CISA
CYBER+INFRASTRUCTURE

CYBER ESSENTIALS VOL.1

Your success depends on ***Cyber Readiness***. Both depend on ***YOU***.

THE LEADER'S GUIDE

Reducing your organization's cyber risks requires a holistic approach - similar to the approach you would take to address other operational risks. As with other risks, cyber risks can threaten:

- YOUR ABILITY TO OPERATE / ACCESS INFO
- YOUR REPUTATION / CUSTOMER TRUST
- YOUR BOTTOM LINE
- YOUR ORGANIZATION'S SURVIVAL

Managing cyber risks requires building a culture of cyber readiness.

Essential Elements of a *Culture of Cyber Readiness*:

Yourself *- The Leader*

Drive cybersecurity strategy, investment and culture

Your awareness of the basics drives cybersecurity to be a major part of your operational resilience strategy, and that strategy requires an investment of time and money.

Your investment drives actions and activities that build and sustain a culture of cybersecurity.

Your Staff *- The Users*

Develop security awareness and vigilance

Your staff will often be your first line of defense, one that must have - and continuously grow - the skills to practice and maintain readiness against cybersecurity risks.

Your Systems *- What Makes You Operational*

Protect critical assets and applications

Information is the life-blood of any business; it is often the most valuable of a business' intangible assets.

Know where this information resides, know what applications and networks store and process that information, and build security into and around these.

Your Surroundings *- The Digital Workplace*

Ensure only those who belong on your digital workplace have access

The authority and access you grant employees, managers, and customers into your digital environment needs limits, just as those set in the physical work environment do.

Setting approved access privileges requires knowing who operates on your systems and with what level of authorization and accountability.

Your Data *- What the Business is Built On*

Make backups and avoid the loss of information critical to operations

Even the best security measures can be circumvented with a patient, sophisticated adversary. Learn to protect your information where it is stored, processed, and transmitted.

Have a contingency plan, which generally starts with being able to recover systems, networks, and data from known, accurate backups.

Your Actions Under Stress

Limit damage and quicken restoration of normal operations

The strategy for responding to and recovering from compromise: plan, prepare for, and conduct drills for cyberattacks as you would a fire. Make your reaction to cyberattacks and system failures an extension of your other business contingency plans.

This requires having established procedures, trained staff, and knowing how - and to whom - to communicate during a crisis.

BOOTING UP
Things to Do First

Backup Data
Employ a backup solution that automatically and continuously backs up critical data and system configurations.

Multi-Factor Authentication
Require multi-factor authentication (MFA) for accessing your systems whenever possible. MFA should be required of all users, but start with privileged, administrative and remote access users.

Patch & Update Management
Enable automatic updates whenever possible. Replace unsupported operating systems, applications and hardware. Test and deploy patches quickly.

CYBER ESSENTIALS VOL.1

THE IT PROFESSIONAL'S GUIDE

✓ *Actions for leaders.*
✓ *Discuss with IT staff or service providers.*

Essential Actions for Building a ***Culture of Cyber Readiness:***

Yourself
Drive cybersecurity strategy, investment and culture

Organizations living the culture have:

- Lead investment in basic cybersecurity.
- Determined how much of their operations are dependent on IT.
- Built a network of trusted relationships with sector partners and government agencies for access to timely cyber threat information.
- Approached cyber as a business risk.
- Lead development of cybersecurity policies.

Your Staff
Develop security awareness and vigilance

Organizations living the culture have:

- Leveraged basic cybersecurity training to improve exposure to cybersecurity concepts, terminology and activities associated with implementing cybersecurity best practices.
- Developed a culture of awareness to encourage employees to make good choices online.
- Learned about risks like phishing and business email compromise.
- Identified available training resources through professional associations, academic institutions, private sector and government sources.
- Maintained awareness of current events related to cybersecurity, using lessons-learned and reported events to remain vigilant against the current threat environment and agile to cybersecurity trends.

Your Systems
Protect critical assets and applications

Organizations living the culture have:

- Learned what is on their network. Maintained inventories of hardware and software assets to know what is in-play and at-risk from attack.
- Leveraged automatic updates for all operating systems and third-party software.
- Implemented secure configurations for all hardware and software assets.
- Removed unsupported or unauthorized hardware and software from systems.
- Leveraged email and web browser security settings to protect against spoofed or modified emails and unsecured webpages.
- Created application integrity and whitelisting policies so that only approved software is allowed to load and operate on their systems.

Your Surroundings
Ensure only those who belong on your digital workplace have access

Organizations living the culture have:

- Learned who is on their network. Maintained inventories of network connections (user accounts, vendors, business partners, etc.).
- Leveraged multi-factor authentication for all users, starting with privileged, administrative and remote access users.
- Granted access and admin permissions based on need-to-know and least privilege.
- Leveraged unique passwords for all user accounts.
- Developed IT policies and procedures addressing changes in user status (transfers, termination, etc.).

Your Data
Make backups and avoid loss of info critical to operations

Organizations living the culture have:

- Learned what information resides on their network. Maintained inventories of critical or sensitive information.
- Established regular automated backups and redundancies of key systems.
- Learned how their data is protected.
- Leveraged malware protection capabilities.
- Leveraged protections for backups, including physical security, encryption and offline copies.
- Learned what is happening on their network. Managed network and perimeter components, host and device components, data-at-rest and in-transit, and user behavior activities.

Your Actions Under Stress
Limit damage and quicken restoration of normal operations

Organizations living the culture have:

- Lead development of an incident response and disaster recovery plan outlining roles and responsibilities. Test it often.
- Leveraged business impact assessments to prioritize resources and identify which systems must be recovered first.
- Learned who to call for help (outside partners, vendors, government / industry responders, technical advisors and law enforcement).
- Lead development of an internal reporting structure to detect, communicate and contain attacks.
- Leveraged in-house containment measures to limit the impact of cyber incidents when they occur.

***Consistent with the NIST Cybersecurity Framework and other standards, these actions are the starting point to Cyber Readiness. To learn more, visit* CISA.gov/Cyber-Essentials.**