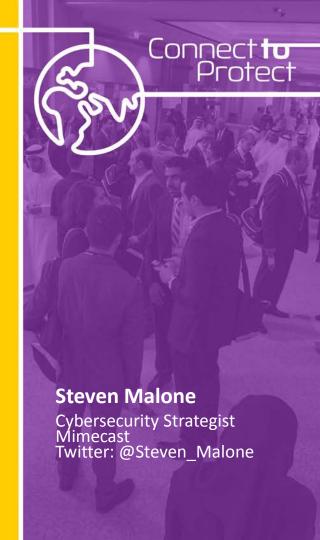
RS∧ Conference 2016

Abu Dhabi | 15–16 November | Emirates Palace

SESSION ID: SOP-W06

91% of Attacks Start with Email: Fix Your Human Firewall Flaws





Original Phishing Scams – What Do You Notice About Them?



Naomi Surugaba [a @ ____.gov.my]

Inbox

Dear Beloved Friend,

I know this message will come to you as surprised but permit me of my desire to go into business relationship with you.

I am Miss Naomi Surugaba a daughter to late Al-badari Surugaba of Libya whom was murdered during the recent civil war in Libya in March 2011, before his death my late father was a strong supporter and a member of late Moammar Gadhafi Government in Tripoli. Meanwhile before the incident, my late Father came to Cotonou Benin republic with the sum of USD4, 200,000.00 (US\$4.2M) which he deposited in a Bank here in Cotonou Benin Republic West Africa for safe keeping.

I am here seeking for an avenue to transfer the fund to you in only you're reliable and trustworthy person to Investment the fund. I am here in Benin Republic because of the death of my parent's and I want you to help me transfer the fund into your bank account for investment purpose.

Please I will offer you 20% of the total sum of USD4.2M for your assistance. Please I wish to transfer the fund urgently without delay into your account and also wish to relocate to your country due to the poor condition in Benin, as to enable me continue my education as I was a medical student before the sudden death of my parent's. Reply to my alternative email:missnaomisurugaba2@hotmail.com, Your immediate response would be appreciated. Remain blessed,

Miss Naomi Surugaba.



They're Still Around And Have Gotten Creative



Dear Mr. Sir,

REQUEST FOR ASSISTANCE-STRICTLY CONFIDENTIAL

I am Dr. Bakare Tunde, the cousin of Nigerian Astronaut, Air Force Major Abacha Tunde. He was the first African in space when he made a secret flight to the Salyut 6 space station in 1979. He was on a later Soviet spaceflight, Soyuz T-16Z to the secret Soviet military space station Salyut 8T in 1989. He was stranded there in 1990 when the Soviet Union was dissolved. His other Soviet crew members returned to earth on the Soyuz T-16Z, but his place was taken up by return cargo. There have been occasional Progrez supply flights to keep him going since that time. He is in good humor, but wants to come home.

In the 14-years since he has been on the station, he has accumulated flight pay and interest amounting to almost \$ 15,000,000 American Dollars. This is held in a trust at the Lagos National Savings and Trust Association. If we can obtain access to this money, we can place a down payment with the Russian Space Authorities for a Soyuz return flight to bring him back to Earth. I am told this will cost \$ 3,000,000 American Dollars. In order to access the his trust fund we need your assistance.

Consequently, my colleagues and I are willing to transfer the total amount to your account or subsequent disbursement, since we as civil servants are prohibited by the Code of Conduct Bureau (Civil Service Laws) from opening and/or operating foreign accounts in our names.

Needless to say, the trust reposed on you at this juncture is enormous. In return, we have agreed to offer you 20 percent of the transferred sum, while 10 percent shall be set aside for incidental expenses (internal and external) between the parties in the course of the transaction. You will be mandated to remit the balance 70 percent to other accounts in due course.

Kindly expedite action as we are behind schedule to enable us include downpayment in this financial quarter.

Please acknowledge the receipt of this message via my direct number only.

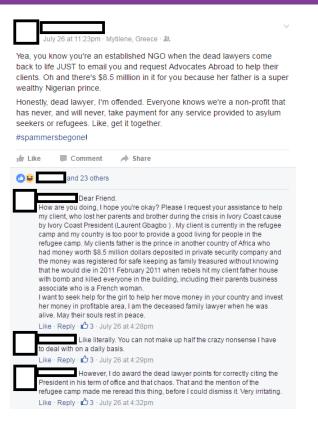
Yours Sincerely, Dr. Bakare Tunde Astronautics Project Manager





And They Do Not Discriminate Who They Target – No One Is Safe







They're Not Necessarily Even Sophisticated Attacks – Yet They're Still Successful



Reply-To: " < President office@aol.com>

To:

Subject: Request

Date: Mon, 25 Apr 2016 16:12:41 -0700

Mime-Version: 1.0

X-MC-Unique: 65n_7iqPRWyro1WPbKr3GA-1
Content-Type: text/html; charset="utf-8"
Content-Transfer-Encoding: quoted-printable

From:

Sent: Monday, April 25, 2016 6:13 PM

Subject: Request

Hi ,

Please send me the list of W-2 copy of all employees wage and tax statement for 2015. Kindly prepare the report in PDF and send via email.

