Cybersecurity Threats, Trends, and Strategies

ICCCFO Conference – Spring 2018

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Cyber Risk Trends and Threats

Cyber Risk Trends

- Hackers love what small businesses have to offer!!!
  - Companies with 1 – 500 employees are largest targeted segment for cyber attacks*
  - Many are less equipped to protect against an attack
- Phishing and spam have continued to trend upward, most opportunistic attacks
- Digital extortion

*Symantec 2017 Internet Security Threat Report

Passwords

- 81% of hacking-related incidents leveraged the use of stolen and/or weak passwords (63% previous year)
  - Tricking victims to disclose password
  - Default credentials
  - Common passwords
  - Data breaches (Yahoo, LinkedIn)

Verizon 2017 Data Breach Investigations Report

Internet of Things (IoT)

- All things physical connected to the Internet
- New platforms create new cyber attack opportunities
  - Smart home devices (e.g., security systems, thermostats, lighting)
  - Embedded devices (e.g., DVRs, smart TVs, webcams, wireless access points, digital assistance, smartphones, printers, routers)
  - Automobiles, robotics, cloud pets, vacuum cleaners, pacemakers
  - ATMs, electronic signs

Cyber Threats – Email Scams

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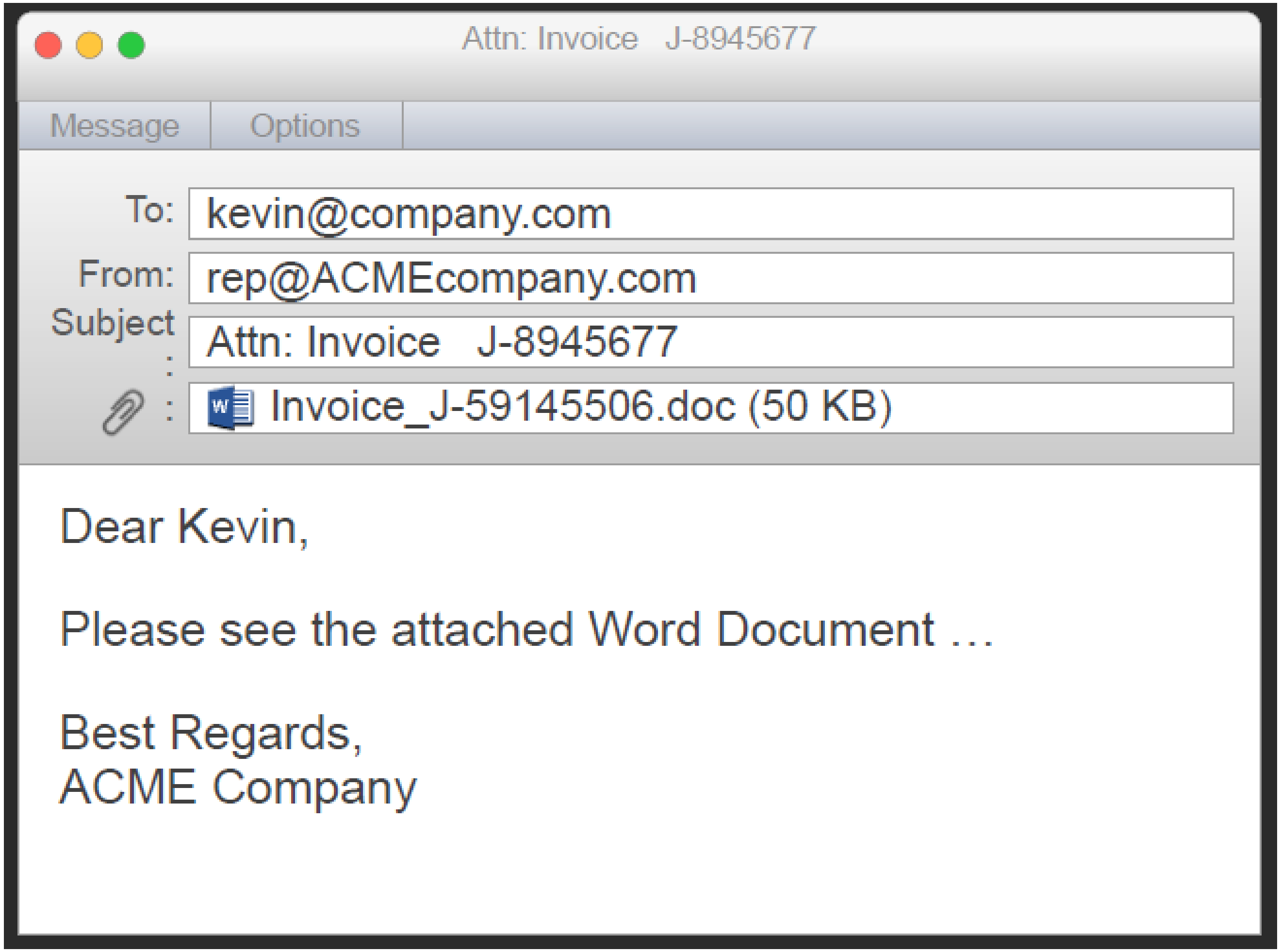
Cyber Threats – Email Malware Scams

