

US Secret Service Cyber Protection

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Cyber Protection

How to prevent, detect and mitigate your exposure to cyber enabled financial fraud.

- Learn your organizations vulnerabilities and be prepared to persevere during an incident
- Understand the roles of entities that may be involved during an incident
 - Executive suite
 - Communications
 - Legal
 - Insurance
 - Information Technology
 - Incident Response Firm External counsel
 - Law Enforcement
- How to mitigate the situation through a collaborative approach (LEO, Bank, Private Sector)



What is Cybersecurity?

- The ability to protect or defend the use of cyberspace from cyber attacks.
 - (National Institute of Standards and Technology NIST)
- Cybersecurity is the art of protecting networks, devices, and data from unauthorized access or criminal use and the practice of ensuring confidentiality, integrity, and availability of information.
 - (US Government Cybersecurity and Infrastructure Security Agency CISA)
- Cyber Security is the application of technologies, processes, and controls to protect systems, networks, programs, devices and data from cyber-attacks. It aims to reduce the risk of cyber attacks and protect against the unauthorized exploitation of systems, networks and technologies.



Malware

 Malware, or "MALicious softWARE", is a catch-all term used to describe software that attempts to harm computers in different ways. Depending on what the malware does, different terms are used in relation to it. For example:

- Ransomware
- Bots & Botnets
- Viruses
- Worms

- Trojans
- Adware
- Spyware
- Scareware

- Rootkits
- Exploits
- Cryptominers
- Keyloggers



- Ransomware is a type of malware that prevents or limits users from accessing their system by encrypting the users' files until a ransom is paid.
- How does it get on your computers?
 - Remote Desktop Protocol (RDP)
 - Phishing Emails
 - Software Vulnerabilities
 - Malware, Viruses, USBs, etc.
 - Clicking on something you shouldn't, or plugging something into your computer you shouldn't.
 - Social Engineering



 No guarantee that you will be able to recover your files even after the ransom is paid.

- Law Enforcement <u>does not</u> support paying a ransom in response to a ransomware attack. It encourages perpetrators to target more victims and offers an incentive for others to get involved in this type of illegal activity.
 - Possible funding for additional illegal activities, terrorism, etc.



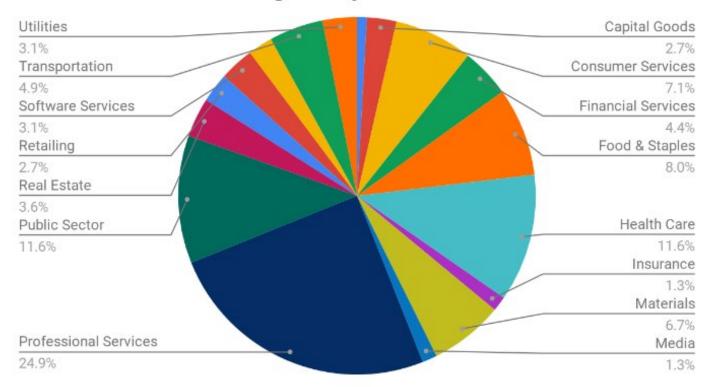
Ransomware Statistics

- The total ransomware costs are projected to exceed \$20 billion in 2021. (Cybercrime Magazine, 2019)
- In 2021, the largest ransomware payout was made by an insurance company at \$40 million, setting a world record. (Business Insider, 2021)
- The average ransom fee requested has increased from \$5,000 in 2018 to around \$200,000 in 2020. (National Security Institute, 2021)
- The average downtime a company experiences after a ransomware attack is 21 days. (Coveware, 2021)
- From a survey conducted with 1,263 companies, 80% of victims who submitted a ransom payment experienced another attack soon after, and 46% got access to their data but most of it was corrupted. (<u>Cybereason</u>, 2021)
- Additionally, 60% of survey respondents experienced revenue loss and 53% stated their brands were damaged as a result. (Cybereason, 2021)