Thanks,

PRESIDENT



You Don't Even Need To Know How To Code



| Name to the second of the seco | | | | | | |
|--|-------------------|---|------------------------|--------------------|------------|--|
| All your files have been encrypted | Stampado | Ransomwar | e - FUD - CHE | APEST - ON | ILY | |
| and excepted! Administra Sects, images, citiza, musica dis Linea encrypted. The encryption was done using a second | \$39 - FULL | LIFETIME LI | CENSE | | | |
| , you will need to buy the secret bey then us. We are the only on the world who can people this for , now, a conduct the is permissively denied. The theter you are, the least flow you will take. | | | somware | | | |
| a key will be permanently deleted and there will be no very of recovering your files. | | wanted a Ransomware but never wanted to pay hundreds of dollars for it? - This list | | | | |
| saling your ID (Selbed) and wait for as to wood the instructions. | you! :) | | | | | |
| O-4.05 | Stampado is a che | eap and easy to manag | ge ransomware, develop | ed by me and my te | alli. I | |
| | | | | | | |
| and one encygled file, to we will send it buck decrypted. Use it to a guarantee that we can decry above. The extraplica: | | eap and easy to manag maker - 2 sold since <i>Ju</i> | | | | |
| and one encygne) file, as we will send it both discipped. Use it as a guarantee that we can disciple. See entraphise. | | | | | | |
| and the enception (is, is we will send it best thoughed. Use it as a parameter the loss can then, show, as the second in the contraction in the second in the contraction. So days, 50 flowers, 50 floration and 50 second in the contraction. | | maker - 2 sold since Ju | | vel 1 Trust Leve | | |
| and one encythed file, so we will need it best thoughted. Use it as a guestime the ine can then, shows a sense of the encythering the encythering was sense file seconds: 3 days, 50 finance, 50 finances and 50 seconds. | Sold by The_Rain | maker - 2 sold since Ju | ul 12, 2016 Vendor Le | rvel 1 Trust Leve | | |
| tes and 16 seconds 3 days, 23 nouns, 56 minutes and 36 sec | Sold by The_Rain | maker - 2 sold since Ju Features Digital goods | Origin country | Features Worldwide | | |

"Stampado encrypts files and gives the victim 96 hours to pay a ransom. It's advertised as fully undetectable and can be deployed in .exe, .bat, .dll, .scr and .cmd files. In an added twist, Stampado deletes a randomly selected file every six hours if the ransom is not paid."

Source: Forbes.com - "Ransomware As A Service Being Offered For \$39 On The Dark Net" 7/15/16



"The risk doesn't go away, it just changes its nature."



- Attackers have evolved
 - You need to evolve with them
 - Your products need to evolve even faster
- Ransomware has become RaaS
- Wire transfer scams are on the rise
- Users are preyed upon
 - Do <u>you</u> honestly trust your users?



Attackers Are Not Slowing Down – And They Don't Plan To Either



- In the past 18 months, 1,300% increase in identified losses in excess of \$3.1 Billion
- All 50 U.S. states
- 100+ Countries
- Fraudulent transfers sent to 79 countries

It's Not Just About Wire Transfers!



- Data Mining is incredibly valuable
 - Employee W2s
 - Insider information
 - Proprietary data
 - Upcoming changes in the company
- Think of all the variations of attacks using the data they are able to pull
 - Identity theft
 - Stock manipulation
 - Leaking inside "trade" secrets







What you think your security looks like







What your security actually looks like



You are at risk if...



