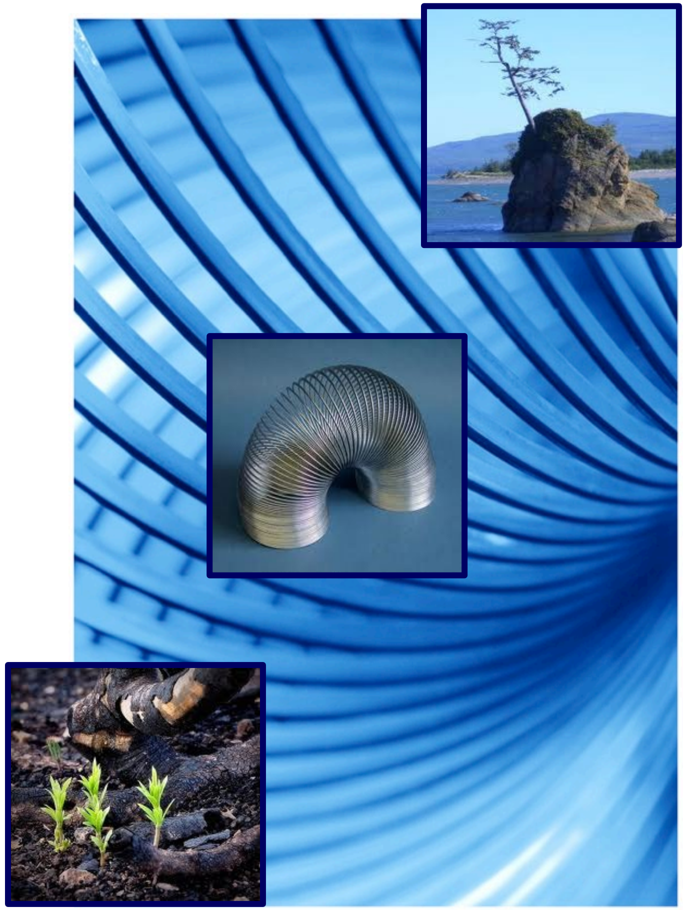
Step 4: Operational Resilience

Maximize Organization Resilience to Destructive Cyber Incidents

What is Operational Resilience?

The emergent property of an organization that allows it to:

- Prevent disruptions from occurring
- Quickly respond to and recover from a disruption affecting its most critical business processes and services



