Corporate Customer Training

Cybersecurity & Account Takeover

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CAPINTECH

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Colonial Pipeline Company — May 2021

- Result of a single compromised VPN password that granted access on April 29, 2021
  - Account was enabled but not active
- Password since discovered inside a batch of leaked passwords on the dark web
  - Colonial employee may have used the same password on another account that was previously hacked

Microsoft Power Apps — August 2021

- Approximately 38 million records across 47+ organizations
- Various types of records exposed
  - Employee records; COVID testing, tracing, and vaccinations; names, dates of birth, Social Security numbers, addresses, and demographic details
- Misconfiguration was by third party, not Microsoft directly

Neiman Marcus — September 2021

- Result of a May 2020 data breach
- Approximately 3.1 million online customer accounts compromised, exposing personal data
  - Payment card data, including expiration dates and other personal information
  - Usernames, passwords, security questions, and answers for online accounts

Robinhood — November 2021

- A social engineering attack used to gain access to internal systems
- Accessed a list that contained email addresses of 5 million users, full names of 2 million users, and personal information of approximately 310 users
- Approximately 10 customers may have had a large amount of information compromised

Apache Log4j — December 2021

- What is Log4j?
- Many don't know how they were affected
- Extensive efforts to pinpoint vulnerable devices
- Thousands of attempts to exploit the vulnerability

Apache Log4j — December 2021

- Organizations "have a duty" to take "reasonable steps" to mitigate known software vulnerabilities
- FTC threatening action against those failing to mitigate
- Incident response component
  - You patched and resolved the issue.
  - But were you already affected?

Crypto.com — January 2022

- Took advantage of a vulnerability and hacked the exchange
- Over $34 million in cryptocurrency stolen from the wallets of 483 users
- Multi-factor authentication controls were bypassed
- All withdrawals were halted for approximately 14 hours while investigation took place

Phishing

- Malware installation
- Credential capturing
- Compromise of information
- Unauthorized changes or tasks

Phishing Failure

- 11% failure rate
  - Attachments – 20%
  - Data entry/credential – 4%
  - Link – 12%

Examples


[redacted]<box@itservermailbox.net>
Tue 12/18/2018 9:11 AM
[redacted]

EXTERNAL

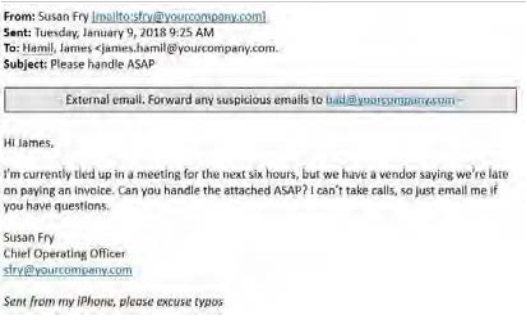
Morning [redacted]

I would like to update my direct deposit details as i have just switched banks, would the change be effective for the next pay date?

Thanks

[redacted]

Examples


From: Susan Fry [mailto:sfry@yourcompany.com]
Sent: Tuesday, January 9, 2018 9:25 AM
To: Hamil, James <james.hamil@yourcompany.com.
Subject: Please handle ASAP

External email. Forward any suspicious emails to bad@yourcompany.com

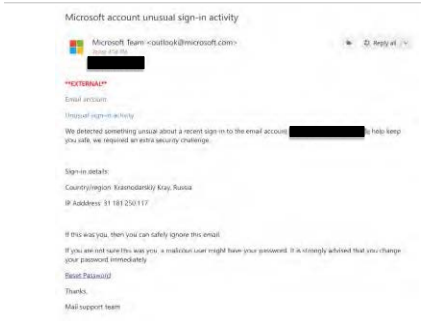
Hi James,

I'm currently tied up in a meeting for the next six hours, but we have a vendor saying we're late on paying an invoice. Can you handle the attached ASAP? I can't take calls, so just email me if you have questions.

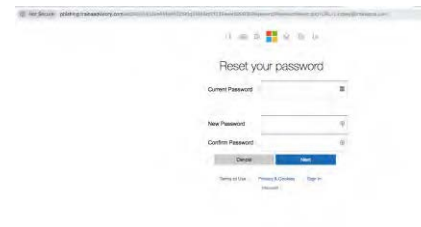
Susan Fry
Chief Operating Officer
sfry@yourcompany.com

Sent from my iPhone, please excuse typos

Examples



Examples



Examples

Phishing – How to Detect

- Inspect for typos
- Check email address and domain name
- Click correctly
  - Hover over link
  - Right click and copy
  - Visit website manually

Phishing – How to Detect

- It doesn't feel right
- Tone is off
- Urgent/threatening
- Unfamiliar or unexpected

Account Takeover

- Criminals gain access to customer finances or data
  - Unauthorized transactions or funds transfer
  - Creation of new/fake online banking users
  - Stolen customer information
- Criminals gain access to bank information

Account Takeover

- How is this accomplished?
  - Lack of security
  - Phishing/malware
  - Credential stuffing
  - Email compromise

Account Takeover

- Lack of security
  - Logged into Internet banking
  - Password management tool auto-populates passwords
  - Sends code to text or email on device

Account Takeover

- Phishing and malware
  - Exploited devices allow access
  - Sensitive information obtained
- Credential stuffing

Account Takeover

- Email compromise
  - Emails appear legitimate
  - Requests seem normal
  - Utilize spoofed/fake email accounts or malware