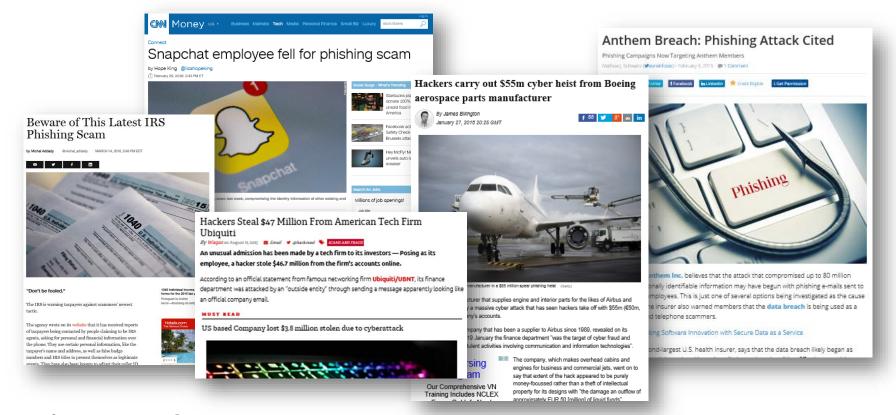
- You have certain letters in your company name
- You showcase your senior employees
- You accept resumes on your website
- You have an active social presence
- Your users share on social media





In the Headlines









70% of attacks lead to secondary target

Verizon 2015 Data Breach Investigations Report (DBIR)





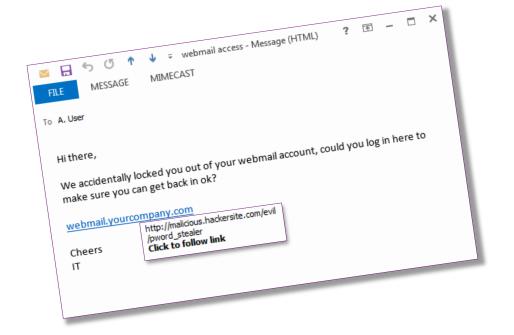


Which means: You could be the stepping stone or 'pivot'

Verizon 2015 Data Breach Investigations Report (DBIR)





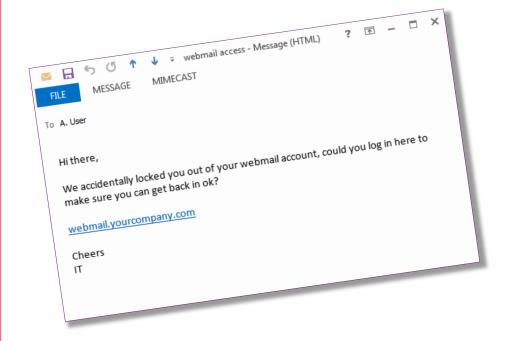


91% of all incidents start with a phish

Wired 2015







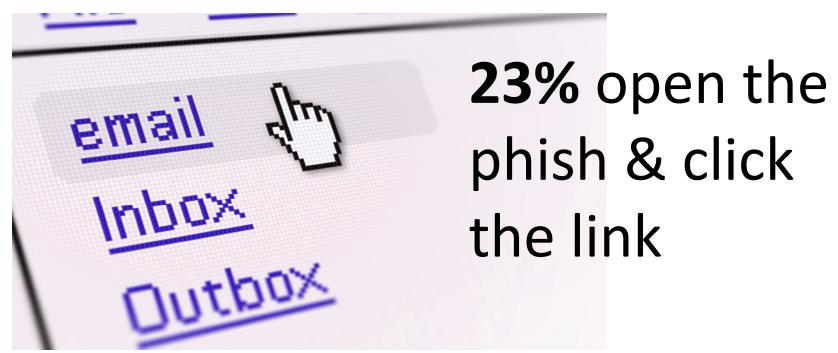
1 minute22 seconds

a phish: median time-to-first-click

Verizon 2015 Data Breach Investigations Report (DBIR)



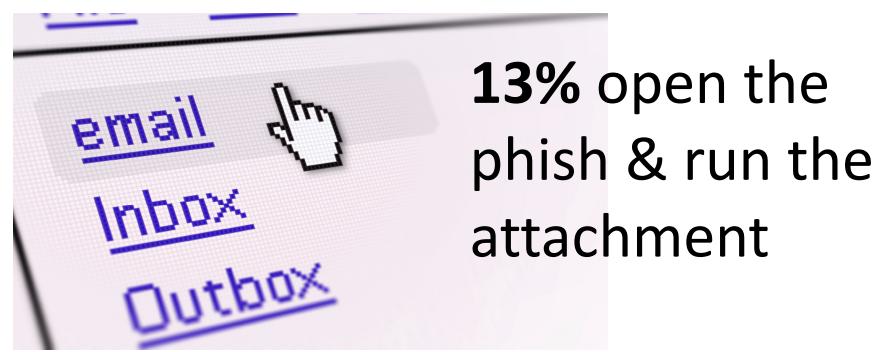




Verizon 2013 Data Breach Investigations Report (DBIR)







Verizon 2013 Data Breach Investigations Report (DBIR)





How are attackers targeting you?

