

Turning the Tables: Putting Threat Intel to Work Against Attackers

Etay Maor, Chief Security Officer

Hi

- Chief security officer, Intsights
 - IBM Executive security advisor
 - RSA Head of cyberthreats research lab
- Adj Prof at Boston College
- Started my career in high school... not in a good way











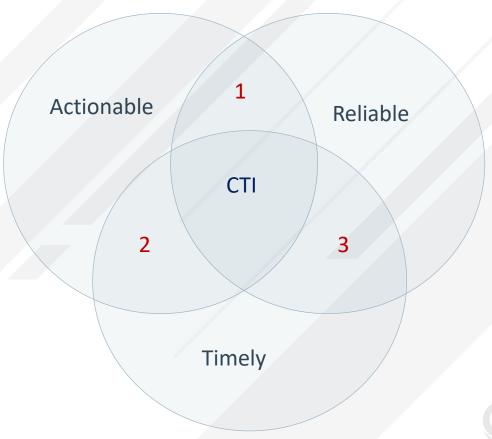
CTI is an ART

1 - Not Timely? Old news, attack already happened.

2 – Not Reliable? Fake news, false positives are coming.

3 – Not Actionable? Just a feed, data overload.

Holistic & Tailored





Who Is Targeted More These Days?

People

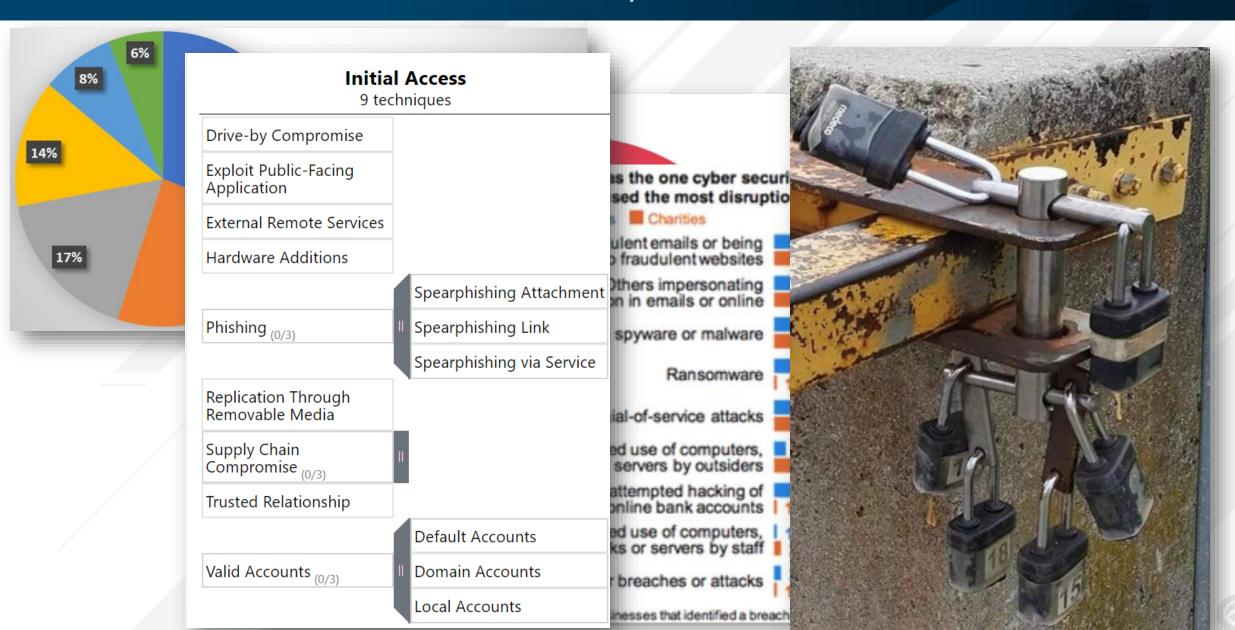
Processes

Technology





The Two Reasons For Every Breach





OSINT is EASY

1



Researching Target Affiliates

- According to the website, partners with 2 institutions to and to do research on Advancing state of the art discoveries:
 - Karolinska Institutet and Karolinska University Hospital Advancing state of the art discoveries with mRNA Therapeutics™ to treat serious diseases
 - Institut Pasteur For the discovery and development of drugs and vaccines for infectious diseases using the mRNA Therapeutics™ platform

Biopharma | Government | Foundations | Research Institutes







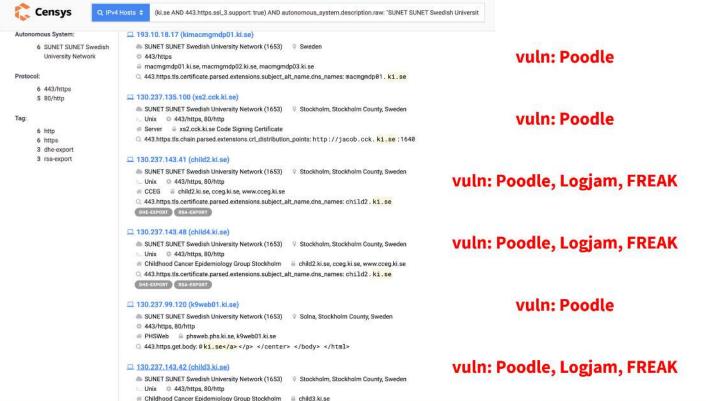




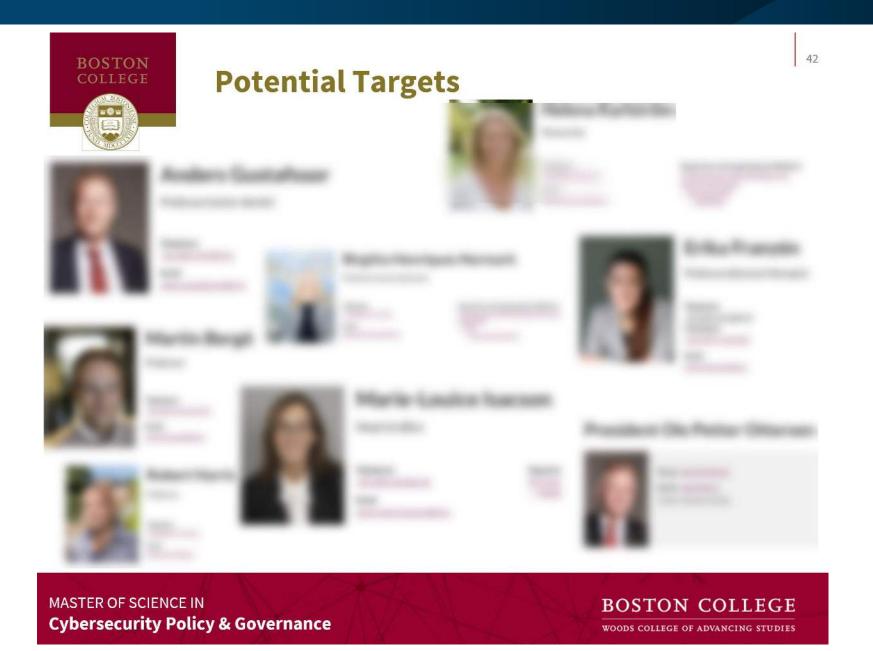




Some Karolinska servers are vulnerable...