- Sender is spoofed to be a known entity (i.e., Google, Microsoft, FedEx, IRS, FBI, Help Desk, CFO, Netflix)
- “Most of us are not suspicious of Word, Excel, or Adobe files
- Attachment executes script (i.e., PowerShell, JavaScript, Macros) to download malware (i.e., keylogger, ransomware)

Cyber Threat Trends – Macro Malware



To: kevin@company.com

From: rep@ACMEcompany.com

Subject: Attn: Invoice   J-8945677

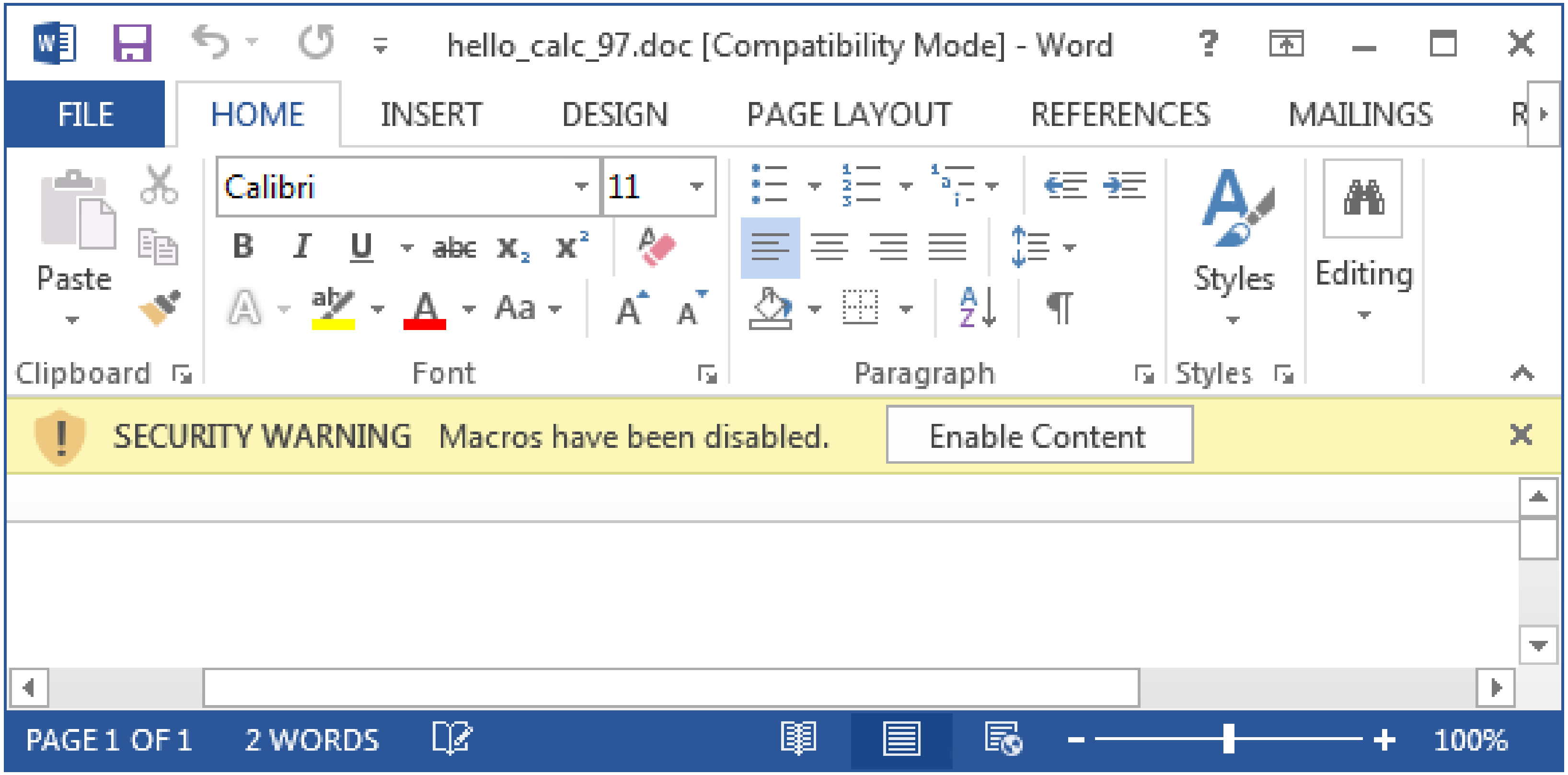
: Invoice_J-59145506.doc (50 KB)