Ransomware Statistics

- Malicious emails are up 600% due to COVID-19. (ABC News, 2021)
- Remote workers will be the main target of cybercriminals throughout 2021. (Security Magazine, 2020)
- 84% of organizations will keep remote work as the norm even after COVID-19 restrictions are lifted, resulting in an increase of internet users and a greater risk of data exposure. (<u>Bitglass</u>, 2020)
- Future hackers will target stay-at-home workers since personal devices are easier to hack than office hardware. (<u>Security</u> <u>Magazine</u>, 2020)

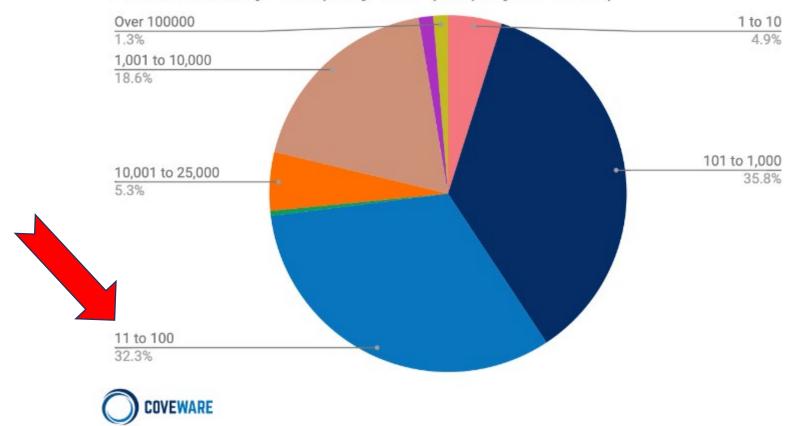
Common Industries Targeted by Ransomware Q1 2021







Distribution by Company Size (Employee Count)





Small Businesses are a Target of Ransomware!

- Ransomware attacks still disproportionately affect small businesses. These small companies rarely end up in the headlines and often don't have the financial or technical expertise to properly handle the incident OR perform the proper remediation required to prevent a repeat attack.
 - Most notable change in Q1 2001 was the Professional Services industry as the #1 target, specifically small and medium law firms.

https://www.coveware.com/blog/ransomware-attack-vectors-shift-as-new-software-vulnerability-exploits-abound



Some of the Many Ransomware Variants...

- Sodinokibi
- Conti
- Lockbit
- Clop
- Egreggor
- Avaddon
- Ryuk
- Darkside
- Suncrypt

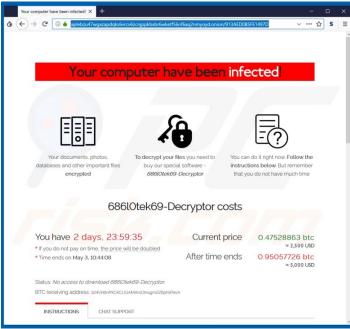
- Netwalker
- Phobos
- Mespinoza
- Hello Kitty
- THT v2
- LV
- Zeppelin
- Bad Rabbit
- Cryptolocker