People inherently want to help — it's in our nature — The human firewall is flawed







Targeted attacks are well researched









Corporate Stalking: They will learn everything they can about you



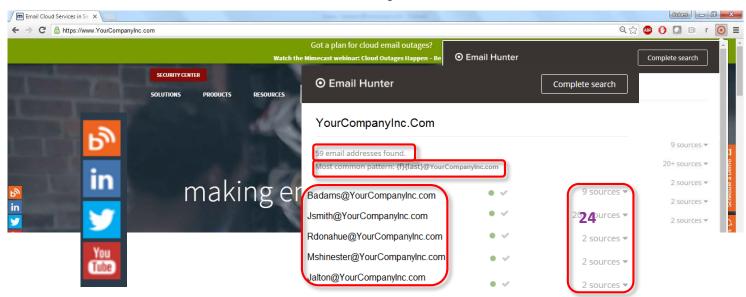
- Your company website
- Social media presence
- Leadership and High Value Targets (HVTs)
- Free tools (e.g.: Google Chrome Plugins)

Let's explore the methods of attackers and how they're gathering other, lesser known, public data





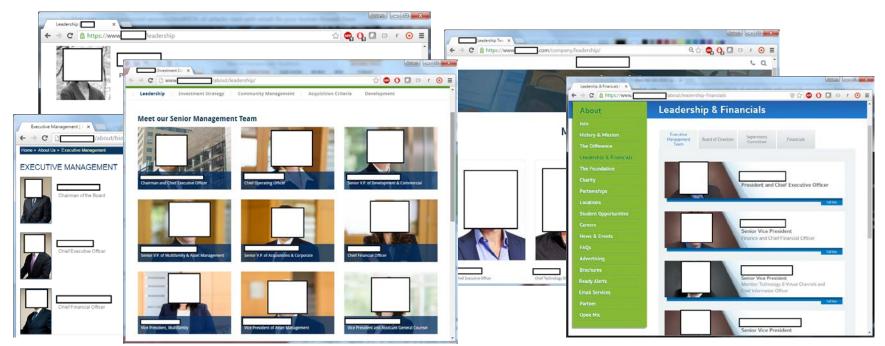
Your Website Is Their Launching Pad & Email Hunter Is Here To Help... Attackers







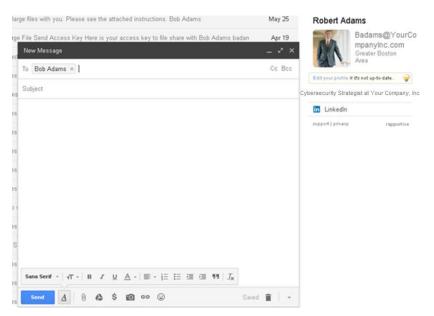
Your Executive Team Will Be Found







Rapportive Will Confirm Your Users Address (Particularly The HVTs) And Correlate Them To Their Social Media Profile(s)