Dear Kevin,

Please see the attached Word Document …

Best Regards,
ACME Company

Cyber Threat Trends – Macro Malware

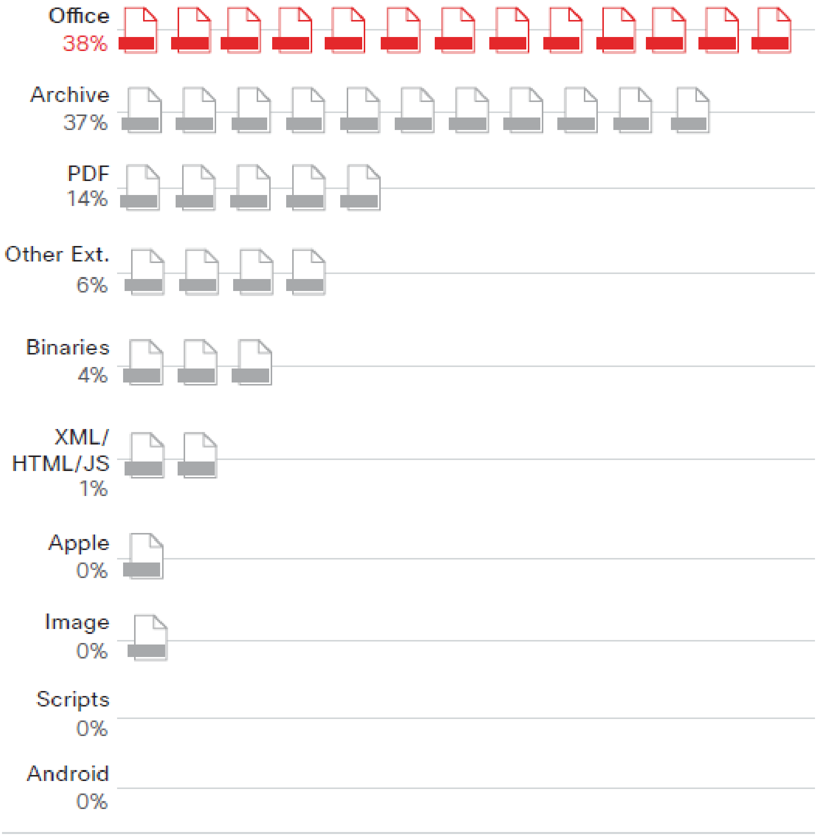


hello_calc_97.doc [Compatibility Mode] - Word

SECURITY WARNING Macros have been disabled.

Cyber Threats – Email Malware Scams

Top 10 malicious file extensions,
January – September 2017



Source: Cisco Security Research

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Cyber Risk Trends – Business Email Compromise (BEC) Scams

- Attacker targets executive manager or business owner
- Attacker gains access to victim’s email account or uses a “look-alike” domain to send a message tricking an employee into performing a wire transfer
- Difficult to detect because email does not contain a malicious attachment or URL

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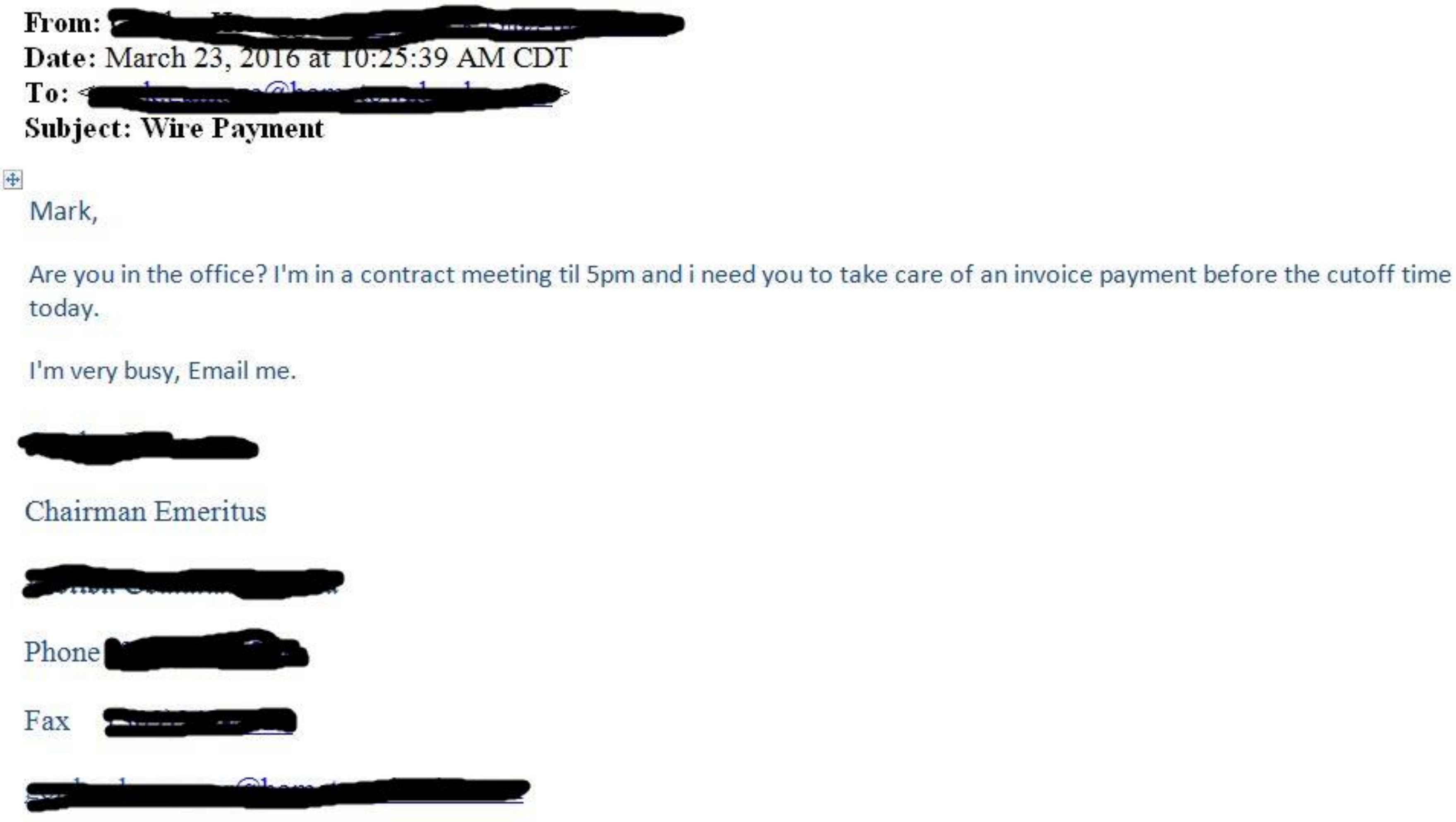
Business Email Compromise