- GoldenEye
- Jigsaw
- Locky
- Maze
- NotPetya
- Petya
- Wannacry

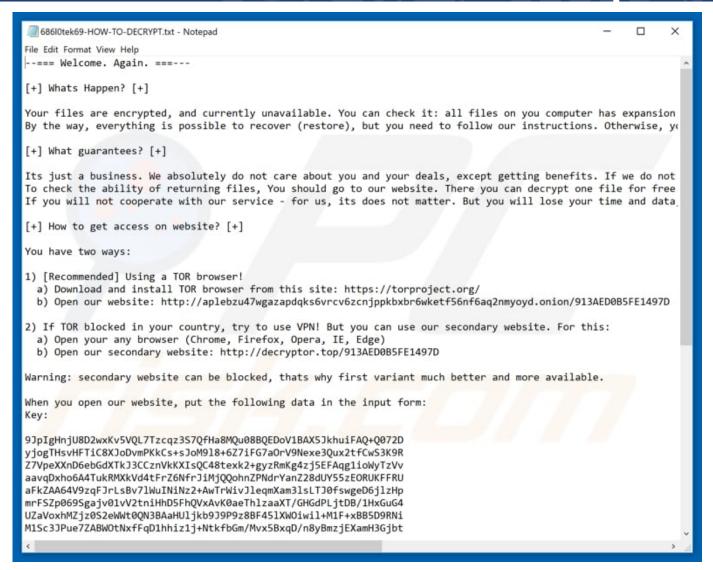


Ransomware Ransom Letter Examples



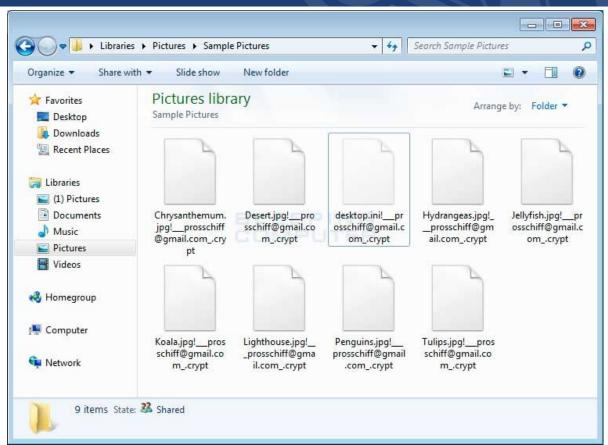


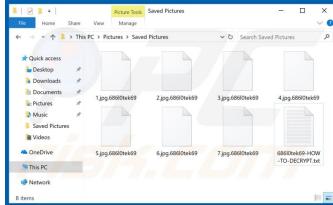
Ransomware Ransom Letter Examples





Files Encrypted by Ransomware...





Prevention

- <u>Back up your computer.</u> Perform frequent backups of your system and other important files, and verify your backups regularly. If your computer becomes infected with ransomware, you can restore your system to its previous state using your backups.
- Store your backups separately. Best practice is to store your backups on a separate device that cannot be accessed from a network, such as on an external hard drive. Once the backup is completed, make sure to disconnect the external hard drive, or separate device from the network or computer. AirGap
- <u>Train your organization</u>. Organizations should ensure that they provide cybersecurity awareness training to their personnel. Ideally, organizations will have regular, mandatory cybersecurity awareness training sessions to ensure their personnel are informed about current cybersecurity threats and threat actor techniques.

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

Prevention

- Update and patch your computer. Ensure your applications and operating systems (OSs)
 have been updated with the latest patches. Vulnerable applications and OSs are the
 target of most ransomware attacks.
- <u>Use caution with links and when entering website addresses</u>. Be careful when clicking directly on links in emails, even if the sender appears to be someone you know. Attempt to independently verify website addresses (e.g. search the internet for the sender organization's website or the topic mentioned in the email). Malicious website addresses often appear almost identical to legitimate sites, often using a slight variation in spelling or a different domain (e.g., .com instead of .net).
- <u>Open email attachments with caution</u>. Be wary of opening email attachments, even from senders you think you know, particularly when attachments are compressed files or ZIP files (or word/excel documents that ask you to Enable Macros).
- <u>Verify email senders</u>. If you are unsure whether or not an email is legitimate, try to verify the email's legitimacy by contacting the sender directly. Do not click on any links in the email. If possible, use a previous (legitimate) email to ensure the contact information you have for the sender is authentic before you contact them.

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



Prevention

- <u>Inform yourself</u>. Keep yourself informed about recent cybersecurity threats and up to date on ransomware techniques.
 - Anti-Phishing Working Group
 - https://apwg.org
 - Cybersecurity & Infrastructure Security Agency (CISA)
 - https://us-cert.cisa.gov/ncas/alerts
- Use and maintain preventative software programs. Install
 antivirus software, firewalls, and email filters—and keep
 them updated—to reduce malicious network traffic.

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



Incident response

Communicate

- Employees
- Report to Law Enforcement immediately (USSS, FBI, DHS-CISA, Local LEO)

Isolate

- Disconnect PCs from network stop using them.
- <u>Do not</u> turn off computer if possible (more evidence)— but when in doubt, shut it all down.