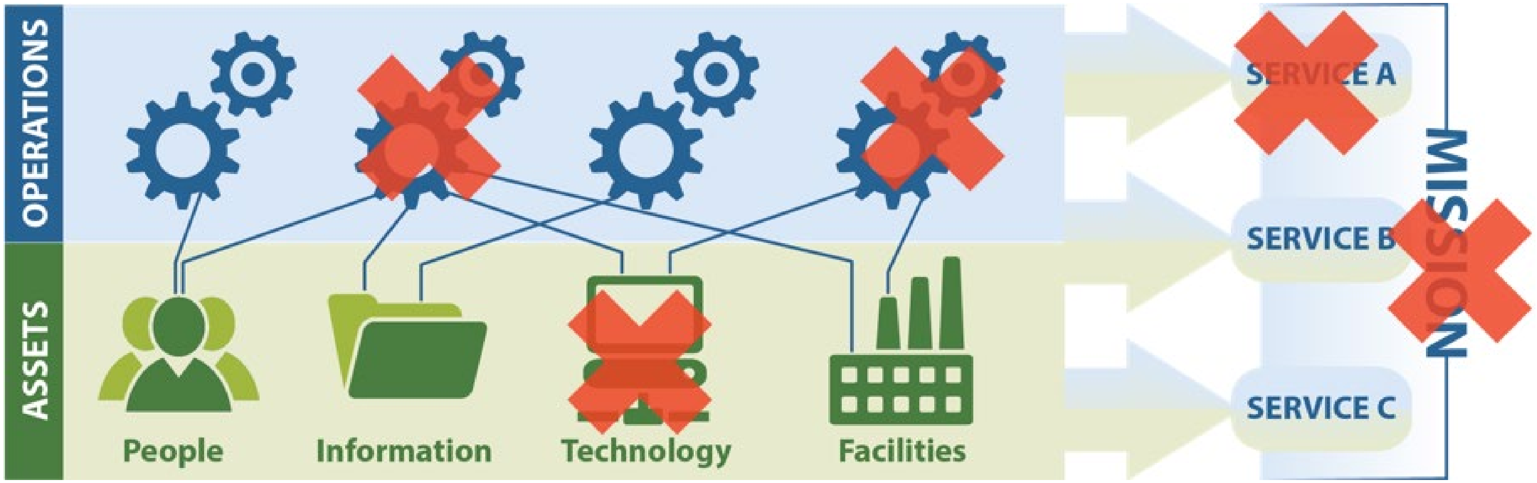
Making Operational Resilience Real

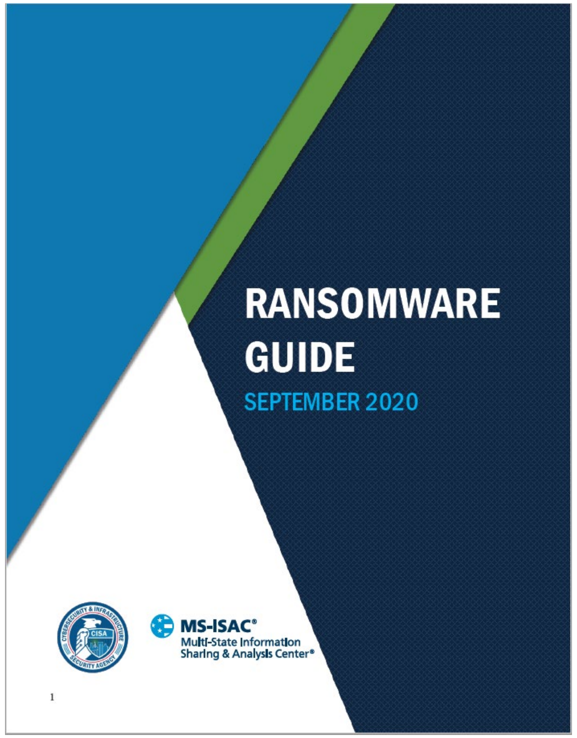
Operational resilience emerges from what we do, such as:

- Identifying critical services and assets
- Identifying and mitigating risks
- Planning for and managing vulnerabilities and incidents
- Performing service-continuity processes and planning
- Managing IT operations
- Managing, training, and deploying people
- Working with external partners

Operational Resilience: Near-Term Steps

- Operational Resilience: Near-Term Steps for “Heightened Security Posture”
  1. Backup mission-critical data, software, and “gold images”
  2. Store backups off-line (preferably encrypted)
  3. Test these backups
  4. Acquire backup/redundant mission-critical hardware
  5. Assess the readiness of your alternative/recovery site




RANSOMWARE GUIDE
SEPTEMBER 2020

https://www.cisa.gov/stopransomware/ransomware-guide

Cyber Resilience Review (CRR)