From: [redacted]
Date: March 23, 2016 at 10:25:39 AM CDT
To: [redacted]
Subject: Wire Payment

Mark,

Are you in the office? I'm in a contract meeting til 5pm and i need you to take care of an invoice payment before the cutoff time today.

I'm very busy, Email me.

[redacted]

Chairman Emeritus

[redacted]

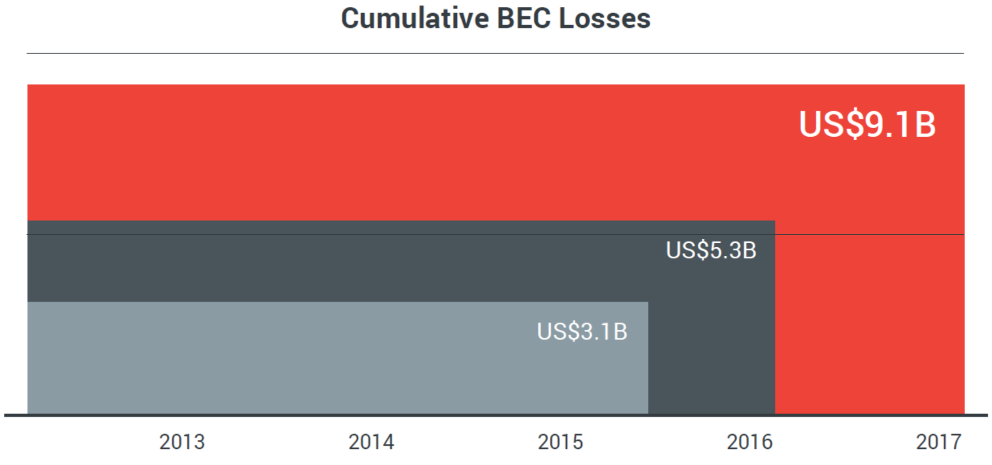
Phone [redacted]

Fax [redacted]

[redacted]

Cyber Risk Trends – Business Email Compromise (BEC) Scams

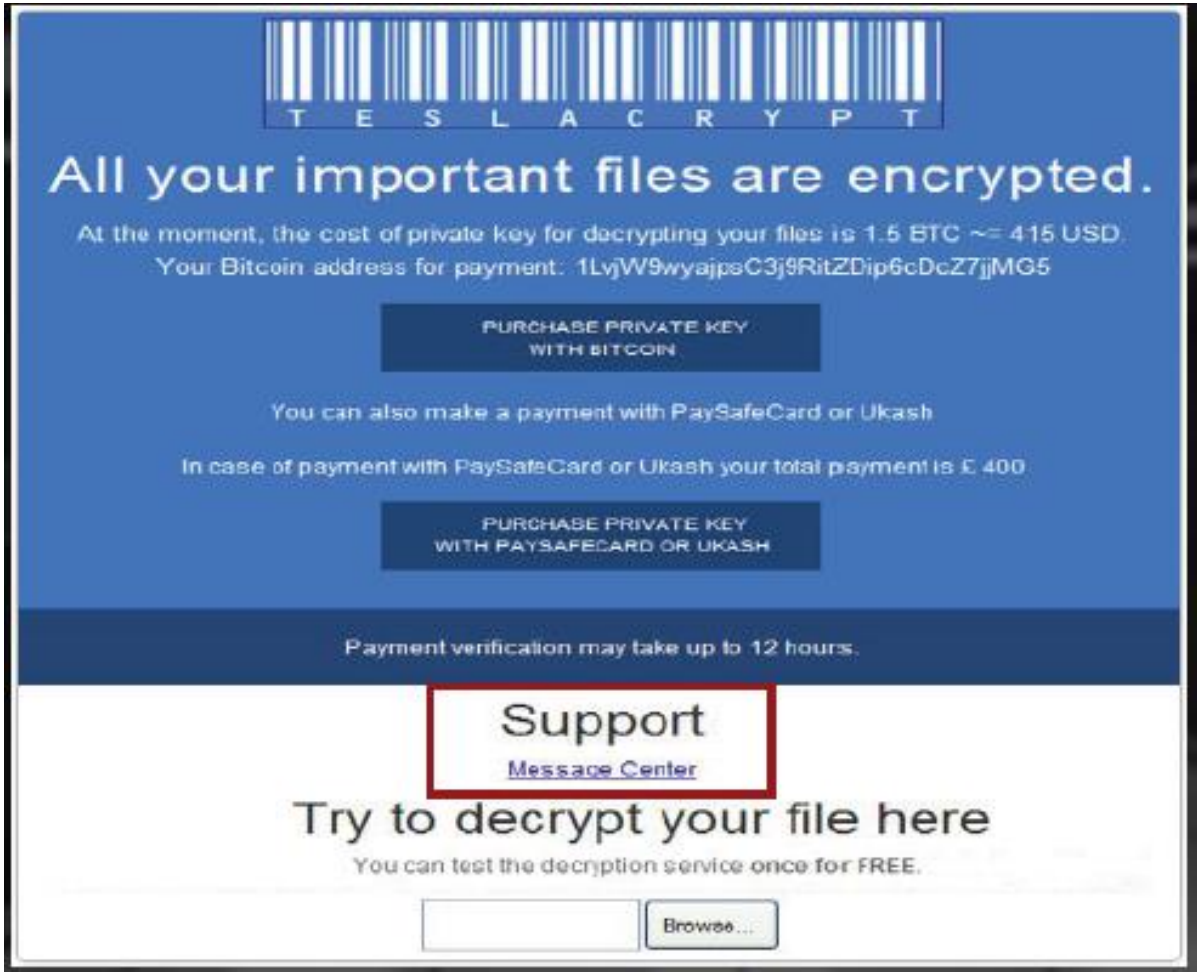
- Average payout for a successful BEC attack is $140K US
- The FBI urges businesses to adopt two-step or two-factor authentication for email