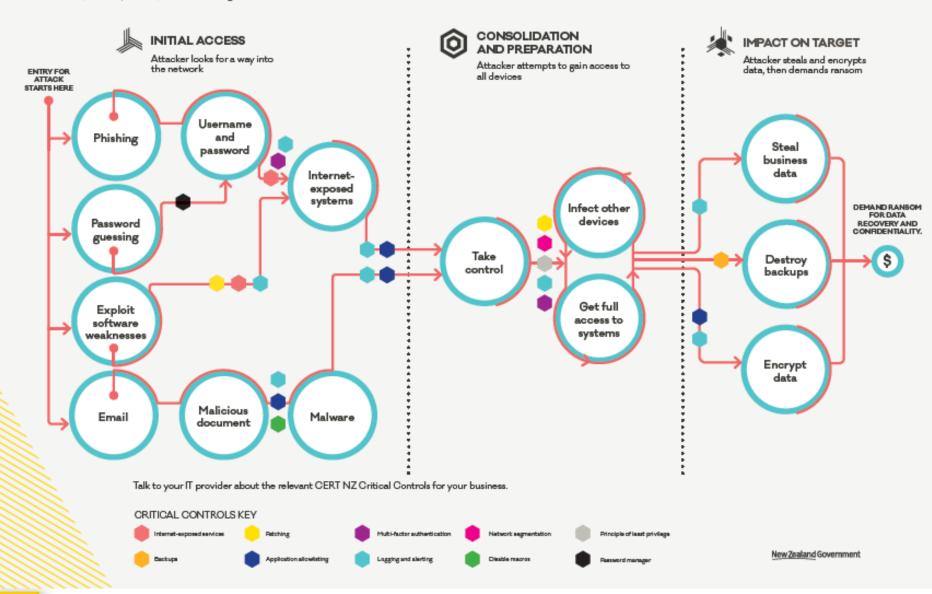
Document

- Pictures & Notes (dates, times, actions)
- Names and positions of people using computer systems
- People allowed to have access to various systems
- Company IT contacts layout of network, computer systems, logs, etc.

HOW RANSOMWARE WORKS



How you can protect your business against a ransomware attack.





Phishing

The fraudulent practice of sending emails purporting to be from reputable individuals or companies in order to induce individuals to reveal personal information, such as passwords and credit card numbers and/or to click on something malicious.

- Phishing Email
- Spear Phishing
- Link Manipulation
- Fake Websites
- CEO Fraud
- Content Injection

- Session Hijacking
- Malware
- Mobile SMS Phishing (Smishing)
- Voice Phishing (Vishing)
- Man-In-The-Middle
- Malvertising



Phishing



Dear Customer,

The following information for your Apple ID was updated on March 11, 2019.

This message is to inform you that your Apple ID has been locked for security reasons.

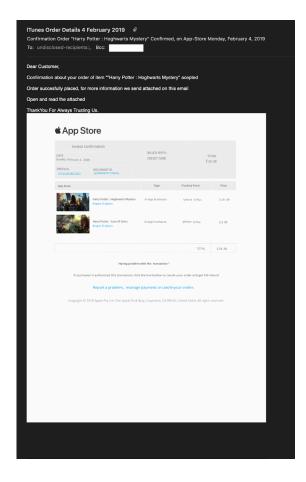
Someone has tried to sign in to your Apple account from a different IP address. Please verify your identity today or your account will be disabled due to concerns we have for the security and integrity of the Apple Community.

For your security, a trusted identity is removed from your account. You can verify your identity again one in the Security section of your Apple ID account page.