Open Source Investigations

Bk: 58623 Pg: 103 BY SECONN BELOW, Denower accepts and agents to the latter and continues contained in this faculty instrument and in any Rider concusted by Businesse and recorded with it. 1252

Bk: 58623 Pg: 88

PERJURY, this 28 day of	Petrong 2012.
COMMON	WEALTH OF MASSACHUSETTS
Norfle as	First 28, 2012
On this 28 day of undersigned notary public, pe to me through satisfact	rsonally appeare proved
on the preceding or attached	to be the person whose name is signed document, and acknowledged to me that he/she
signed it voluctably for its stat	-
1	(official signature and seal of notary)
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My Confunissian' Expires:	
My Confunitation Expires:	

(Detailed)

- Has a favorite hobby that is baking gingerbread houses
- She bakes a massive gingerbread house for
- She starts shopping and preparing this house in mid to late October
- She shops at two stores every year
 - o • • in Marlborough
 - o in Kittery
- Emails:
 - @aol.com
 - @comcast.net



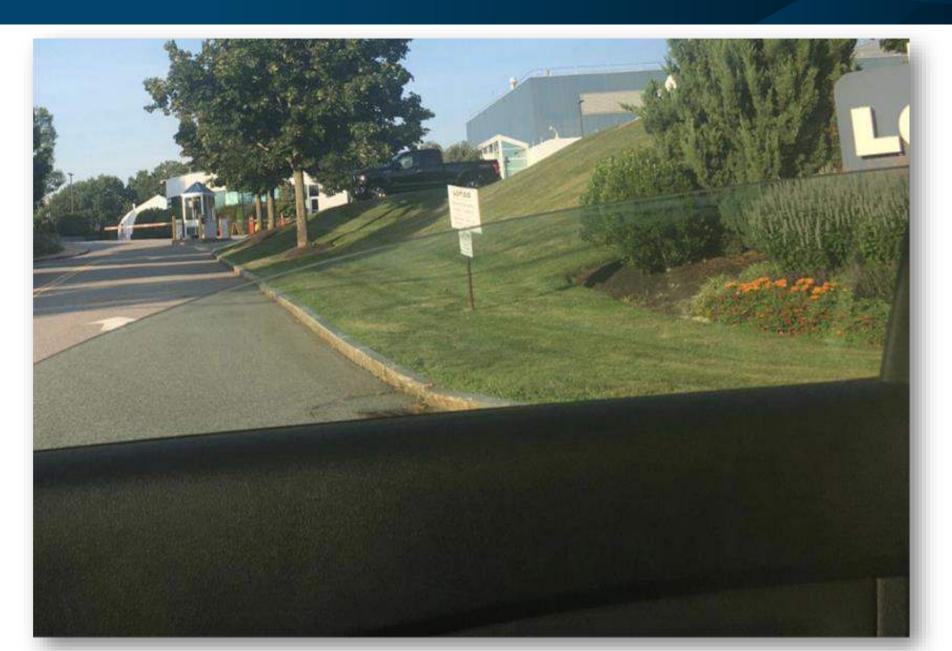












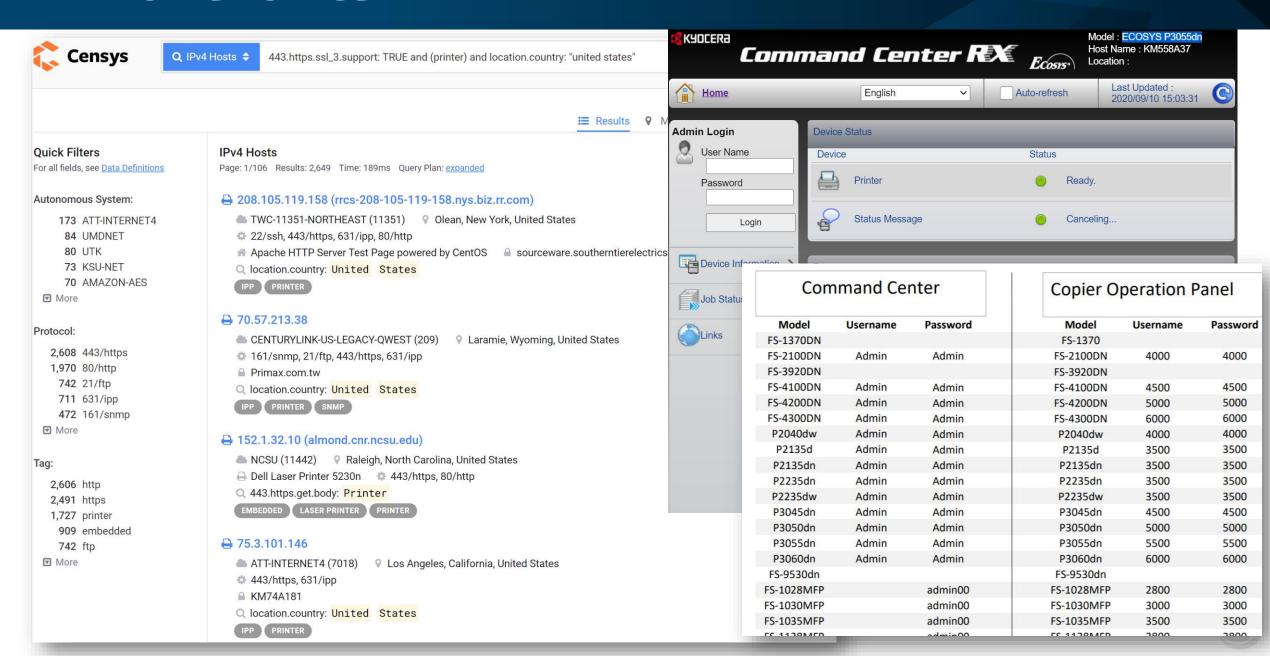


"Home" Office

Router Brand	Login IP	Username	Password
3Com	http://192.168.1.1	admin	admin
Belkin	http://192.168.2.1	admin	admin
BenQ	http://192.168.1.1	admin	admin
D-Link	http://192.168.0.1	admin	admin
Digicom	http://192.168.1.254	admin	michelangelo
Digicom	http://192.168.1.254	user	password
Linksys	http://192.168.1.1	admin	admin
Netgear	http://192.168.0.1	admin	password
Sitecom	http://192.168.0.1	sitecom	admin
Thomson	http://192.168.1.254	user	user
US Robotics	http://192.168.1.1	admin	admin



"Home" Office



Oversharing On GITHUB

Uber data breach from 2016 affected 57 million riders and drivers

Darrell Etherington @etherington / 5:20 pm EST • November 21, 2017



The report says the attack occurred because attackers managed to gain login credentials for an Uber Amazon Web Services account using a private GitHub site maintained by Uber engineers.



Scotiabank source code, credentials found open on GitHub: news report

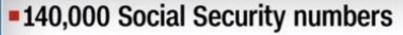


Howard Solomon @howarditwc Published: September 19th, 2019



Oversharing On GITHUB

CAPITAL ONE DATA BREACH

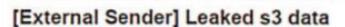




■80,000 bank account numbers



Responsible Disclosure (Shared) <responsibledisclosure@capitalone.com>



To: "responsibledisclosure@capitalone.com" <responsibledisclosure@capitalone.com>

Hello there.

There appears to be some leaked s3 data of yours in someone's github / gist:

https://gist.github.com

Let me know if you want help tracking them down.