Protection and Prevention

- Banking controls
  - Multi-factor authentication
  - New user alerts
  - Device authentication and restrictions
  - Enhanced controls for high-risk transactions
  - User training

Protection and Prevention

- Company controls
  - Employee education
  - Proper security
  - Monitor for suspicious activity
  - Understand responsibilities

Security Concerns

- Third-party vendors
  - New relationships
  - Existing vendors
- Organization responsibilities
- End-user assistance

New Third-Party Vendor Relationships

- General inquiry
- Workforce
- Information security
  - Cloud storage
- Policy documentation

New Third-Party Vendor Relationships

- Review System and Organization Controls (SOC) reports
- Review any contracts
- Research what others have implemented
  - Hardening controls
  - Proper implementation procedures
  - Possible mistakes

Existing Vendor Relationships

- Periodic oversight procedures
  - Review of audit reports
  - Backup or disaster recovery testing
  - Financial condition
  - Existing contracts
  - Vendor oversight

Organizational Responsibilities

- Ongoing monitoring of critical vendor services
  - Patch management reporting
  - Malware management reporting
  - Backup process

User Provisioning and Access

- Minimum rights for users
- Review regularly
  - Job transfers
  - No longer needed

Password Security

- Numbers, characters, symbols
- Avoid common words
- Change often and when compromised
- Length – 8…12…??

TIME IT TAKES A HACKER TO BRUTE FORCE YOUR PASSWORD IN 2022

Number of Characters	Numbers Only	Lowercase Letters	Upper and Lowercase Letters	Numbers, Upper and Lowercase Letters	Numbers, Upper and Lowercase Letters, Symbols
4	Instantly	Instantly	Instantly	Instantly	Instantly
5	Instantly	Instantly	Instantly	Instantly	Instantly
6	Instantly	Instantly	Instantly	Instantly	Instantly
7	Instantly	Instantly	2 secs	7 secs	31 secs
8	Instantly	Instantly	2 mins	7 mins	39 mins
9	Instantly	10 secs	1 hour	7 hours	2 days
10	Instantly	4 mins	3 days	3 weeks	5 months
11	Instantly	2 hours	5 months	3 years	34 years
12	2 secs	2 days	24 years	200 years	3k years
13	19 secs	2 months	1k years	12k years	202k years
14	3 mins	4 years	64k years	750k years	16m years
15	32 mins	100 years	3m years	46m years	1bn years
16	5 hours	3k years	173m years	3bn years	92bn years
17	2 days	69k years	9bn years	179bn years	7tn years
18	3 weeks	2m years	467bn years	11tn years	438tn years

HIVE SYSTEMS › Learn about our methodology at hivesystems.io/password

Password Security

- Unique and private passwords
  - Password manager?
- Business ≠ personal
- Account lockout and inactivity threshold
- Biometrics
- Layered security

Multi-Factor Authentication

- Critical for all cloud applications
  - Remote access, email, AWS/Azure
- Mobile devices, email message, tokens
- Consider IP address, time and day restrictions

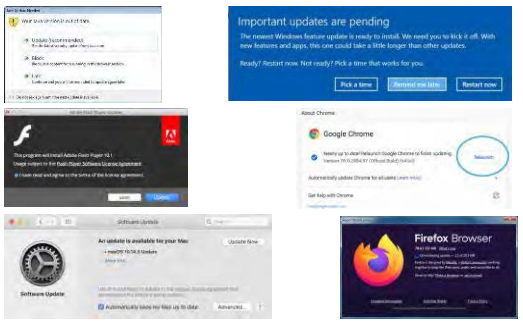
Email

- Easily spoofed or hacked
- Not all services are encrypted
- Confidential email MUST be secured
  - Sending and receiving
- If not needed, limit or restrict web mail

Wi-Fi Networks

- Ensure properly secured Wi-Fi, including those at home offices (WPA2 encryption or better)
  - Avoid use of public Wi-Fi; if necessary, use a VPN!
- Secure password for access
- Guest network for non-business systems (segregate)
- Keep personal and business devices up-to-date
- Consider the use of mobile hotspots

Malware and Patch Management



Device Management

- Centralized system
  - All devices present
  - Receive latest updates or definition files
  - Remediate issues
- Limited user rights
  - Downloaded apps from Internet
  - Browser add-ons

Web Surfing

- Avoid questionable websites
- Be cautious when downloading
- Use updated browsers
- Inspect URLs
- Be wary of malvertising

Social Networking

- Impersonation
  - Phishing and vishing
- Identity theft
- Pretexting
- Security questions and answers
- Data not always private

Data Storage

- Cloud applications typically can be accessed from any location on any device
- Risk of applications being accessible on unauthorized devices, resulting in data management concerns

Internet of Things (IoT) Devices

- Inventory devices in use
- Layered security controls
  - Strong passwords
  - Evaluate data and analytics sharing
  - Patching procedures
  - Disable features
  - Segmented network
- Consider listening capability

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Remote Access Tools

- VPNs, LogMeIn, GoToMyPC
- Increase in end users
- Require proper security measures
  - Quick fixes vs. long-term solution
- Does this affect strategic planning?

Shadow IT

- Apps or devices that are utilized without IT knowledge
  - Personal or mobile devices
- Rogue cloud services
  - Personal email, document scanning, cloud storage
- Appropriate authorization procedures

Key Takeaways

- New threats happening every day — no one is immune!
- Loss of reputation can be significant
- Manage vendor relationships appropriately
- Maintain adequate security controls
  - Provide necessary tools for users
  - Doesn't have to be expensive!
  - Train to build culture of awareness

Questions?