SOURCES:
https://www.ic3.gov/media/2016/160614.aspx
https://www.ic3.gov/media/2017/170504.aspx

Trend Micro Security Predictions for 2018

Ransomware



T E S L A C R Y P T

All your important files are encrypted.

At the moment, the cost of private key for decrypting your files is 1.5 BTC ~= 415 USD.
Your Bitcoin address for payment: 1LvjW9wyajpsC3j9RitZDip6cDcZ7jjMG5

You can also make a payment with PaySafeCard or Ukash

In case of payment with PaySafeCard or Ukash your total payment is £ 400

Payment verification may take up to 12 hours.

Support

Message Center

Try to decrypt your file here

You can test the decryption service once for FREE.

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Case Study – Targeted Phishing Attack

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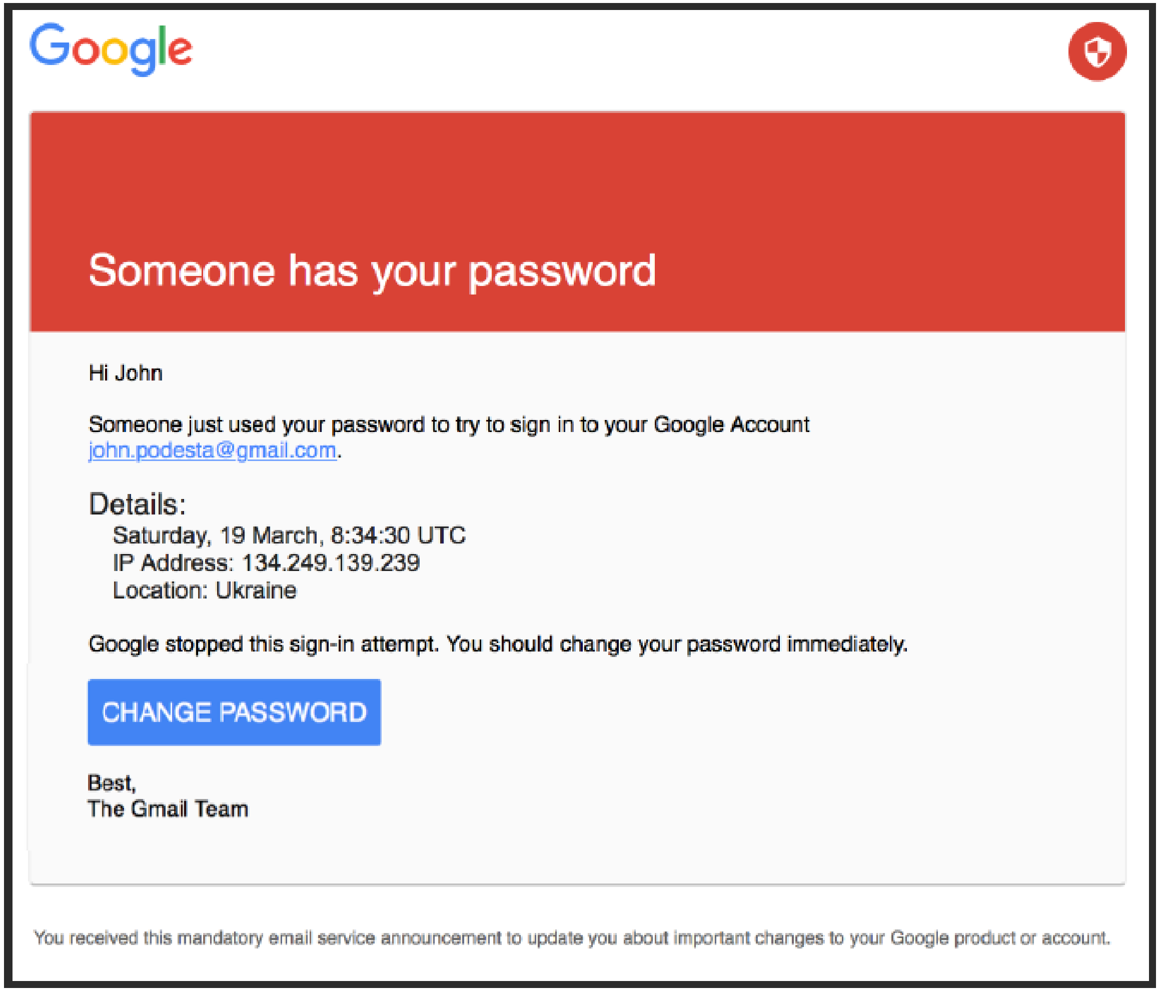