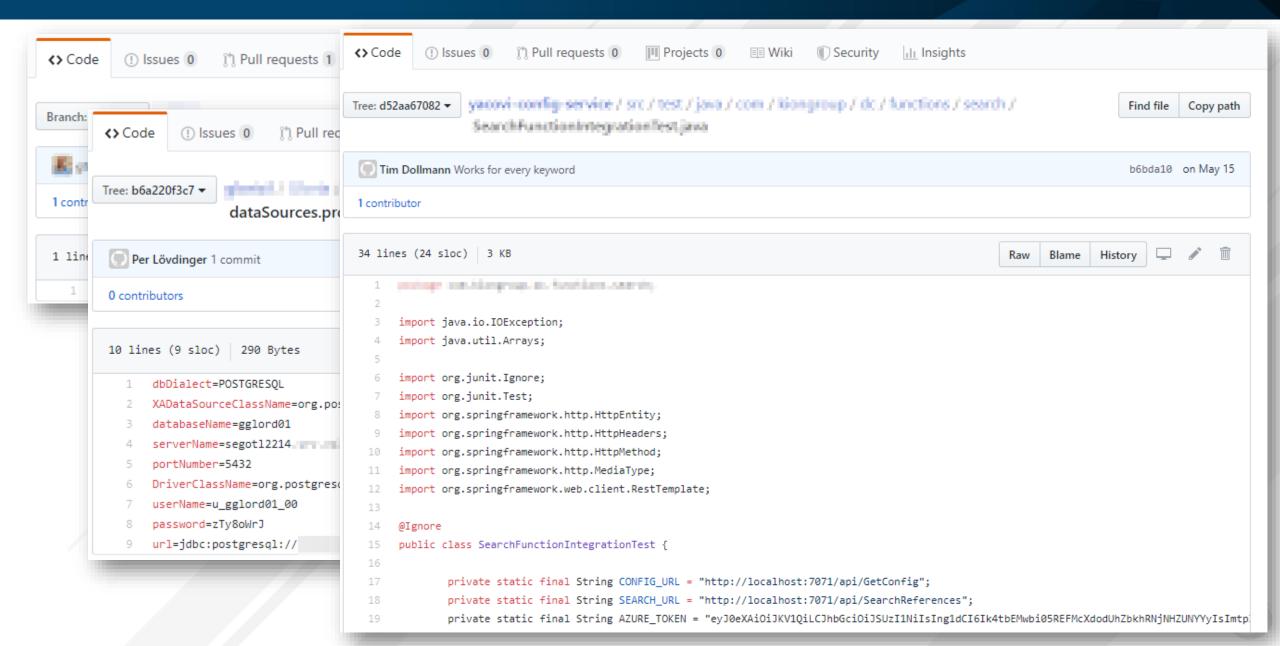
Thanks,

Wed, Jul 17, 2019 at 1:25 AM



CNN B

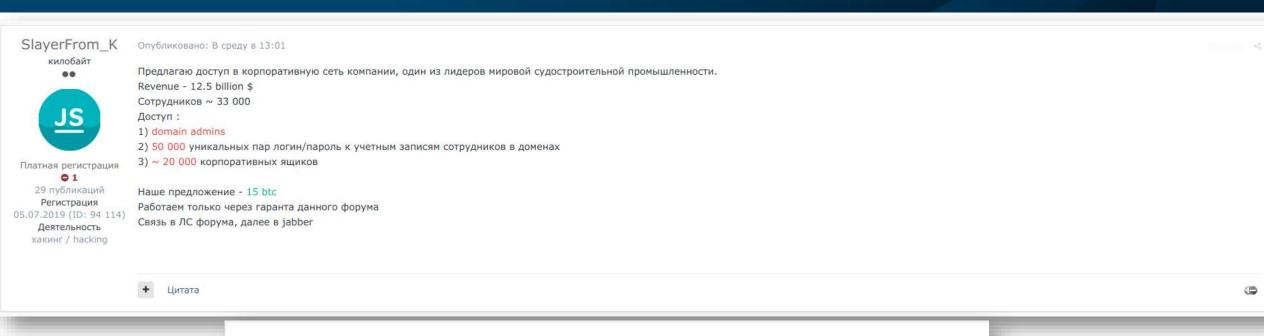
Or Just Search GitHub...





For Sale

Domain Admins





RCE Vul, RDP/VNC



RCE at *** Bank

Автор: Ferb, 6 сентября в [Доступы] - FTP, shell'ы, руты, sql-inj, БД, дедики

Подписаться

Создать тему

Ответить в тему



Платная регистрация 00 3 публикации

> Регистрация 24.08.2020 (ID: 107 681) Деятельность хакинг / hacking

Опубликовано: 6 сентября (изменено)

Price: \$10,000 USD (UNITED, STATES, DOLLAR)

I am selling a vulnerability that allows RCE, you can get a reverse shell at the bank.

You can contact me via XMPP[1] or e-mail[2].

Be direct in negotiation.

This bank is very good for you to hack, steal and in the end earn good money. I recommend that you read this Phineas Fisher guide[3] Come talk to me and I will show you the proof of this vulnerability.

Come talk to me and I will share details like(bank name) and show you the proof of this vulnerability.

- [1] ghostfalcon@jabbim.ru
- [2] jestersnc@protonmail.com
- [3] https://dl.packetstormsecurity.net/papers/attack/hackback-bankrobbing.txt