Sincerely,

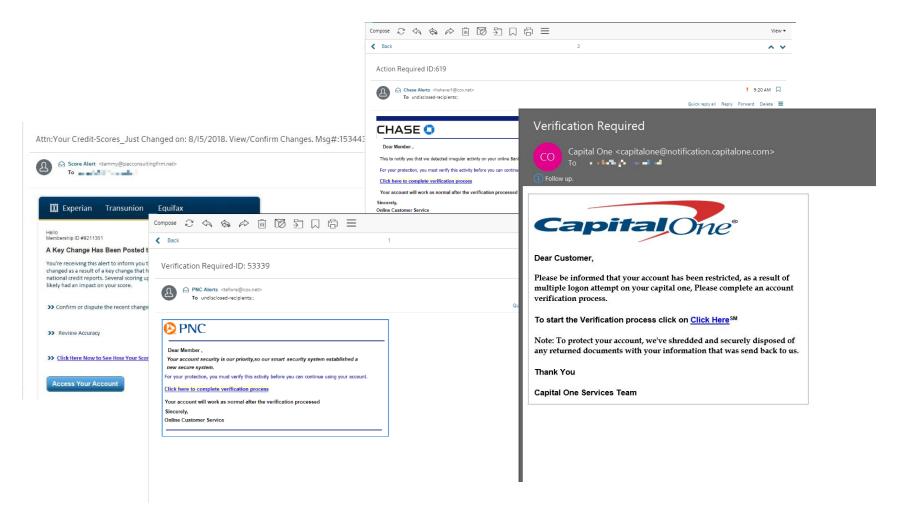
Apple Support

Apple ID | Support | Privacy Policy





Phishing





Phishing for Email Credentials

Example 4

From: Microsoft office365 Team [mailto:cyh11241@lausd.net]

Sent: Monday, September 25, 2017 1:39 PM

To:

Subject: Your Mailbox Will Shutdown Verify Your Account



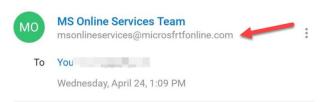
Detected spam messages from your <EMAIL APPEARED HERE> account will be blocked.

If you do not verify your mailbox, we will be force to block your account. If you want to continue using your email account please <u>verify</u>.

Verify Now

Microsoft Security Assistant

Microsoft office365 Team! ©2017 All Rights Reserved



Attention: A user account was created or modified. Retrieve your user's temporary password. | View this email in your browser.



Your account password has expired.

The following contains password security guidelines.

Please note:

- A strong password consists of at least three of the following: uppercase letters, lowercase letters, numbers, symbols.
- · For your protection and security, passwords are valid for 120 days.
- When distributing IDs and passwords, be sure to do so in a safe and secure manner.

To avoid service interruption, please change your password now.

Go to the sign-in page, https://portal.office.com and sign in with your User ID:

User Name:

Once you have successfully signed in, you can create a new password by following the instructions on the si We appreciate your prompt attention to this matter, and look forward to continuing to meet your business net

Thank you for choosing to host your IT solutions with Microsoft.

Sincerely,

The Microsoft Online Services Team

This is an important account related service notification. To set your contact preferences for other communications, Promotional Communications Manager.

This message was sent from an unmonitored e-mail address. Please do not reply to this message.

Microsoft Office

BEC – Business Email Compromise

DEFINITION OF BUSINESS E-MAIL COMPROMISE

- Business e-mail compromise (BEC) is when a scammer impersonates a company employee or other trusted party, and tries to trick an employee into sending money, usually by sending the victim email from fake or compromised email accounts (a "spear phishing" attack).
- BEC is also known as a "man-in-the-email" attack. This is derived from the "man-in-the-middle" attack where two parties think that they are talking to each other directly, but in reality, an attacker is listening in and possibly altering the communication.
- BECs don't use malware or malicious links that can be analyzed with standard cyber defenses. Instead, BEC attacks rely instead on impersonation and other <u>social</u> <u>engineering</u> techniques to trick people interacting on the attacker's behalf.