Google

Someone has your password

Hi John

Someone just used your password to try to sign in to your Google Account john.podesta@gmail.com.

Details:

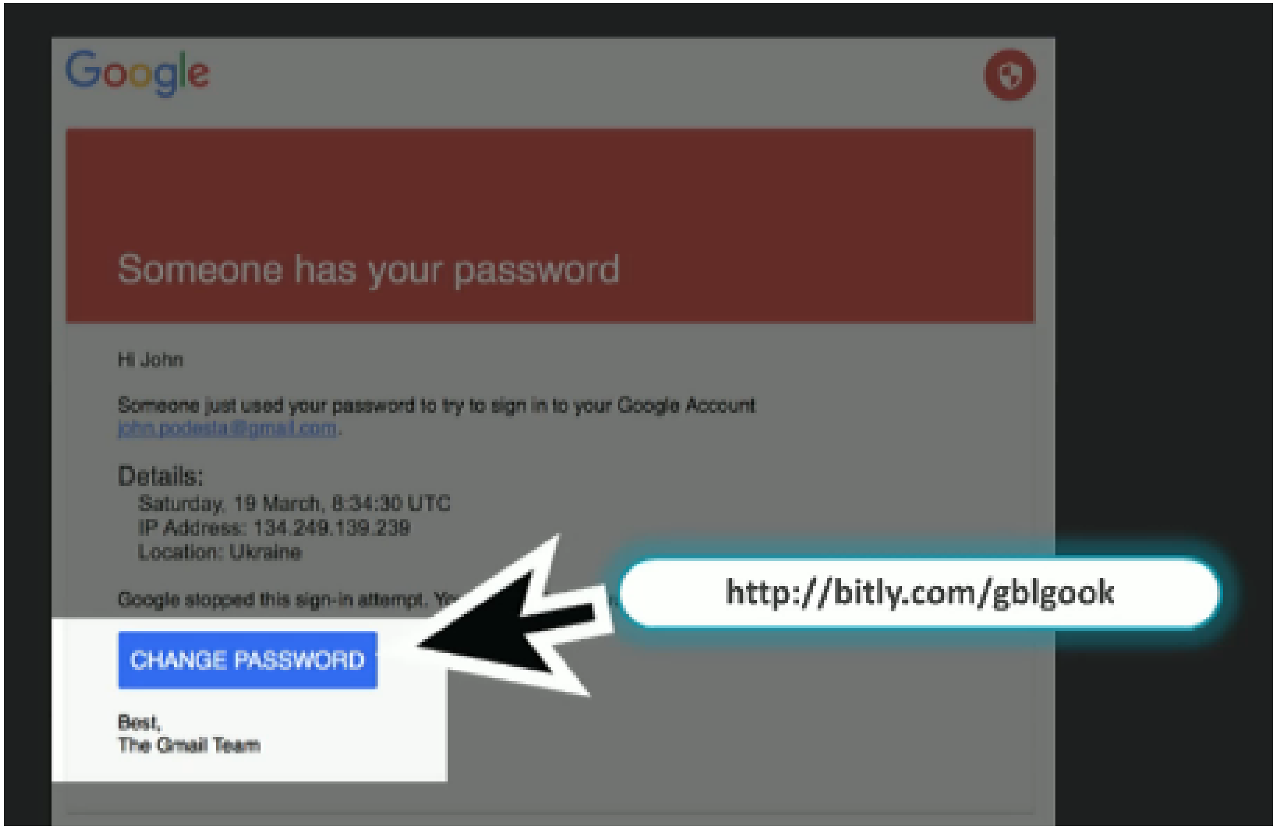
Saturday, 19 March, 8:34:30 UTC
IP Address: 134.249.139.239
Location: Ukraine

Google stopped this sign-in attempt. You should change your password immediately.

Best,
The Gmail Team

You received this mandatory email service announcement to update you about important changes to your Google product or account.

Case Study – Targeted Phishing Attack



Google

Someone has your password

Hi John

Someone just used your password to try to sign in to your Google Account john.podesta@gmail.com.