Изменено 6 сентября пользователем Ferb



Цитата

Подписаться

0



Продажа брут RDP/VNC

Автор: zone, 19 июня в [Доступы] - FTP, shell'ы, руты, sql-inj, БД, дедики

Создать тему

Ответить в тему

байт

zone

Платная регистрация 0 0 6 публикаций

> Регистрация 06.04.2020 (ID: 102 372) Деятельность

хакинг / hacking

Опубликовано: 19 июня

В наличии брученные внц и рдп

По локациям юса и европа

рдп от 10\$

vnc or 20\$

Оплата в бтс

Jabber: stopware@jabber.ru

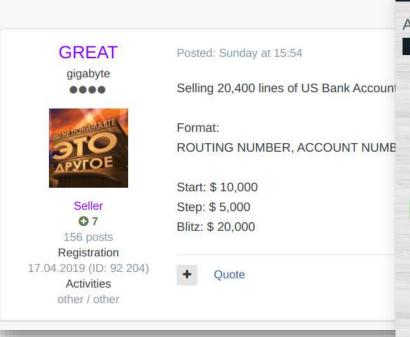
Цитата

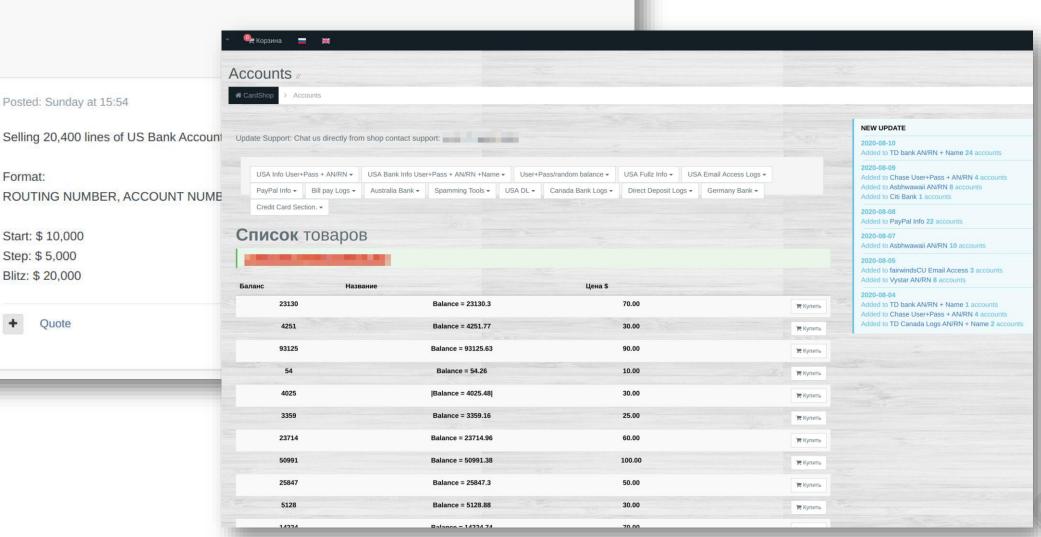
Bank Accounts



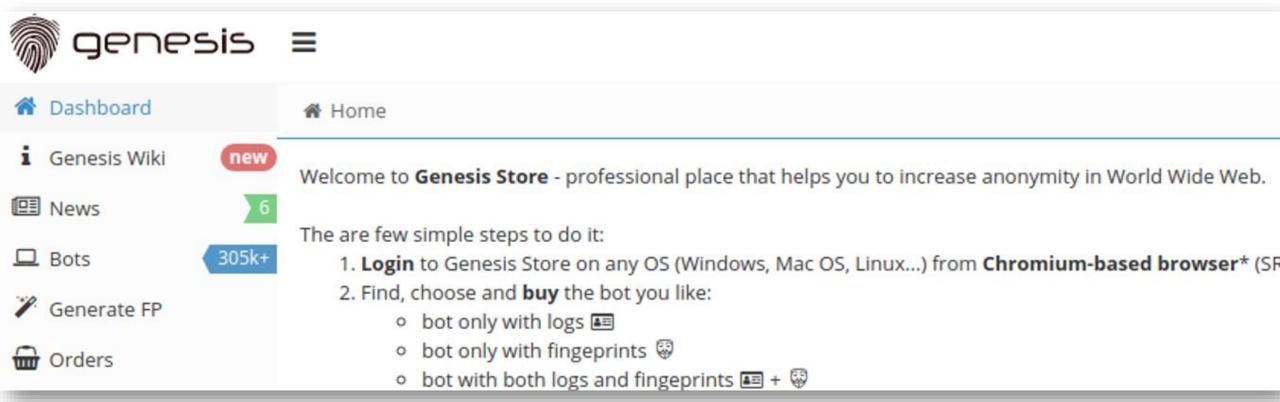
Sell 20 400 BA US

Author: GREAT, Sunday at 15:54in Auctions





Identity Markets Booming

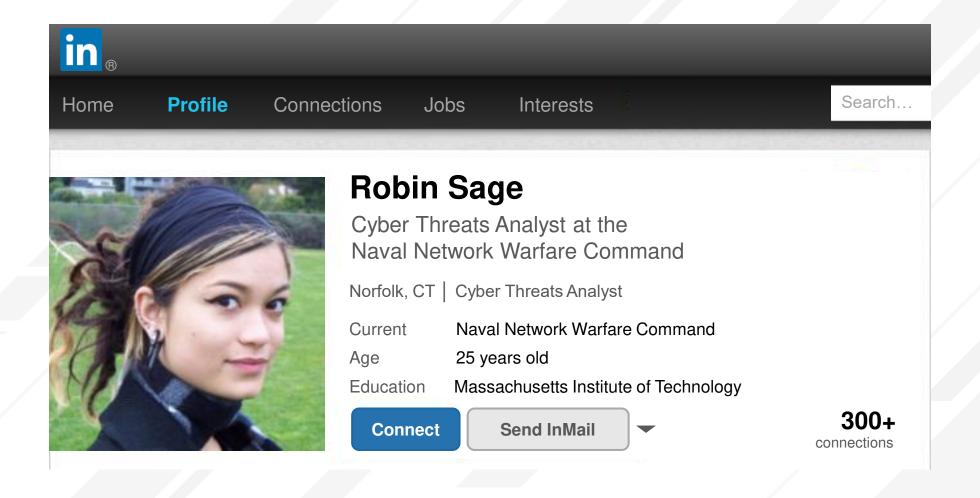






Social Engineering

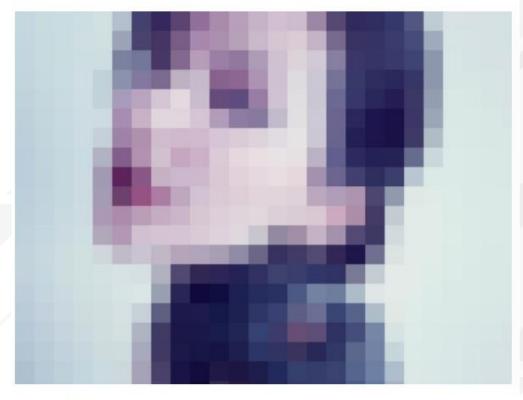
Meet Robin Sage





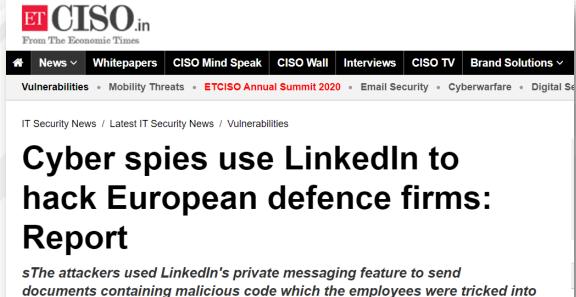
ANDY GREENBERG 07.27.17 10:00 AM

MEET MIA ASH, THE FAKE WOMAN IRANIAN HACKERS **USED TO LURE VICTIMS**



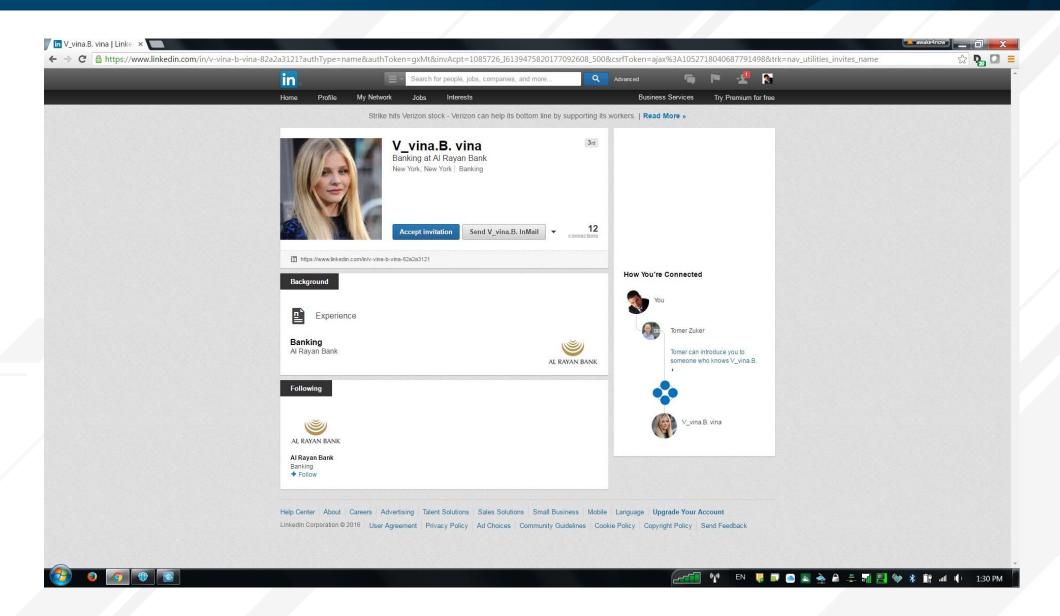
FOI SECUREWORKS

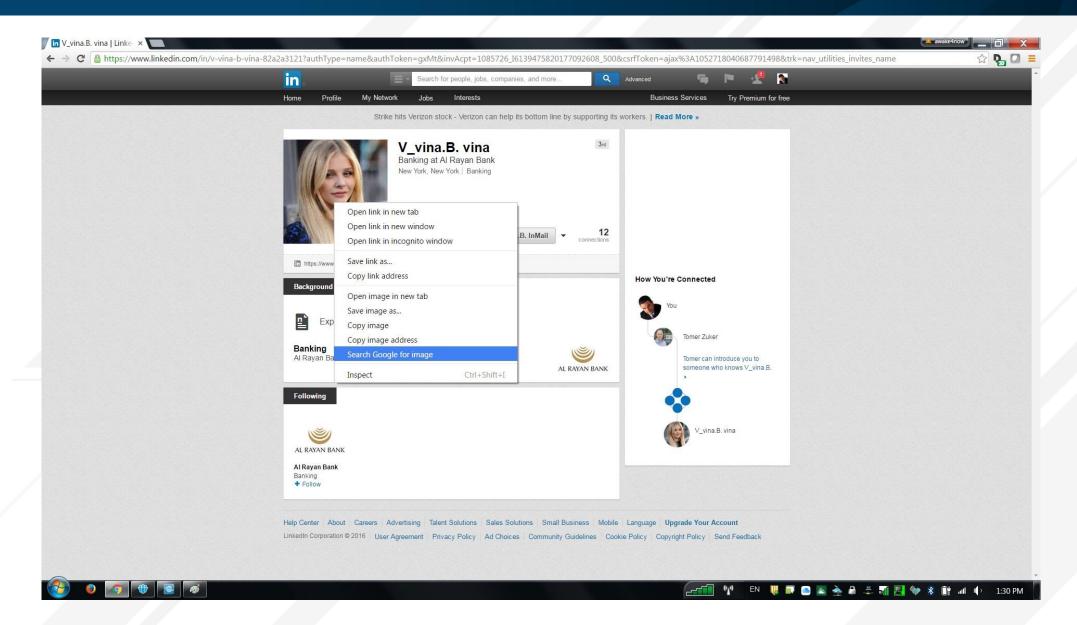
MIA ASH IS a 30-year-old British woman with two art school degrees, a successful career as a photographer, and plenty of friends—more than 500 on Facebook, and just as many on