https://digitalguardian.com/

HOW BUSINESS E-MAIL COMPROMISE WORKS

- A BEC scam starts with research. An attacker will sift through publicly available
 information about your company from your website, press releases, and even social
 media posts. He/she might look for the names and official titles of company executives,
 your corporate hierarchy, and even travel plans from email auto-replies.
- The attacker will then try to gain access to an executive's e-mail account. To remain undetected, he/she might use inbox rules or change the reply-to address so that when the scam is executed, the executive will not be alerted.
- Attacker can also gain access to a company email account through phishing.
- The attacker can monitor emails in the company and wait until an opportune time to inject themselves and their scam into the conversation.

https://digitalguardian.com/

IC3 2020 Data (ic3.gov)

By Victim Loss

Crime Type	Loss	Crime Type	Loss
BEC/EAC	\$1,866,642,107	Overpayment	\$51,039,922
Confidence Fraud/Romance	\$600,249,821	Ransomware	**\$29,157,405
Investment	\$336,469,000	Health Care Related	\$29,042,515
Non-Payment/Non-Delivery	\$265,011,249	Civil Matter	\$24,915,958
Identity Theft	\$219,484,699	Misrepresentation	\$19,707,242
Spoofing	\$216,513,728	Malware/Scareware/Virus	\$6,904,054
Real Estate/Rental	\$213,196,082	Harassment/Threats Violence	\$6,547,449
Personal Data Breach	\$194,473,055	IPR/Copyright/Counterfeit	\$5,910,617
Tech Support	\$146,477,709	Charity	\$4,428,766
Credit Card Fraud	\$129,820,792	Gambling	\$3,961,508
Corporate Data Breach	\$128,916,648	Re-shipping	\$3,095,265
Government Impersonation	\$109,938,030	Crimes Against Children	\$660,044
Other	\$101,523,082	Denial of Service/TDos	\$512,127
Advanced Fee	\$83,215,405	Hacktivist	\$50
Extortion	\$70,935,939	Terrorism	\$0
Employment	\$62,314,015		
Lottery/Sweepstakes/Inheritance	\$61,111,319		
Phishing/Vishing/Smishing/Pharming	\$54,241,075		



EXAMPLES OF BUSINESS E-MAIL COMPROMISE

- <u>Fraudulent Invoice Scam</u> is when a cybercriminal uses an employee's e-mail to send notifications to customers and suppliers asking for payment to the cybercriminal's account.
- <u>Fake Boss Scam</u> is when a fraudulent email is sent from a business executive's account to employees instructing them to urgently transfer money from the corporate account to the criminal's account.
- <u>Fake Attorney Scam</u> is when a lawyer's e-mail address is used to contact clients, asking that they pay money immediately to keep things confidential.
- <u>Data Theft Scams</u> typically target HR employees in an attempt to obtain personal or sensitive information about individuals within the company such as CEOs and executives. This data can then be leveraged for future attacks such as CEO Fraud.

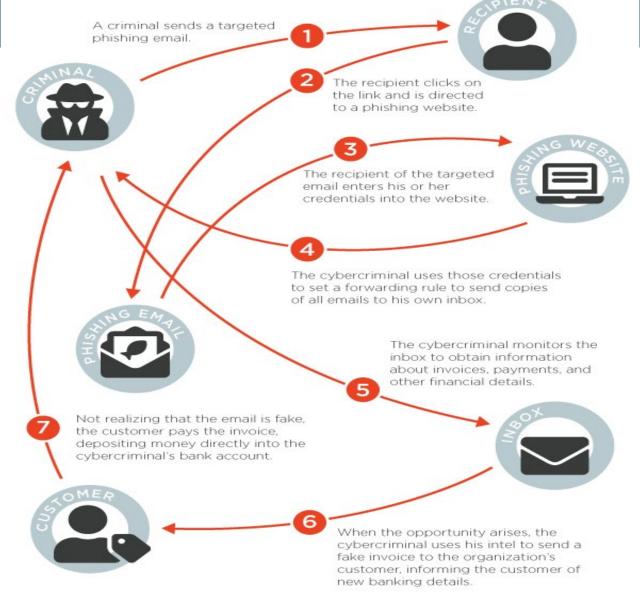
WARNINGS SIGNS

- You receive an email from a higher-up ordering you to quickly process an invoice, change the recipient of a payment or provide sensitive documents.
- The message is brief, urgent and presses you to bypass normal policies and procedures.
- The email uses strange phrases and/or poor English may stand out from prior emails from the whom you thought was the same person.
- The email comes from a Gmail, Hotmail or other personal account rather than an organizational account.
- Someone you've become close to online asks you to open a bank account for the purpose
 of receiving or sending them money.