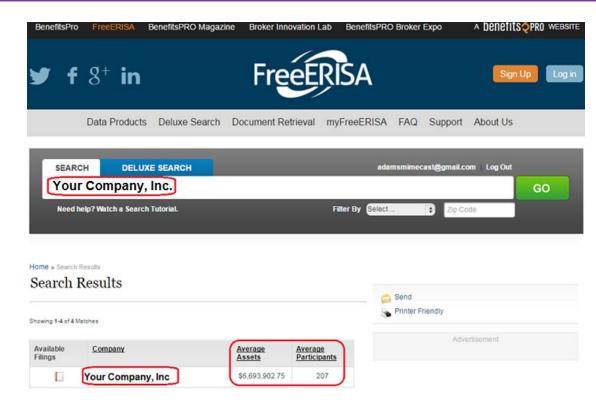




Step 1: Locate Your Company



FreeERISA



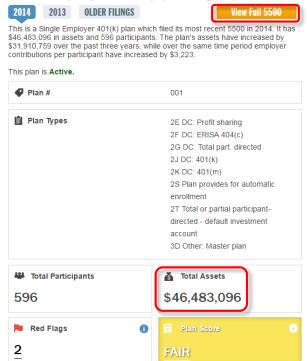


Step 2: Review



Form 5500

Your Company, Inc 401(K) Savings Plan





Step 3: Pull Out Relevant Details



Plan Name, EIN, Business Code, Document Signer

| Form 5500 Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation | Annual Return/Report of Employe This form is required to be filed for employee sections 104 and 4065 of the Employee Retirement Inco- 1974 (ERISA) and sections 6047(e), 6057(b), and 6058(a) of the Code (the Code). | OMB Nos. 1210 - 0110 1210 - 0089 2014 This Form is Open to Public Inspection | | | |
|---|---|--|---|--|--|
| | Complete all entries in accordan the instructions to the Form 5 | | | | |
| Part I Annual Report Identificati | | | | | |
| A a multiple-employer plan (Filers c | cal plan year beginning January 01, 2014, an hecking this box must attach a list of in accordance with the form instructions)for | a multiemployer plan; a single-employer plan; | r 31, 2014 ☐ a multiple-employer plan; ☐ a DFE (specify) | | |
| B This return/report is: | | ☐ the first return/report; ☐ an amended return/report; | the final return/report; a short plan year return/report (less than 12 months). | | |
| C If the plan is a collectively-bargain D Check box if filling under: Part III Basic Plan Information — | enter all requested information. | Form 5558; | ☐ automatic ☐ the extension; DFVC program; sion (enter description) | | |
| 1a Name of plan | enter an requested information. | 1b Thre | e-digit 001 | | |
| Your Company 401(k) Invest | ment Plan | 1c Effec | number (PN) tive date of plan lary 01, 2009 | | |
| 2a Plan sponsor's name and address, including room or suite number (Employer, if for single-employer plan) Your Company, Inc. | | | oyer Identification Number (EIN) 45493 | | |
| | | | 2c Sponsor's telephone number 800-867-5309 | | |
| 123 Technology Dr. Boston, Ma 02124 | | Business code (see instructions) 452628 | | | |
| Under penalties of perjury and other | omplete filing of this return/report will be asses penalties set forth in the instructions, I declare is and attachments, as well as the electronic ve- set, and complete. | that I have examine | ed this return/report, including | | |
| Signature of plan administrato | 10/13/2015 John M | | istrator | | |



Step 4: Insurance Information



Insurance Company, Insurance EIN, Contract Number, etc

| | DULE A | | | nce Info | | | OMD No | 4040 0 | 140 | |
|------------------------------------|----------------------------------|---------------|---|--------------|----------------------|---------------|-----------------------------|---|-------------|--|
| | m 5500 | | This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA) | | | | OMB No. 1210 - 0110 2014 | | | |
| | of the Treasury venue Service | Embio | | | | | | This Form is Open to Public | | |
| | ent of Labor | - | File as an att | achment t | o Form 5500. | | | ection |) i (ii)ii) | |
| | Security Administration | 1 | | | | | | | | |
| Pension Benefit (| Guaranty Corporation | Insuran | | | to provide the info | rmation | | | | |
| | | | | | on 103(a)(2). | | | | | |
| | plan year 2014 or f | iscal plan y | ear beginning <mark>J</mark> a | nuary 01, | | | | | | |
| A Name of plan | | | | | | B Three-o | | | 001 | |
| , | / O I | 101/00/01 | | | | plan nu | ımber (PN) | | | |
| , | Your Company, Inc | 401(K) PLA | N . | | | | | | | |
| C Plan enoncor's | name as shown or | line 2a of F | orm 5500 | | | D Employ | er Identificatio | ın Numb | er (EIN) | |
| 2 1 Idii opoiiooi o | manic ac chemi ci | · mio za oi i | 01111 00000 | | | D Lingio, | or racritimeans | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | /C1 (E114) | |
| Your Compan | y, Inc | | | | | 27-206 | 4493 | | | |
| | | | | | | | | | | |
| | tion Concerning Ins | | | | | | | | | |
| | parate Schedule A. I | ndividual co | ntracts grouped : | as a unit in | Parts II and III car | n be repo | rted on a sing | le Sched | dule A. | |
| Coverage Infor | | | | | | | | | | |
| (a) Name of insu | rance carrier | | | | | | | | | |
| | | LIEFIN | OUDANIOE COM | 24504410 | | | | | | |
| | | LIFE IN | SURANCE COM | PANY (U.S. | A.) | | | | | |
| (b) EIN | (c) NAIC code | (d) C | ontract or | (e) Ar | roximate number | of | Policy or co | nntract vi | ear | |
| (b) Ell4 (c) Taxle code | | | identification number persons covered at | | | | | | | |
| | | | | | cy or contract year | | (f) From | (g) | To | |
| | | | | | | | | | | |
| 18-5245493 | 65838 | 9 | 0928 84 | | 84 | | 01/01/2014 12/3 | | 1/2014 | |
| | | | | | | | | | | |
| | and commission inf | | | and total c | ommissions paid | l. List in it | em 3 the ager | nts, brok | ers, and | |
| | descending order o | | | | | | | | | |
| (a) | Total amount of con | nmissions p | paid | | (b) Total | amount o | of fees paid | | | |
| | | | | | | | | | | |
| | \$7,717 | | | | | \$1,000 | | | | |
| | | | | 1 | | | | | | |
| | ving commissions a | | | | | | | | | |
| (6 | a) Name and addre | ss of the ag | enii, proker or oth | er person t | u wriom commiss | sions or fi | ees were paid | | | |
| | | | INICUID | ANCE AGE | NOV INO | | | | | |
| | | | | E DEPART | | | | | | |
| | | | 11142110 | MA | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| (b) Amo | unt of sales and ba | se | Fees | and other | r commissions paid | | (e) Organization | | ion | |
| co | mmissions paid | | (c) Amo | unt | (d) Purp | | | code | | |
| | | | | | | | | | | |
| | \$5,550 | | | | | | | 3 | | |