Details:
Saturday, 19 March, 8:34:30 UTC
IP Address: 134.249.139.239
Location: Ukraine

Google stopped this sign-in attempt. Yo

CHANGE PASSWORD

Best,
The Gmail Team

http://bitly.com/gblgook

Shortened URL

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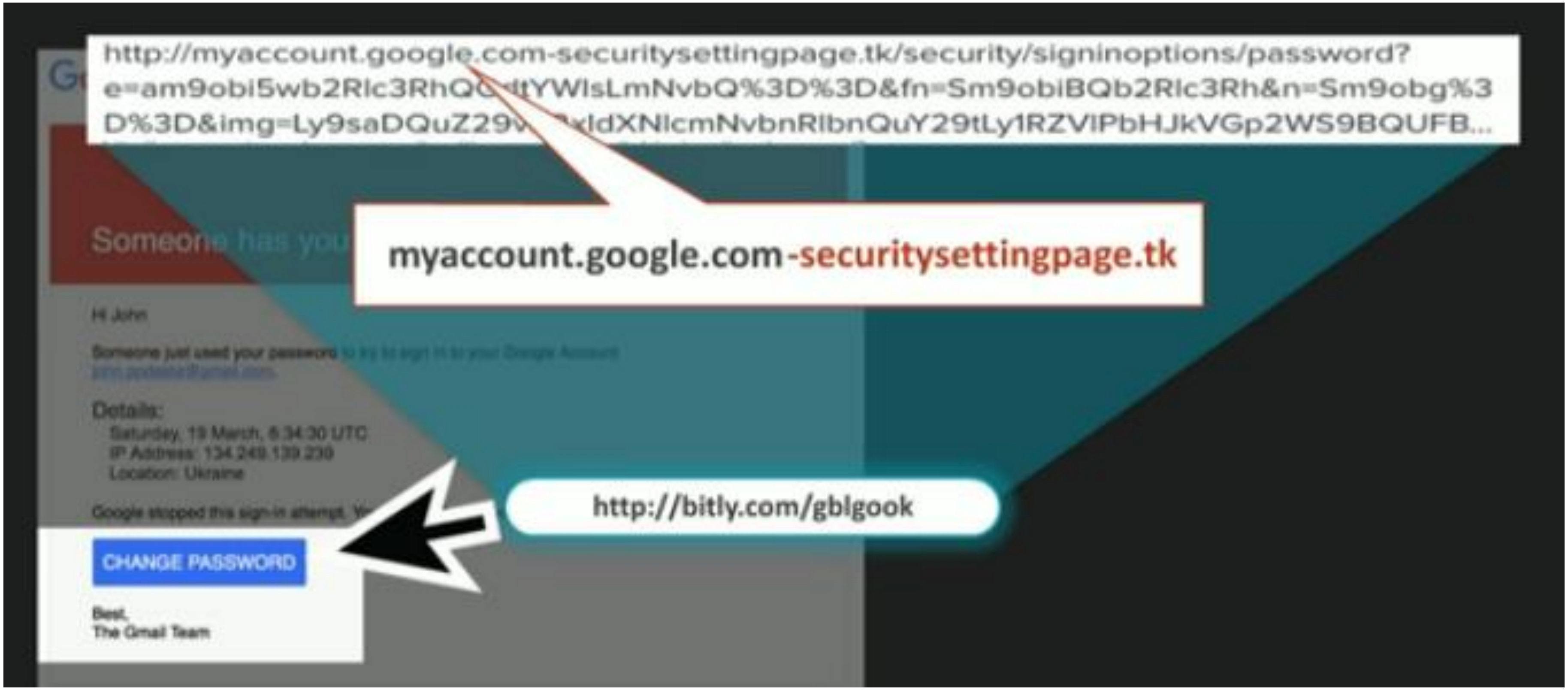
Case Study – Targeted Phishing Attack



http://myaccount.google.com-securitysettingpage.tk/security/signinoptions/password?e=am9obi5wb2Rlc3RhQ[illegible]dtYWlsLmNvbQ%3D%3D&fn=Sm9obiBQb2Rlc3Rh&n=Sm9obg%3D%3D&img=Ly9saDQuZ29v[illegible]xldXNlcmNvbnRlbnQuY29tLy1RZVlPbHJkVGp2WS9BQUFB...

myaccount.google.com-securitysettingpage.tk

Someone has you

Hi John

Someone just used your password to try to sign in to your Google Account [illegible].

Details:
Saturday, 19 March, 8:34:30 UTC
IP Address: 134.249.139.239
Location: Ukraine