 Another trick is to create an e-mail with a spoofed domain. For example, instead of <u>john.smith@company.com</u>. the attacker might use:

```
john.smith@c0mpany.com
john.smith@cornpany.com
john.smith@gmail.com
john.smithe@company.com
```

 If you do not pay close attention, it is easy to get fooled by these slight differences!





https://www.agari.com/email-security-blog/silent-starling-vendor-email-compromise/

DON'TS

- **Don't** act on a request to send money or sensitive employee information without confirming that it's authentic.
- **Don't** reply to a suspicious email. Speak directly to the person the sender claims to be, or forward it to a known email address for that person.
- <u>Don't</u> call a phone number listed in the suspicious email. Contact the actual person on a number you know to be legitimate.
- **Don't** click on links or open attachments in a suspicious business email. It could unleash malware.
- **Don't** open a new bank account at the behest of someone you've forged a relationship with online or as part of a supposed work-at-home opportunity.

https://www.aarp.org/money/scams-fraud/info-2019/business-email-compromise.html



DO'S

- **<u>Do</u>** check with an executive by phone or in person to verify a request to send money or provide personnel records.
- <u>Do</u> verbally confirm emailed instructions from a vendor or supplier to change payment methods or bank information. Call them on a known contact number.
- **<u>Do</u>** carefully check the sender's email address. Scammers may slightly vary a genuine address, adding a letter or changing punctuation, to make it seem legit on first glance.
- **<u>Do</u>** train staff on the BEC threat and how to spot spoofed and spear-phishing emails.
- <u>Do</u> verify a request from someone involved in a property transaction to change a
 payment type (for example, from check to wire transfer) or bank data. Do so in person or
 by phone, not by email.

https://www.aarp.org/money/scams-fraud/info-2019/business-email-compromise.html



DO'S (continued)

- <u>Do immediately</u> contact your financial institution if you discover a fraudulent transfer. It
 may be able to recall the funds.
- <u>Do</u> save all emails and other evidence of a BEC attack to provide to authorities.
- **Do** immediately change passwords on compromised accounts.
- **Do** alert other businesses/clients that may be included in scam.
- <u>Do</u> contact law enforcement **immediately**. The ability to stop transactions/recall funds is time sensitive!

https://www.aarp.org/money/scams-fraud/info-2019/business-email-compromise.html

BEST PRACTICES FOR PROTECTING AGAINST BUSINESS EMAIL COMPROMISE

- Business e-mail compromise attacks are successful for three main reasons:
 - Insufficient security protocols
 - Social engineering
 - Lack of employee awareness
- Multi-factor authentication should be implemented as an IT security policy. This will help prevent unauthorized access of emails, especially if an attacker attempts to login from a new location.

New England Cyber Fraud Task Force - NECFTF

The NECFTF's mission is to prevent, detect, and mitigate complex cyber-enabled financial crimes against payment systems and critical infrastructure as well as develop Digital Forensic capabilities at the local level. The regional based task force allows us to share expertise and resources related to digital forensic training and cyber investigations received at our National Computer Forensic Institute - NCFI, www.ncfi.usss.gov, in Hoover, AL.

RESOURCES

Secret Service Cyber slick sheet

https://www.secretservice.gov/investigation/Preparing-for-a-Cyber-Incident

DHS-CISA, CSA Rick Rossi NH, Ron Ford MA

Alerts https://us-cert.cisa.gov/ncas/alerts

Home Page https://us-cert.cisa.gov/

Stop Ransomware https://www.cisa.gov/stopransomware

Third Party IR Firms
Security blogs (Twitter, Youtube)
DOJ Press Release
Google alerts for incidents



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