Step 5: Accounting Firm Information



| Part III Accountant's Opinion | | |
|---|----------|------|
| 3 Complete lines 3a through 3c if the opinion of an independent qualified public accountant is attached to this Form 55 | 00. Comp | lete |
| line 3d if an opinion is not attached. | | |
| a The attached opinion of an independent qualified public accountant for this plan is (see instructions): | | |
| (1) ☐ Unqualified (2) ☐ Qualified (3) 🛽 Disclaimer (4) ☐ Adverse | | |
| b Did the accountant perform a limited scope audit pursuant to 29 CFR 2520.103-8 and/or 103-12(d)? | X Yes | |
| | No | |
| c Enter the name and EIN of the accountant (or accounting firm) below: | | |
| (1) Name Adams & Adams CPAs (2) EIN: 03-2166147 | | |
| d The opinion of an independent qualified public accountant is not attached because: | | |
| (1) ☐ This form is filed for a CCT, PSA, or MTIA. (2) ☐ It will be attached to the next Form 5500 pursuant to 29 CFR | | |
| 2520.104-50. | | |

Remember: It's Not Just About Your Company – It's About Who Attackers Know You Work With



Complete Attack Profile Of Your Company



- Social Media (Company Website, Facebook, LinkedIn, Twitter, Bloomberg, etc)
- Email Hunter addresses (compile list and identify common format)
- High Value Targets (Executives, Board Members, Finance, and HR)
 - Identify likely email addresses using Email Hunter format
 - Correlate addresses/high value targets to social media profiles using Rapportive
- Organize FreeERISA Data Investment, 401k, Insurance, Accounting Information



Commence Attack



- Email careers address/HR with a resume.doc loaded with ransomware
- Send link to finance/executive team referencing EIN from Form 5500 and other details asking to confirm updated terms and conditions
- Email finance as an executive asking for a wire transfer
- Identify upcoming social events employees will be at and use those details



Malicious URLs



Endpoint Protection *Is*A Must – But What

About External Access

Outside Your Firewall?



Sent: Thursday, October 01, 2015 1:44 PM
To: Bob Adams

badams@mimecast.com>

Subject: Your Chase Account Has Been Comprimised



Hello Chase Online™ Customer.

We are sorry, due to several failed attempts to access your account, we have temporarily deactivated your account for your protection. You are required to reactivate your bank account within the next 48 hours in order to continue using it.

Please logon to www.chase.com and enter your information correctly.

We apologize for any inconvenience this may have caused and look forward to taking further action with you to ensure your account remains secure.

Please do not reply to this automatically system generated email.

Sincerely,

-Your Chase OnlineTM Banking Team

JPMorgan Chase Bank, N.A. Member FDIC ©2012 JPMorgan Chase & Co.



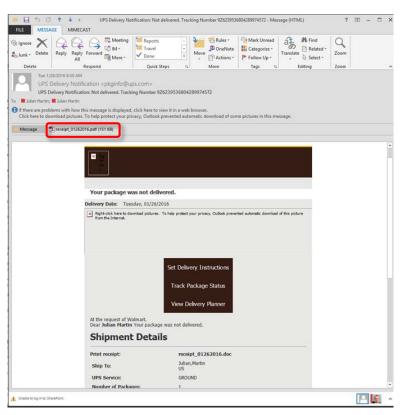
Attachment Sandboxing



Sandboxing is crucial for every organization — but don't forget about file transcription options



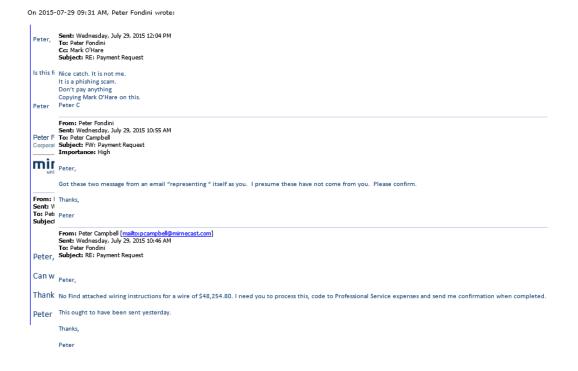




Do Not Forget About Malwareless Attacks!!!