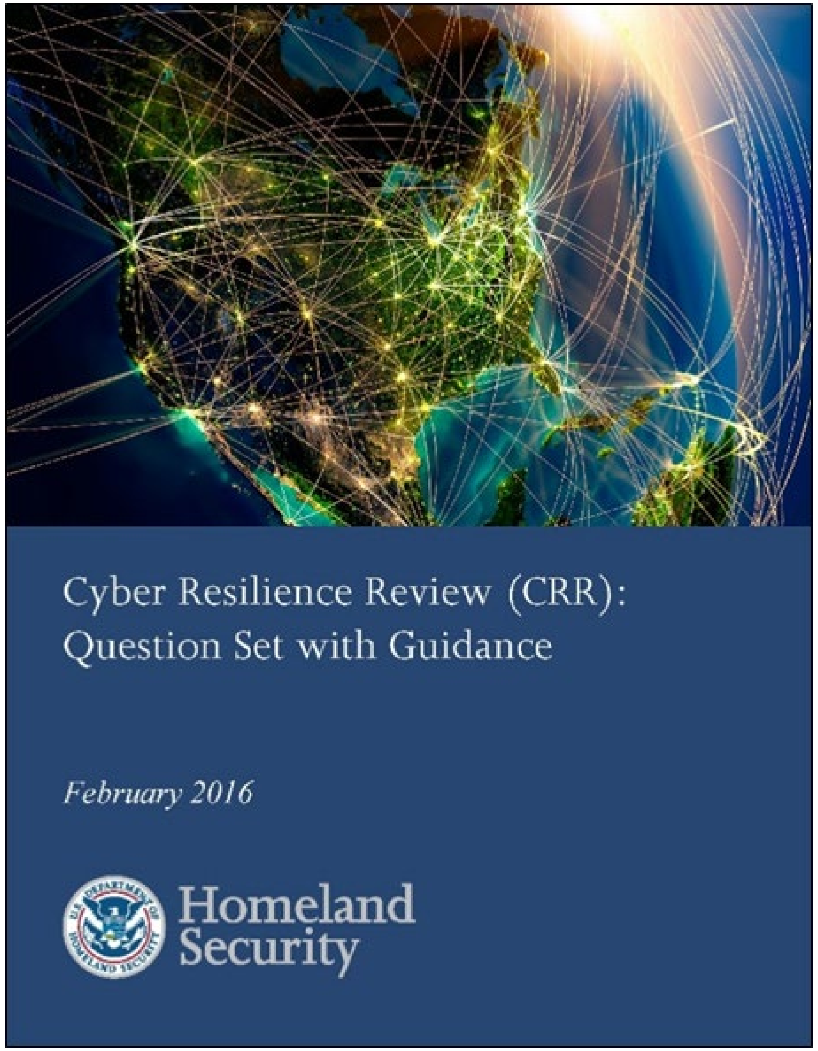
Purpose: The CRR is an assessment intended to evaluate an organization’s operational resilience and cybersecurity practices of its critical services

Delivery: The CRR can be

- Facilitated
- Self-administered

CRR Self-Assessment Package is available on the C-Cubed Voluntary Program website.

- Helps public and private sector partners understand and measure cyber security capabilities as they relate to operational resilience and cyber risk
- Based on the CERT ® Resilience Management Model (CERT® RMM)