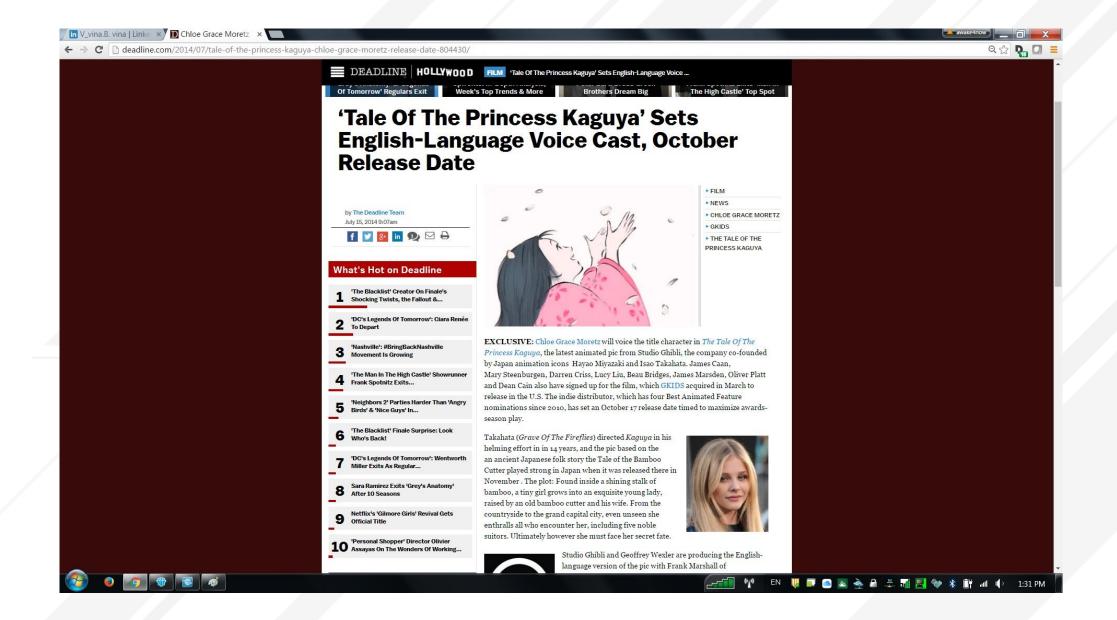


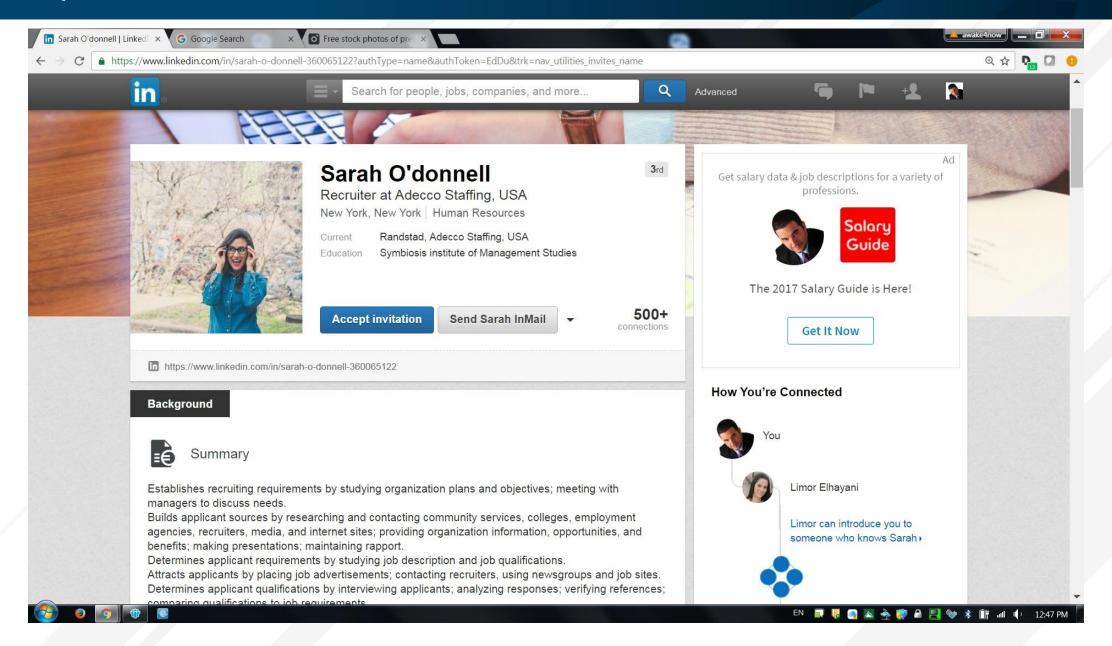
opening, said Jean-lan Boutin, ESET's head of threat research.

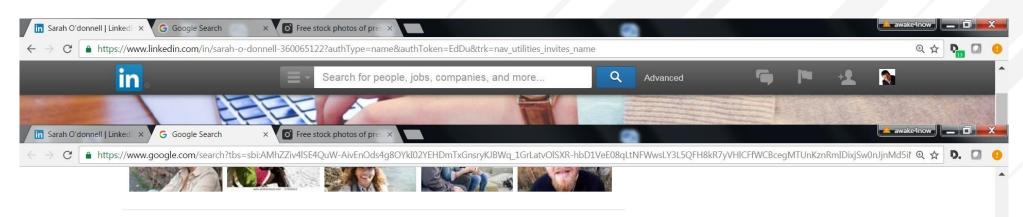
Reuters • June 18, 2020, 11:07 IST











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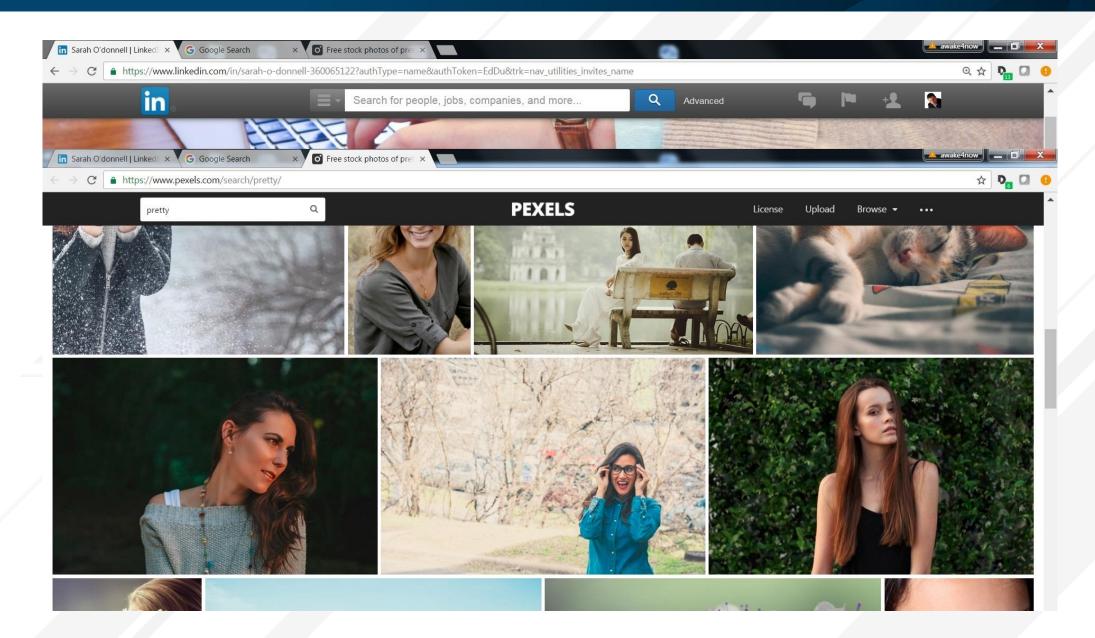
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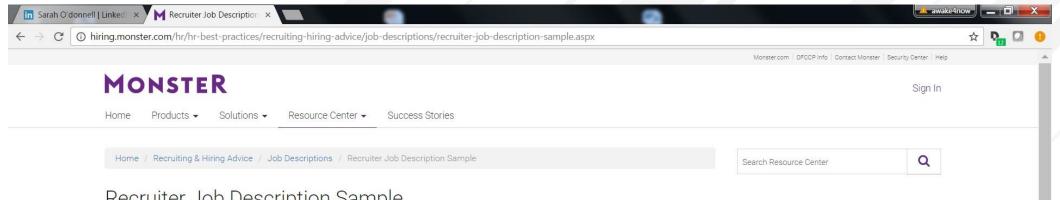


https://www.pexels.com/search/pretty/ ▼

 525×350 - Find the best free stock images about pretty. Download all photos and use them even for commercial projects.

Free stock photos of lady · Pexels





Recruiter Job Description Sample

This recruiter sample job description can assist in your creating a job application that will attract job candidates who are qualified for the job. Feel free to revise this job description to meet your specific job duties and job requirements.