Business Email
Compromises (aka:
Whaling Attacks) often
exploit users through a
number of methods









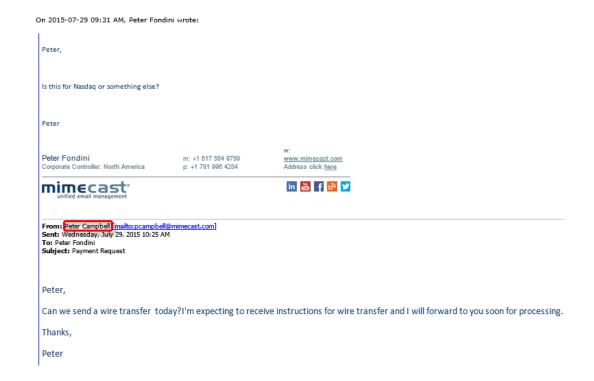
Let's examine this attack closer and how it could have been prevented by fixing the Human Firewall





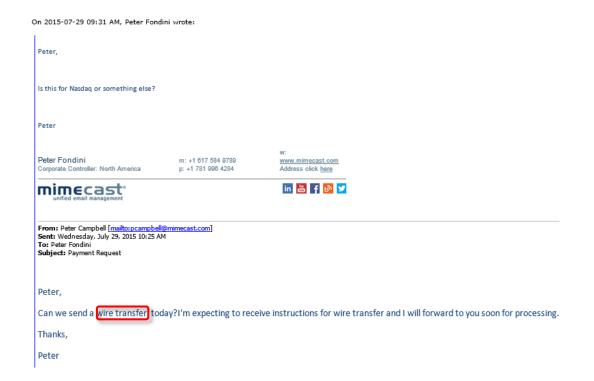
Perform User Name
Checks – Attackers
Know Your Leadership
Team And Will
Impersonate Them!
Remember: Everyone
Is A Potential Target







Check For Common Keywords Used By Attackers – e.g.: Wire Transfer, Wire Payment, W2, P60, etc

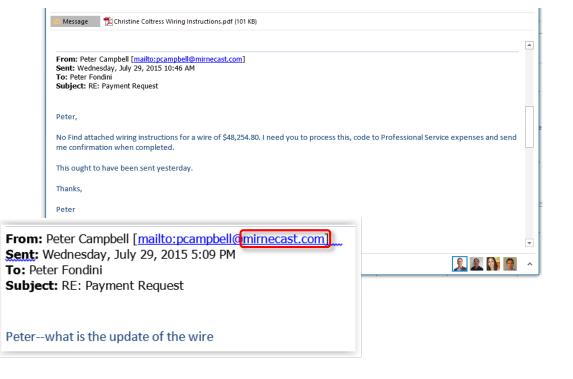








Check For Similar
Domains – Not Your
Spoofed Domain, But
A Slight Variation

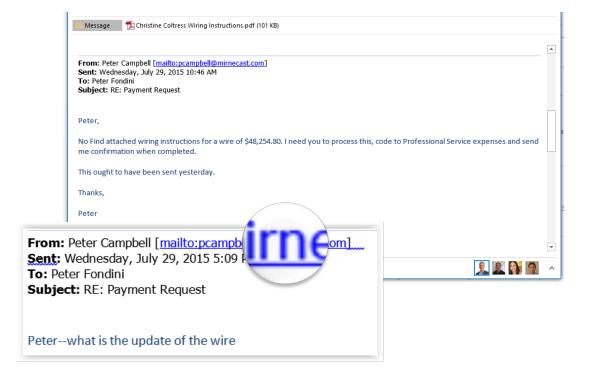








Check For Similar
Domains – Not Your
Spoofed Domain, But
A Slight Variation





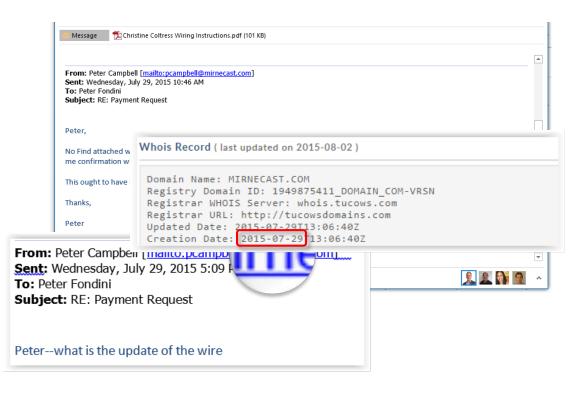




Examine the Domain Age – How often do you work with new domains?