Google stopped this sign-in attempt. Yo

Best,
The Gmail Team

http://bitly.com/gblgook

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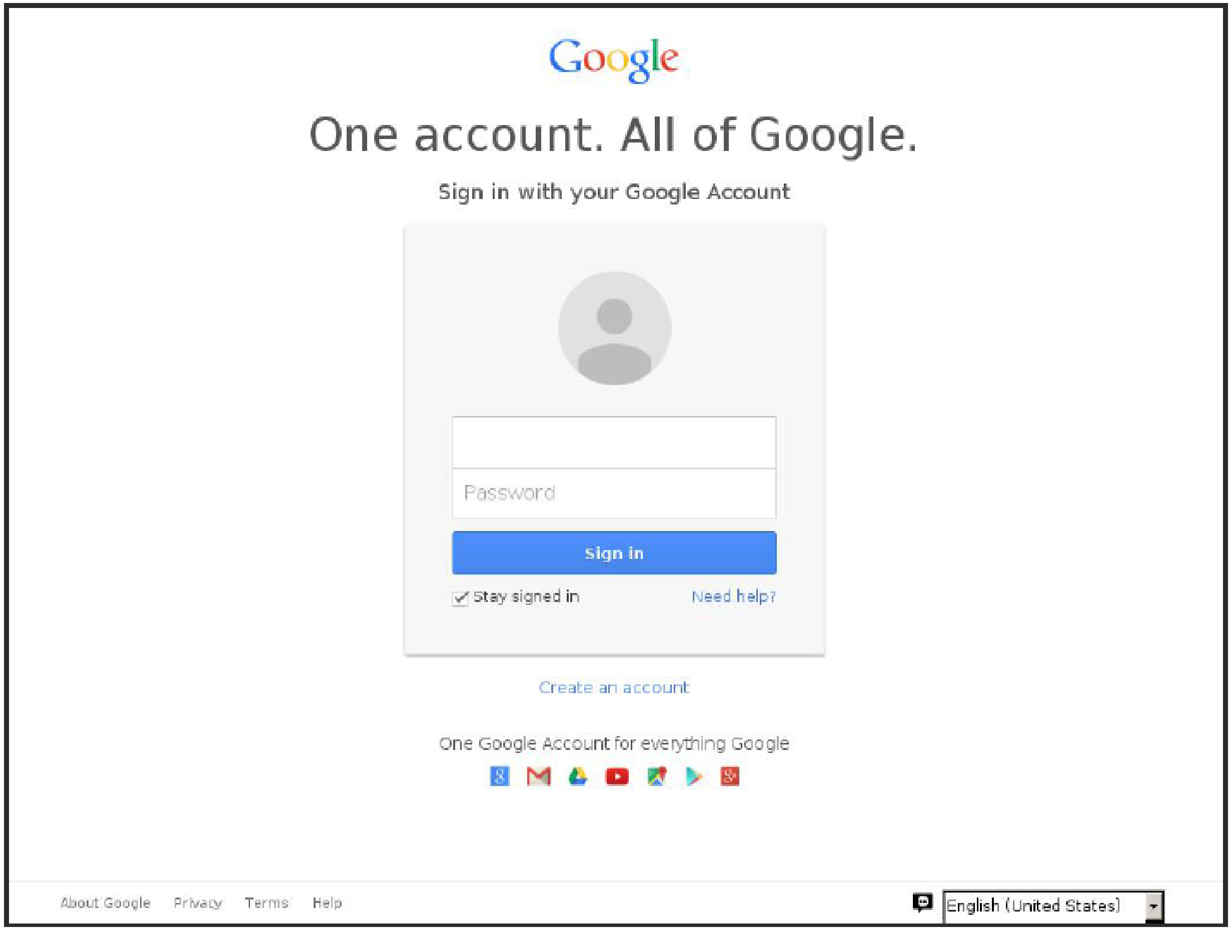
Case Study – Targeted Phishing Attack



Google

One account. All of Google.

Sign in with your Google Account

Password

Sign in

☑ Stay signed in

Need help?

Create an account

One Google Account for everything Google

About Google Privacy Terms Help

English (United States)

Fake Google Website

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Strategies for Establishing a Cybersecurity Program

Cybersecurity Controls – Layered Defense

- Employ a data backup and recovery plan for all critical information
- Vulnerability management program − patch promptly
  - Operating systems (Microsoft, Linux, MacOS)
  - Applications and web plug-ins
  - Firmware and embedded devices (IoT)
- Use strong authentication (e.g., complex passwords, two-factor, multi-factor, biometrics)

Cybersecurity Controls – Layered Defense

- Encrypt your sensitive data
- Endpoint protection (i.e., malware protection)
    - Firewall
    - Remote access
- Log and monitor security events
- Don’t forget physical security
- Make people your first line of defense – training

Threat Intelligence and Collaboration

- Wipfli Website and Cybersecurity Newsletters
  - www.wipfli.com/cybersecurity
- Regulatory bulletins and alerts (US-CERT)
- Data breach intelligence reports (Verizon, Symantec)
- FBI (www.fbi.gov)
- NIST (www.nist.gov)
- Industry peer groups, conferences, webinars

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External Dependency Management

- Must have a strategy to identify, monitor, and mitigate the risks of third-party relationships (based on complexity of the relationship)
- Due diligence for vendor selection
- Ongoing vendor monitoring program
  - It is important to ensure vendors have adequate controls for protecting customer information
  - It is important to understand what a breach at a vendor's operation means to your institution – vendor responsibilities

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Cyber Incident Management and Resilience

- Have enhanced incident response plans – tabletop testing
  - Have arrangements with vendors who can work with your institution to implement incident response—a proactive approach, not when an incident has occurred
  - Work with regional crime taskforces
  - Ensure plan includes how you will notify customers
- Ensure there is periodic tabletop testing of your incident response program
- Ensure employees know how and when to escalate an event—ongoing employee awareness program

Cybersecurity Testing/Training

- IT Risk Assessment
- Perimeter Vulnerability Assessment/Penetration Testing
- Internal Vulnerability Assessment
- Social Engineering Testing
  - Email spoofing
  - Pretext calling
  - Physical penetration

Questions

Contact Information

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Certified Ethical Hacker (CEH)

Certified Information Systems Auditor (CISA)

Certified Information Systems Security Professional (CISSP)

Microsoft Certified Systems Engineer (MCSE)

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