Recruiter Job Responsibilities:

Achieves staffing objectives by recruiting and evaluating job candidates; advising managers; managing relocations and intern program.

Recruiter Job Duties:

Download our 2016 Small Business

Guide to Hiring

Learn More

- · Establishes recruiting requirements by studying organization plans and objectives; meeting with managers to discuss
- · Builds applicant sources by researching and contacting community services, colleges, employment agencies, recruiters, media, and internet sites; providing organization information, opportunities, and benefits; making presentations; maintaining rapport.













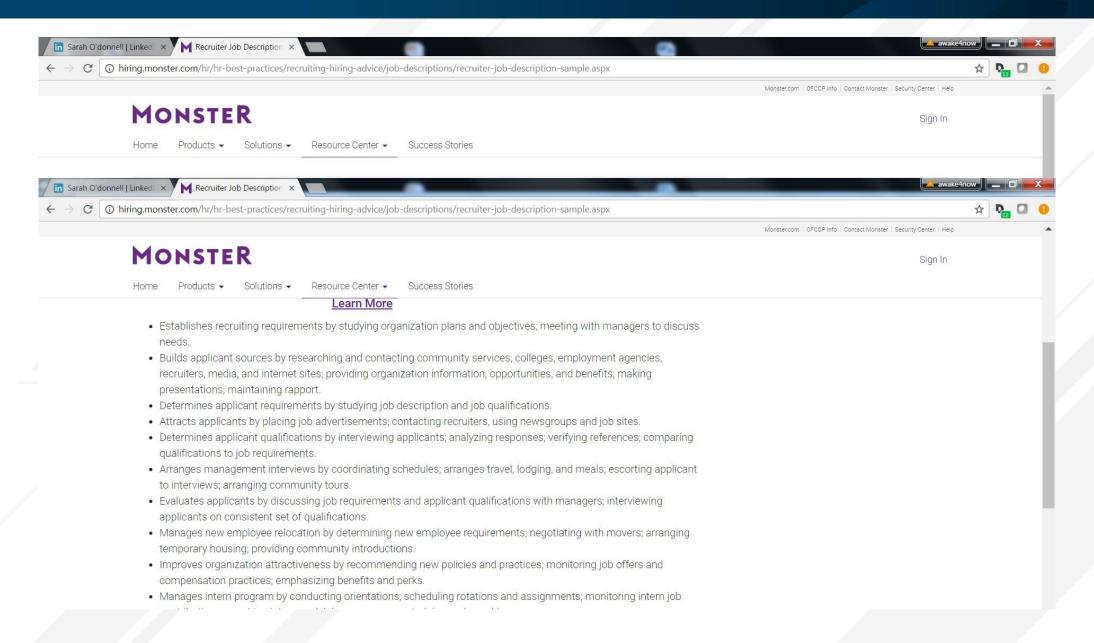














Ransomware Review

Maze Group ROI?

Maze Team official press release. June 22, 2020

Maze Team is working hard on collecting and analyzing the information about our clients and their work. We also analyzing the post attack state of our clients. How fast they were able to recover after the successful negotiations or without cooperation at all.

Today we would like to tell some words about the cost of non-cooperation and about our clients who were trying to recover all the information themselves. Looking ahead all those attempts were more close to suicide than to recovery.

So the company was attacked and the files were blocked and encrypted. What are the worst mistakes the company can made?

Maze Locker can't be decrypted without the help of Maze Team. A few companies we are not going to name were trying to decrypt the files with the help of side organizations. Those organizations are well known security companies. That happened at the end of 2019 and they are still waiting for a solution. As we know, compared to the first offer of Maze Team, those companies already paid two and a half times more money. One of those companies already spend four times more trying to decrypt the files themselves. And we guarantee that it would take them years to wait until decryption.

But encrypting files is not the main risk. If the company have chosen to make a long pause in its operations this is the company's right. But sometimes companies can't understand the risk of information leak, especially the private information. We are specializing in client's private information, financial information, databases, credit card data, NDA documents and all the company's researches.

Usually that kind of information leaks will lead for multimillion losses, fines and lawsuits. And don't forget about the lost profit and falling of the stock price.

As we know from the reports of our clients the average recovery costs are about \$60M. We have never asked for amounts even close to those.

According to our statistics the loss from lawsuits and fines varies from \$18M to \$47M. As we know from one of our clients, in one week he loosed \$12M while his files were in open access. For large companies the average lost if about \$50M-60M after the publication of private data. A few very large companies have lost from \$250M to \$350M.

While hiring the negotiators from the side, especially the those who work on government, and listening to what they tell you, try to think are they really interested in solving your problems or they are just thinking about their own profit and ambitions of the government agency they belong to. They can't minimize your loss or eliminate the data breach. You'll pay from your own pocket.



Ransomware: Customer Service

07/26/2020 00:24:03

Support Hello! Can I help you?





You

Hello? What do we need to do to get our data deleted from your servers and unlock our files?

07/27/2020 03:27:33

07/27/2020 07:43:08

Support Hello!



You have 30.000 infected and locked devices from different countries.

Our price is consists of two services, decryption software and deleting all downloaded data from our servers.

If you need both of them you have to pay 10.000.000\$ in Bitcoins, before the timer on main page will ends.

As a bonus we will provide you with the details about how we breach your security perimeter and give you recommendations about improving security measures to help your admins avoid such issues in future!

07/27/2020 07:43:35

Support

For sure we understand your worries about this deal, that's why we will decrypt two your random files for Free, just to prove that our decryptor is working properly!



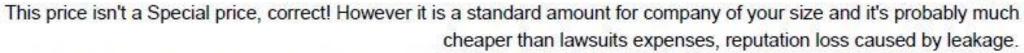


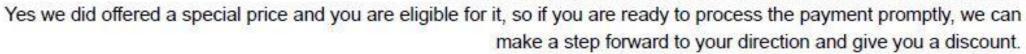
You 07/27/2020 17:47:17

So in your message that you left us, you mentioned a "very SPECIAL PRICE" if we reached out to you within 2 days, which we did. There's no way that \$10M is a "very SPECIAL PRICE" right?

07/27/2020 18:07:05













I appreciate the discount and kind words here, but to be honest, we were hoping for something that we actually 07/27/2020 18:31:25 have available cash for. I completely understand that this is a business for you, but right now I'm tasked with trying to keep our business afloat. In all honesty, \$8M puts us in a spot where we would need to double current revenue to keep our doors open. We were willing to get you \$3.7M potentially today if we could have found common ground. I don't mean to belittle you and your team's work here, I'm just trying to help prevent further layoffs on our side.

07/27/2020 18:48:03

Support



We appreciate your offer, but understand us too, this is the market and you have been offered an adequate price. unfortunately, the amount you offered is not enough to close our deal with you, we gave you 20% not because we are ready to bargain heavily, but because we see your business spirit and immediately gave you a good discount, we can offer 5% discount more and payment by installments. For example for \$4M you will get the Decryptor and after you will pay the rest amount, we will delete all the private Data.



07/28/2020 00:47:12

Here are the list of recommendations to avoid such a things in future:

Turn off local passwords

- Force end of administrators sessions



Update passwords every month!

- Check the granted privileges for users, to make them maximum reduced privileges and access only to exact applications.
 In most cases there would enough standard windows software like an Applocker.
 - Approve to run only necessaries applications ONLY.
- Don't count on the Anti-Virus, there is no one AV that really helps, they can be useful only in long-term infections, if hackers
 for some reasons didn't attack in short time.
 - Install Endpoint Detection and Response security (EDR) and teach the IT-admin to work with it.
- For huge companies we suggest at least 3 system administrators working 24 hours, maximum 4 admins working 3 shifts for 8 hours per day, that would be enough.