Simplicity, Credibility, Psychology, And Urgency Lead To Their Success



- Emails do not go into detail
 - Need a Wire Transfer
 - Send me Employee W2s
 - Click on this link/Open this attachment
- Public information gives credible data sources to leverage
- Leverage manipulation tactics to trick users e.g. C-Level
 Impersonation
- They need it done now and are often unavailable to discuss further



So what can you do?







Layer 1: The technology







Layer 2: The people - a human firewall





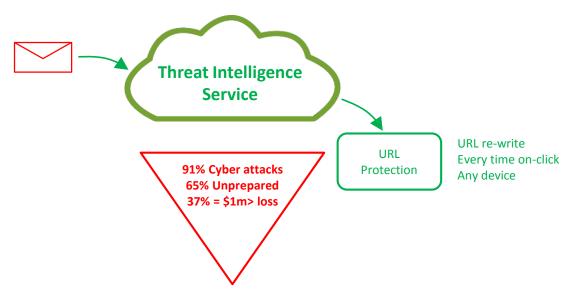






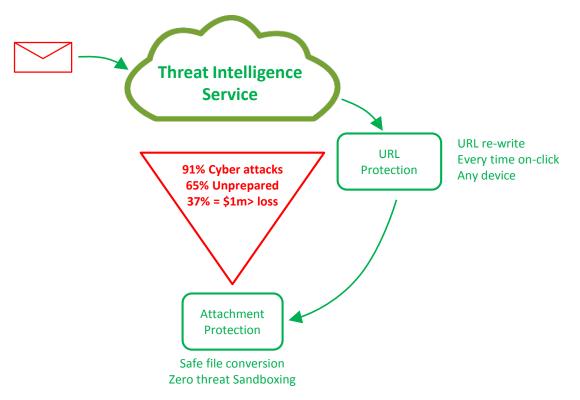






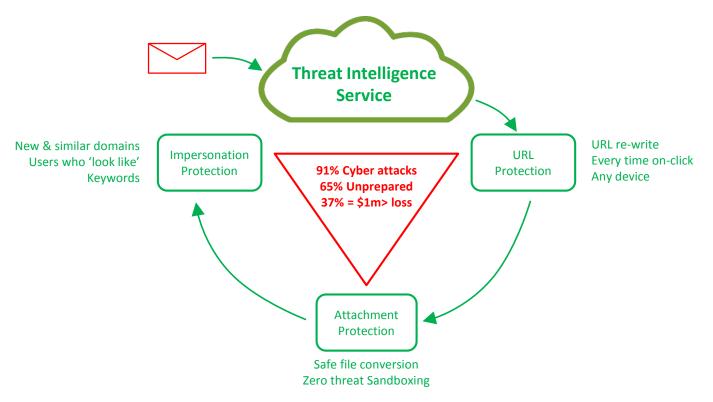






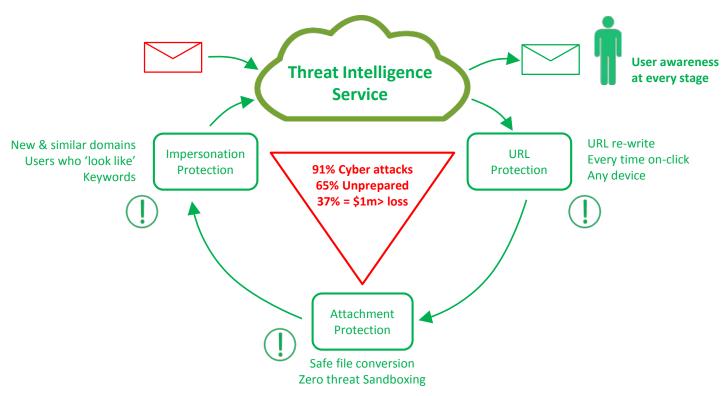


















This works too



How do I apply this?



- When you get back to the office, consider:
 - Are my employees security aware?
 - Do I have the right security technology?
 - Do I have buy-in from the top?

Thank You



Email: smalone@mimecast.com

Twitter: @Steven_Malone