Cyber Resilience Review (CRR):
Question Set with Guidance

February 2016

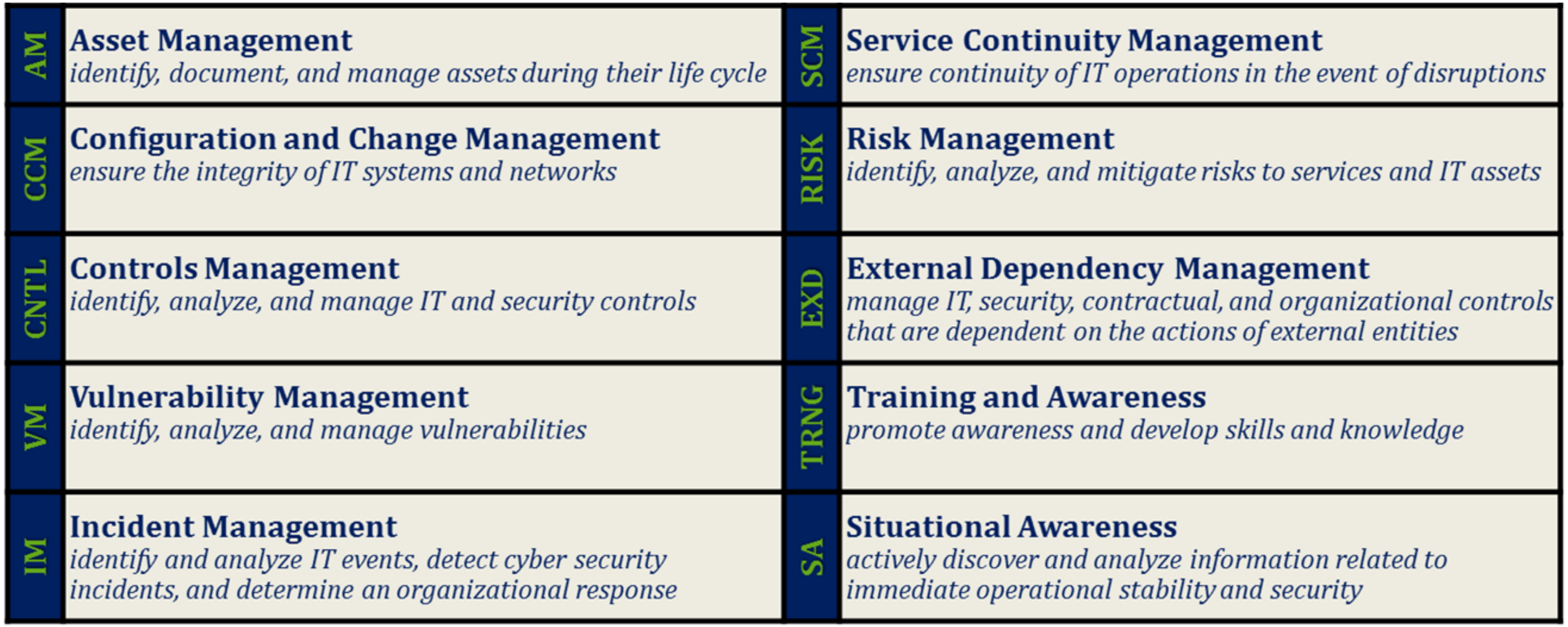
Homeland
Security

Contact: ernesto.ballesteros@cisa.dhs.gov

Cyber Resilience Review (CRR) | Domains

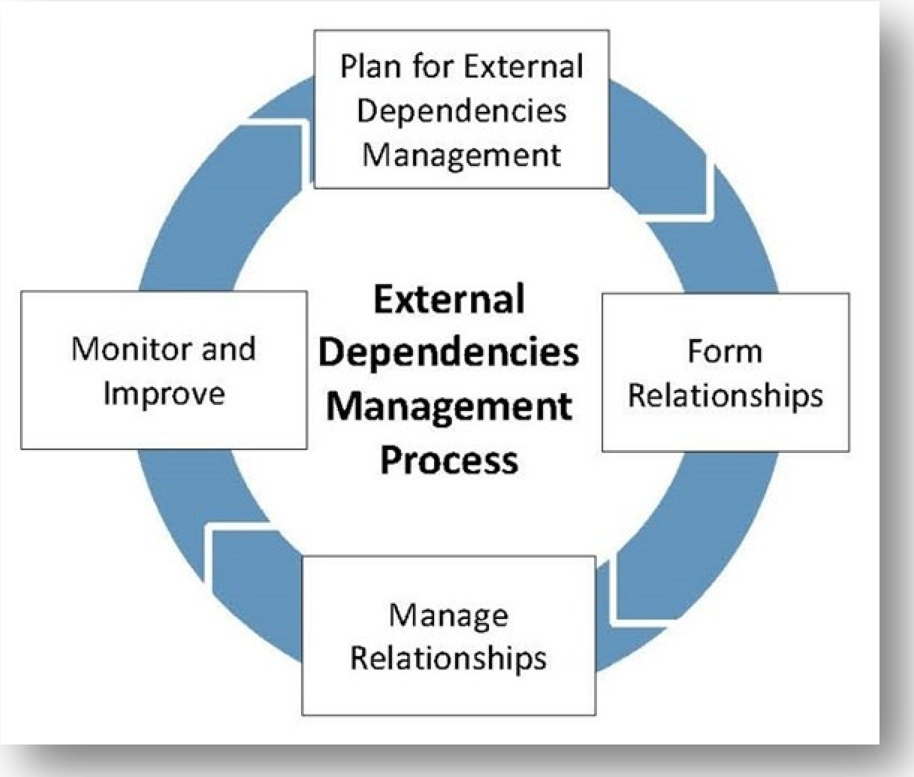
These represent key areas that typically contribute to an organization's cyber resilience— each domain focuses on:

- Documentation in place, and periodically reviewed & updated
- Communication and notification to all those who need to know
- Execution/Implementation & analysis in a consistent, repeatable manner
- Alignment of goals and practices within and across CRR domains



AM	**Asset Management** *identify, document, and manage assets during their life cycle*	SCM	**Service Continuity Management** *ensure continuity of IT operations in the event of disruptions*
CCM	**Configuration and Change Management** *ensure the integrity of IT systems and networks*	RISK	**Risk Management** *identify, analyze, and mitigate risks to services and IT assets*
CNTL	**Controls Management** *identify, analyze, and manage IT and security controls*	EXD	**External Dependency Management** *manage IT, security, contractual, and organizational controls that are dependent on the actions of external entities*
VM	**Vulnerability Management** *identify, analyze, and manage vulnerabilities*	TRNG	**Training and Awareness** *promote awareness and develop skills and knowledge*
IM	**Incident Management** *identify and analyze IT events, detect cyber security incidents, and determine an organizational response*	SA	**Situational Awareness** *actively discover and analyze information related to immediate operational stability and security*

External Dependency Management (EDM)


Plan for External Dependencies Management
Form Relationships
Manage Relationships
Monitor and Improve
External Dependencies Management Process

EDM process outlined in the External Dependencies Management Resource Guide

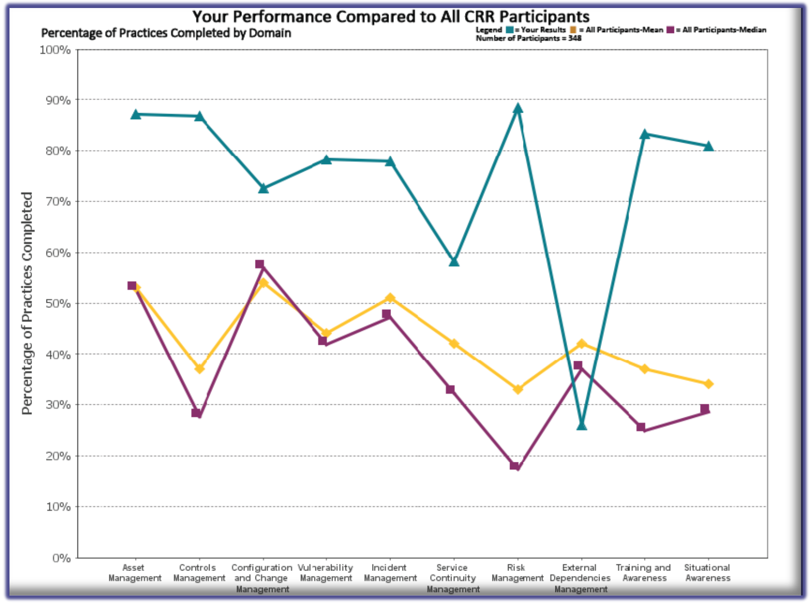
Overview: In 2016, DHS launched the External Dependencies Management (EDM) Assessment, focusing specifically on ensuring the protection and sustainment of services and assets that are dependent on the actions of third-party entities.

Background: External Dependencies Management is a domain covered by the CRR. However, EDM and associated issues (e.g., supply-chain management, vendor management) are not addressed at a comprehensive level within the CRR, resulting in the creation of a separate assessment.

Linkages to CRR: Despite operating at a more granular level than the CRR, the EDM Assessment borrows heavily from the CRR's methodological architecture and scoring system but remains a DHS-facilitated assessment.