You

Thank you for all of this in a very timely manner

07/28/2020 00:51:17

Support

Support

07/28/2020 00:53:29

You are welcome it's a pleasure to work with professionals. If there will be any questions, please feel free to ask



07/28/2020 01:23:07

Please confirm that you wrote down all important information from this Chat, so we could clear it. However we will keep the chat room and will be here for your support if necessary







The Take Aways

Understand the Threat - Sodinokibi

Initial Access 9 techniques	Execution 10 techniques	Persistence 17 techniques	Privilege Escalation 12 techniques	Defense Evasion 32 techniques	Credential Access 13 techniques	Discovery 22 techniques	Lateral Movement 9 techniques	Collection 15 techniques	Command and Control 16 techniques	Exfiltration 8 techniques	Impact 13 techniques
Drive-by Compromise	Command and Scripting	Account Manipulation (0/2)	Abuse Elevation Control	Abuse Elevation Control	Brute Force (0/4)	Account Discovery (0/3)	Exploitation of Remote	Archive Collected Data (0/3)	Application Layer Protocol (0/4)	Automated Exfiltration	Account Access Removal
Exploit Public-Facing Application	Interpreter (0/7) Exploitation for Client Execution	BITS Jobs	Mechanism (0)(4) Access Token Manipulation (0)(5)	Mechanism (0/4) Access Token Manipulation (0/5)	Credentials from Password Stores (0/3)	Application Window Discovery	Services Internal Spearphishing	Audio Capture	Communication Through Removable Media	Data Transfer Size Limits	Data Destruction
External Remote Services	Inter-Process Communication man	Boot or Logon Autostart Execution (0/11)	Boot or Logon Autostart	BITS Jobs	Exploitation for Credential	Browser Bookmark Discovery	Lateral Tool Transfer	Automated Collection	Data Encoding (0/2)	Exfiltration Over Alternative Protocol (0/3)	Data Encrypted for Impact
Hardware Additions	Native API	Boot or Logon Initialization	Execution (0/11)	Deobfuscate/Decode Files or	Access	Domain Trust Discovery	Remote Service Session	Clipboard Data	Data Obfuscation (0/3)	Exfiltration Over C2	Data Manipulation (0/3)
Phishing (0/3)	Scheduled Task/Job (0/5)	Scripts (0/5)	Boot or Logon Initialization Scripts (0/5)	Information	Forced Authentication	File and Directory Discovery	Hijacking (0/2)	Data from Information Repositories (0/1)	Dynamic Resolution (0/3)	Channel	Defacement (0/2)
Replication Through	Shared Modules	Browser Extensions	Create or Modify System	Direct Volume Access	Input Capture (0/4)	Network Service Scanning	Remote Services (0/6)	Data from Local System	Encrypted Channel (0/2)	Exfiltration Over Other Network Medium (0/1)	Disk Wipe (0/2)
Removable Media Supply Chain Compromise (0/3)	Software Deployment Tools	Compromise Client Software Binary	Process (0/4) Event Triggered Execution (0/15)	Execution Guardrails (0/1) Exploitation for Defense Evasion	Man-in-the-Middle (0/1) Modify Authentication	Network Share Discovery Network Sniffing	Replication Through Removable Media	Data from Network Shared Drive	Fallback Channels	Exfiltration Over Physical Medium (0/1)	Endpoint Denial of Service (0/4)
Trusted Relationship	System Services (0/2)	Create Account (0/2)	Exploitation for Privilege	File and Directory Permissions	Process (0/3)	Password Policy Discovery	Software Deployment Tools	Data from Removable Media	Ingress Tool Transfer	Exfiltration Over Web	Inhibit System Recovery
Valid Accounts (0/3)	User Execution (0/2)	Create or Modify System Process (0/4)	Escalation	Modification (0/2)	Network Sniffing	Peripheral Device Discovery	Taint Shared Content	Data Staged (0/2)	Multi-Stage Channels	Service (0/2)	Network Denial of Service (0/2)
74114 7 (0/3)	Windows Management Instrumentation	Event Triggered Execution (0/15)	Group Policy Modification	Group Policy Modification	OS Credential Dumping (0/8)	Permission Groups Discovery	Use Alternate Authentication Material (0/2)	Email Collection (0/3)	Non-Application Layer Protocol	Scheduled Transfer	Resource Hijacking
		External Remote Services	Hijack Execution Flow (0/11)	Hide Artifacts (0/6)	Steal or Forge Kerberos Tickets (0/3)	Process Discovery	(V/L)	Input Capture (0/4)	Non-Standard Port		Service Stop
		Hijack Execution Flow (0/11)	Process Injection (0/11)	Hijack Execution Flow (0/11)	Steal Web Session Cookie	Query Registry		Man in the Browser	Protocol Tunneling		System Shutdown/Reboot
		Office Application Startup (0/6)	Scheduled Task/Job (0/5) Valid Accounts (0/2)	Impair Defenses (0/5) Indicator Removal on Host (0/6)	Two-Factor Authentication Interception	Remote System Discovery		Man-in-the-Middle (0/1)	Proxy (0/4)		
		Pre-OS Boot (0/3)	Valid Accounts (0/3)	Indirect Command Execution	Unsecured Credentials (0/5)	Software Discovery (0/1)	II .	Screen Capture	Remote Access Software		
		Scheduled Task/Job (0/5)	."	Masquerading (0/6)	orisecured crederidats (0/5)	System Information Discovery		Video Capture	Traffic Signaling (0/1)		
		Server Software Component (0/3)	1	Modify Authentication Process (n/a)		System Network Configuration Discovery			Web Service (0/3)		
		Traffic Signaling (0/1)	."	Modify Registry		System Network Connections					
		Valid Accounts (0/3)		Obfuscated Files or Information (0/5)		Discovery					
				Pre-OS Boot (0/3)		System Owner/User Discovery					
				Process Injection (0/11)		System Service Discovery System Time Discovery					
			Rogue Domain Controller	Rogue Domain Controller	Controller	Virtualization/Sandbox Evasion					
				Rootkit	_	VII COMPANY SURCISION (0/3)	M				
				Signed Binary Proxy Execution (0/10)							
				Signed Script Proxy Execution (0/1)	."						
				Subvert Trust Controls (0/4)							
				Template Injection	m .						
				Traffic Signaling (0/1) Trusted Developer Utilities Proxy							
				Execution (0/1)	1						
				Use Alternate Authentication Material _(0/2)	•						
				Valid Accounts (0/3)	."						
				Virtualization/Sandbox Evasion (0/3)	N .						
				XSL Script Processing							

Understand the Threat - Maze

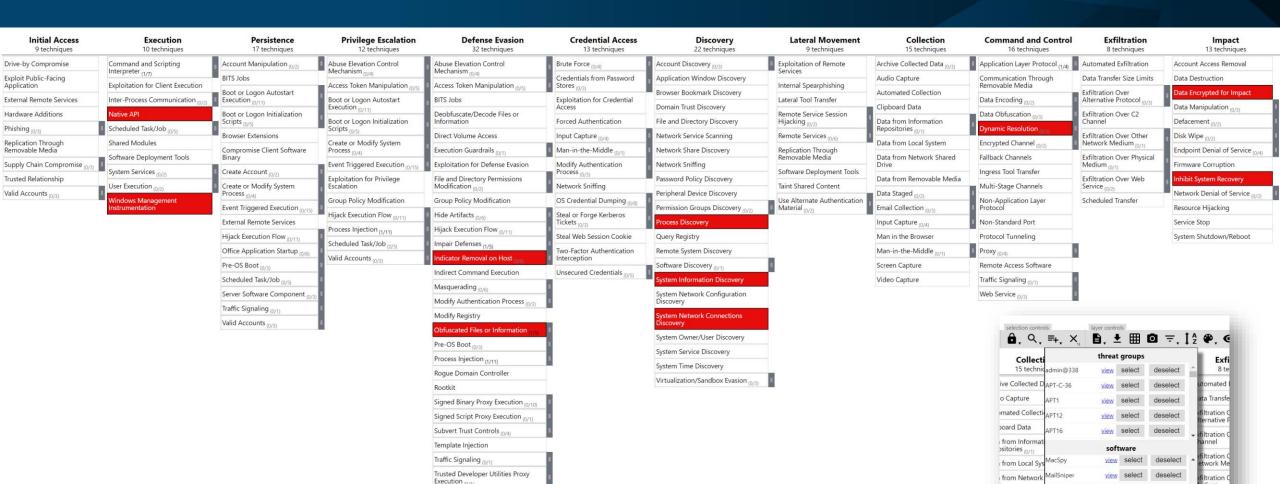
Use Alternate Authentication

Virtualization/Sandbox Evasion

Material ,

Valid Accounts 10/2

XSL Script Processing



from Remov

Staged 10/2

il Collection

t Capture (0/4)