Contact: ernesto.ballesteros@cisa.dhs.gov

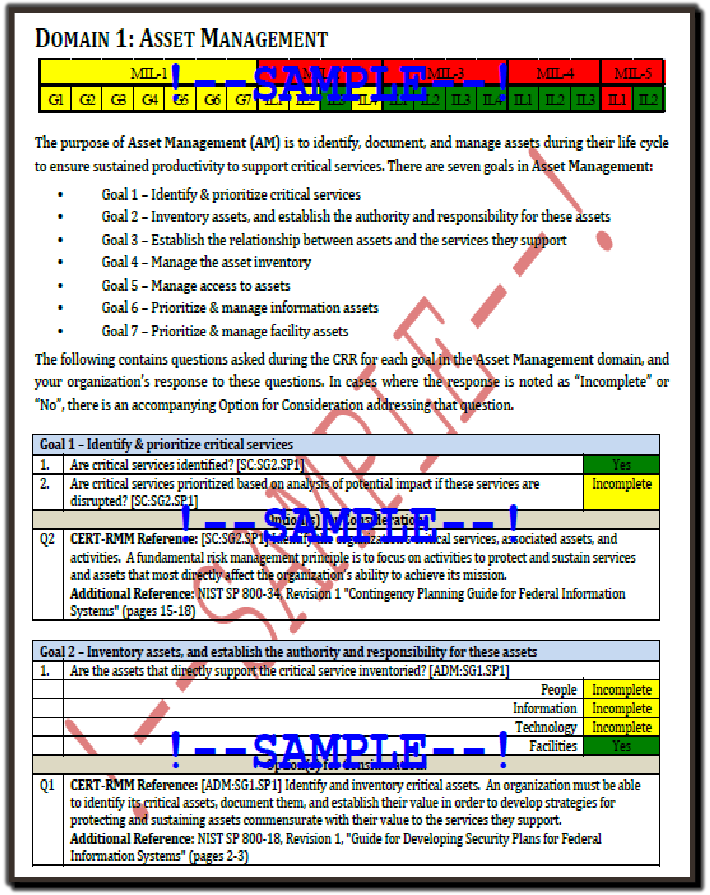
Benefits of CRR and/or EDM Assessment



Comparison data with other CRR participants *facilitated only*

A summary “snapshot” graphic, related to the **NIST Cyber Security Framework**.

Domain performance of existing cybersecurity capability and options for consideration for all responses



DOMAIN 1: ASSET MANAGEMENT

MIL-1							MIL-2				MIL-3				MIL-4			MIL-5	
G1	G2	G3	G4	G5	G6	G7	IL1	IL2	IL3	IL4	IL1	IL2	IL3	IL4	IL1	IL2	IL3	IL1	IL2

The purpose of Asset Management (AM) is to identify, document, and manage assets during their life cycle to ensure sustained productivity to support critical services. There are seven goals in Asset Management:

- Goal 1 – Identify & prioritize critical services
- Goal 2 – Inventory assets, and establish the authority and responsibility for these assets
- Goal 3 – Establish the relationship between assets and the services they support
- Goal 4 – Manage the asset inventory
- Goal 5 – Manage access to assets
- Goal 6 – Prioritize & manage information assets
- Goal 7 – Prioritize & manage facility assets

The following contains questions asked during the CRR for each goal in the Asset Management domain, and your organization's response to these questions. In cases where the response is noted as "Incomplete" or "No", there is an accompanying Option for Consideration addressing that question.

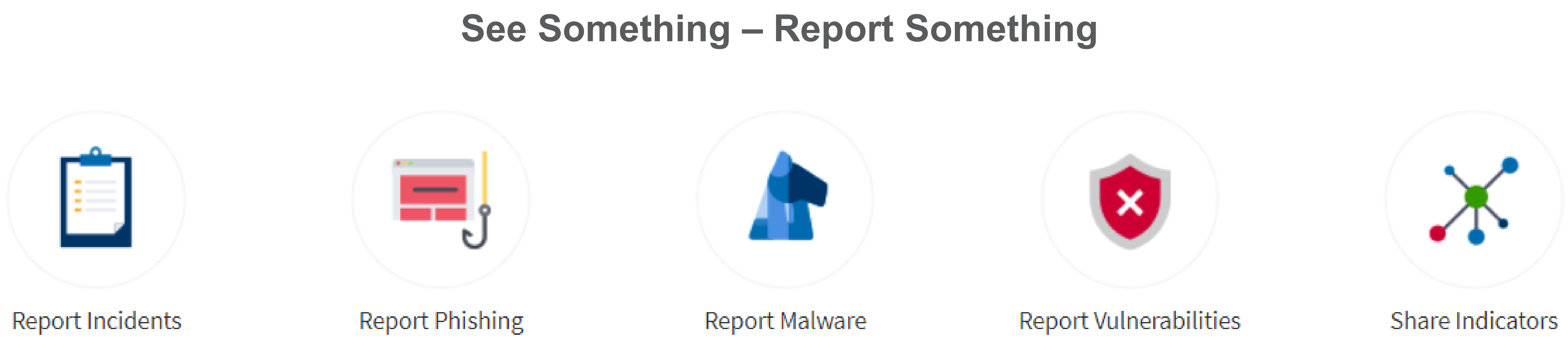
Goal 1 – Identify & prioritize critical services		
1.	Are critical services identified? [SC:SG2.SP1]	Yes
2.	Are critical services prioritized based on analysis of potential impact if these services are disrupted? [SC:SG2.SP1]	Incomplete
	Option(s) for Consideration	
Q2	**CERT-RMM Reference:** [SC:SG2.SP1] Identify the organization's critical services, associated assets, and activities. A fundamental risk management principle is to focus on activities to protect and sustain services and assets that most directly affect the organization's ability to achieve its mission. **Additional Reference:** NIST SP 800-34, Revision 1 "Contingency Planning Guide for Federal Information Systems" (pages 15-18)	

Goal 2 – Inventory assets, and establish the authority and responsibility for these assets		
1.	Are the assets that directly support the critical service inventoried? [ADM:SG1.SP1]	
	People	Incomplete
	Information	Incomplete
	Technology	Incomplete
	Facilities	Yes
	Option(s) for Consideration	
Q1	**CERT-RMM Reference:** [ADM:SG1.SP1] Identify and inventory critical assets. An organization must be able to identify its critical assets, document them, and establish their value in order to develop strategies for protecting and sustaining assets commensurate with their value to the services they support. **Additional Reference:** NIST SP 800-18, Revision 1, "Guide for Developing Security Plans for Federal Information Systems" (pages 2-3)	

Step 5: See Something -- Report Something

Lower Reporting Thresholds

See Something – Report Something



See Something – Report Something

Report Incidents

Report Phishing

Report Malware

Report Vulnerabilities

Share Indicators

Organizations should report anomalous cyber activity and/or cyber incidents 24/7 to report@cisa.gov or [(888) 282-0870](tel:8882820870).

https://www.cisa.gov/uscert/report

Incident Reporting

CISA Incident Reporting System

Report incidents that include:

1. Attempts to gain unauthorized access to a system or its data;
2. Unwanted disruption or denial of service; or
3. Abuse or misuse of a system or data in violation of policy.

Report Incidents

CISA’s 24x7 contact number: 888-282-0870 | report@cisa.gov

FBI’s 24x7 CyWatch: 855-292-3937 | CyWatch@fbi.gov

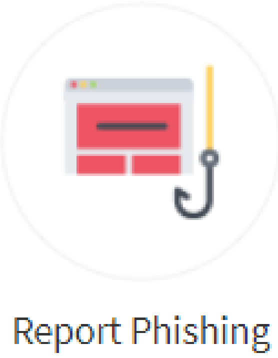
https://us-cert.cisa.gov/forms/report

Report Phishing

CISA Phishing Reporting

Report phishing:

1. We partner with the Anti-Phishing Working Group (APWG);
2. Report a phishing email message; or
3. Report a phishing website.



https://www.cisa.gov/uscert/report-phishing

Report Malware

CISA Advanced Malware Analysis Center

Report malware artifacts for analysis:

1. 24x7 dynamic analysis of malicious code;
2. Submissions made online;
3. Receive technical documentation outlining results of the analysis; and
4. Detailed recommendations for removal and recovery activities.