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Developer Guidance application Isolation view select

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ntivirus/Antimalware view select deselect

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Understand the Threat - Maze

Initial Access	Execution	Persistence	Privilege Escalation	Defense Evasion	Credential Access	Discovery	Lateral Movement	Collection	Command And Control	Exfiltration	Impact
11 items	34 items	62 items	32 items	69 items	21 items	23 items	18 items	13 items	22 items	9 items	16 items
External Remote Services	Command-Line Interface	Valid Accounts	Valid Accounts	Valid Accounts	Credential Dumping	Account Discovery	Remote Desktop Protocol	Data from Network Shared	Commonly Used Port	Data Compressed	Data Encrypted for Impact
Valid Accounts	PowerShell	Modify Existing Service	Process Injection	Obfuscated Files or Information	Credentials in Files	Domain Trust Discovery	Remote File Copy	Drive	Remote File Copy	Exfiltration Over	Service Stop
Spearphishing Attachment	Scripting	New Service	New Service Access Token	Scripting	LLMNR/NBT-NS Poisoning and	File and Directory Discovery	Pass the Ticket	Data Staged Data from Local	Standard Application Layer	Alternative Protocol	Inhibit System Recovery
Drive-by	Service Execution	Create Account	Manipulation	Code Signing	Relay	Permission Groups Discovery	Windows Admin Shares	System	Protocol	Automated Exfiltration	Account Access
Compromise	Rundll32	.bash_profile and .bashrc	Accessibility Features	Disabling Security Tools	Brute Force	Remote System Discovery	Windows Remote	Audio Capture	Remote Access Tools	Data Encrypted	Removal
Exploit Public- Facing Application	User Execution	Accessibility	AppCert DLLs	Indirect Command Execution	Account Manipulation	Network Share Discovery	Management	Automated Collection	Standard	Data Transfer	Data Destruction
Hardware Additions	Windows Remote Management	Features Account	Applnit DLLs	Masquerading	Bash History	System Owner/User Discovery	AppleScript Application	Clipboard Data	Cryptographic Protocol	Size Limits Exfiltration Over	Defacement Disk Content Wipe
Replication	AppleScript	Manipulation	Application Shimming	Modify Registry	Credentials from Web Browsers	System Network	Deployment Software	Data from Information	Communication Through Removable	Command and	
Through Removable Media	CMSTP	AppCert DLLs	Bypass User	Process Injection	Credentials in	Configuration Discovery	Component	Repositories	Media	Exfiltration Over	Endpoint Denial of
Spearphishing	Compiled HTML File	Applnit DLLs	Account Control	Redundant Access	Registry	Application Window Discovery	Object Model and Distributed COM	Data from Removable	Connection Proxy	Other Network Medium	Service
Link	Component Object Model and	Application Shimming	DLL Search Order Hijacking	Deobfuscate/Decode Files or Information	Exploitation for Credential Access	Browser Bookmark	Exploitation of	Media	Custom Command and Control	Exfiltration Over	Firmware Corruption
Spearphishing via Service	Distributed COM	Authentication	Dylib Hijacking	File Deletion	Forced	Discovery	Remote Services	Email Collection	Protocol	Physical Medium	Network Denial of Service



I Mean, REALLY IN THE OPEN

Securing Passwords ... On National TV



Securing Passwords ... On National TV



Securing Passwords ... On National TV





Securing Passwords... During A Site Visit



Jeffrey Wong, the Hawaii Emergency Management Agency's current operations officer, shows computer screens monitoring hazards at the agency's headquarters in Honolulu on Friday. Hawaii is the first state to prepare the public for the possibility of a ballistic missile strike from North Korea. | AP

ASIA PACIFIC

Hawaii first U.S. state to prepare for 'unlikely' North Korea missile threat

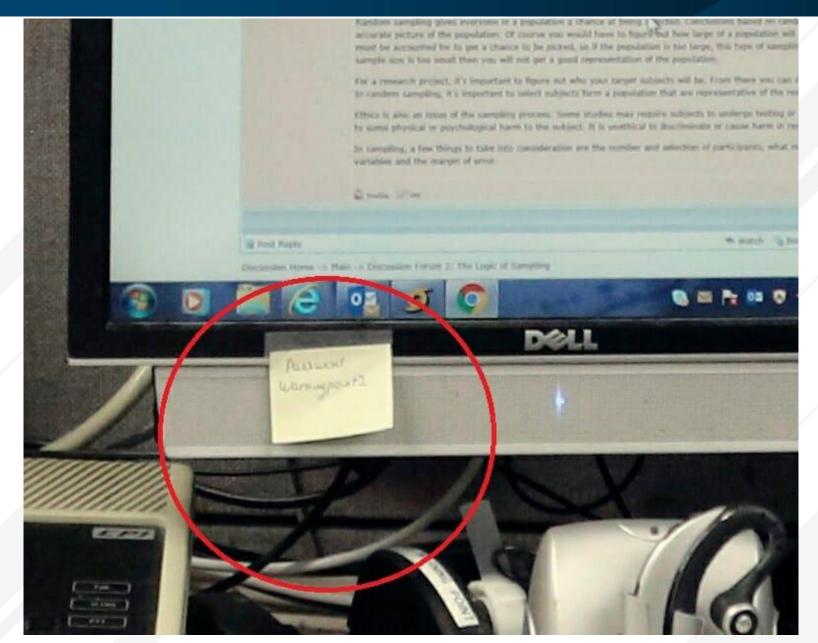
AP, STAFF REPORT

HONOLULU - Hawaii is the first state to prepare the public for the possibility of a ballistic missile strike from North Korea.

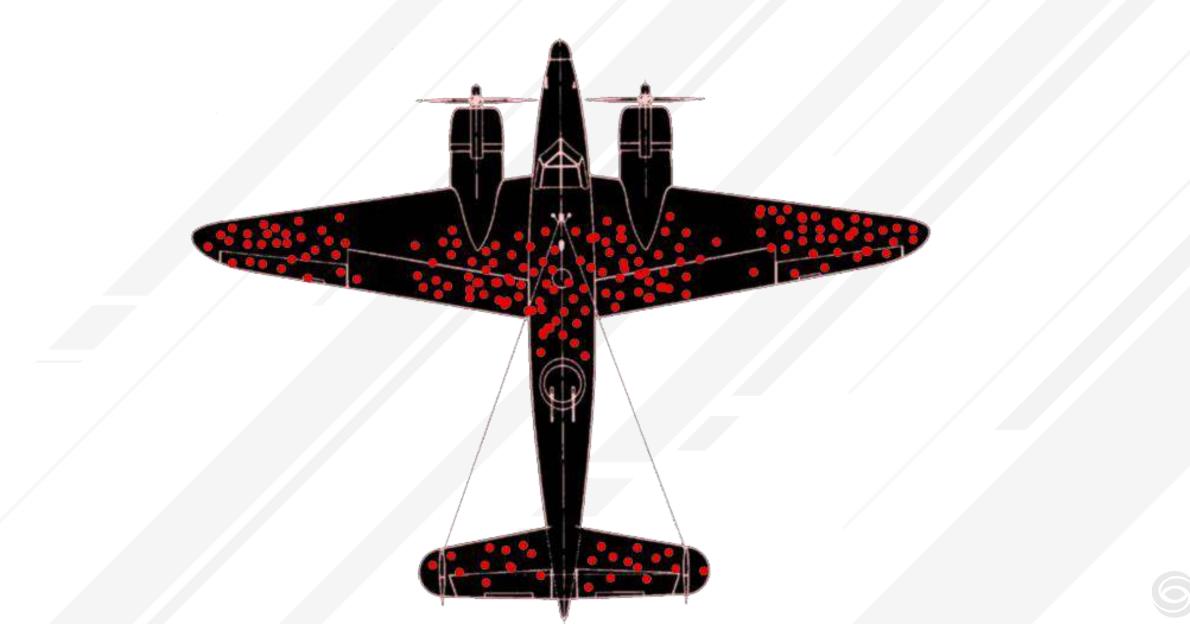
JUL 22, 2017 ARTICLE HISTORY



Securing Passwords... During A Site Visit



The Bias







Thank You Questions?