Report Malware

https://www.malware.us-cert.gov/

Report Vulnerabilities

CISA Coordinated Vulnerability Disclosure (CVD) Process

Report newly identified cybersecurity vulnerabilities in products and services with the affected vendor(s):

1. Collection;
2. Analysis;
3. Mitigation coordination;
4. Application of Mitigation; and
5. Disclosure.

Report Vulnerabilities

https://www.cisa.gov/coordinated-vulnerability-disclosure-process

Share Indicators and Defensive Measures

CISA Automated Indicator Sharing Program

Automated Indicator Sharing (AIS):

1. Real-time exchange of machine-readable cyber threat indicators and defensive measures;
2. AIS information sharing ecosystem of state, local, tribal, territorial, and private sector entities; and
3. Facilitates anonymized sharing with CISA and AIS community.

Share Indicators

https://www.cisa.gov/ais

Shields Up: Remain Vigilant

https://www.cisa.gov/shields-up

Next Steps

Forming a Partnership with CISA Pre-Incident

No-Cost Cyber Resources and Assessments

No-Cost Strategic Cybersecurity Resources:

- Cyber Resilience Review (CRR) Assessment (Strategic)
- External Dependencies Management (EDM) Assessment (Strategic)
- Cyber Infrastructure Survey (CIS) Assessment (Strategic)
- Ransomware Readiness Assessment (Strategic)
- Cybersecurity Workshops (Strategic)
- Cybersecurity Tabletop Exercises (CTTX) (Strategic)

No-Cost Technical Cybersecurity Resources:

- Phishing Campaign Assessment (PCA) (Technical)
- Vulnerability and Web Application Scanning Service (CyHy) (Technical)
- Validated Architecture Design Review (VADR) (Technical)
- Remote Penetration Test (Technical)
- Risk & Vulnerability Assessment (Technical)

STRATEGIC
(C-Suite Level)

TECHNICAL
(Network-Administrator Level)

Next Steps: Partnership Formation

Would you like to know more about CISA's no-cost cyber resources and partnership opportunities?

Next Steps:

1. Contact your CISA Regional Office, State Cybersecurity Coordinator, or Cybersecurity Advisor;
2. Request an initial **CISA Cyber Mission & Resource Briefing** from your Cybersecurity Advisor (CSA) or State Cybersecurity Coordinator; (ernesto.ballesteros@cisa.dhs.gov)
3. Explore partnership opportunities with CISA; and
4. Identify applicable no-cost regional and national cyber resources (cyber assessments, exercises, and training) for your organization.

Additional Resources

- CISA Shields Up Webpage
- Alert (AA22-047A): Russian State-Sponsored Cyber Actors Target Cleared Defense Contractor Networks to Obtain Sensitive U.S. Defense Information and Technology (February 2022)
- CISA Insights: Implement Cybersecurity Measures Now to Protect Against Potential Critical Threats (January 2022)
- Alert (AA22-011A): Understanding and Mitigating Russian State-Sponsored Cyber Threats to U.S. Critical Infrastructure (January 2022)
- CISA Insights: Preparing for and Mitigating Potential Cyber Threats (December 2021)
- Reminder for Critical Infrastructure to Stay Vigilant Against Threats During Holidays and Weekends (November 2021)
- Russian Cyber Threat Overview and Advisories
- CISA Catalog of Free Cybersecurity Services
- CISA Cyber Resource Hub
- CISA's Free Cybersecurity Services and Tools Webpage

https://www.cisa.gov/free-cybersecurity-services-and-tools

CISA REGION 6

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Cybersecurity and Infrastructure Security Agency

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CELL: (210) 202-6646

CISA INCIDENT REPORTING SYSTEM

https://us-cert.cisa.gov/forms/report

CISA CENTRAL - 24/7 Watch

(888) 282-0870; report@cisa.gov

FBI’s 24/7 Cyber Watch (CyWatch)

(855) 292-3937; CyWatch@fbi.gov