My Bug Bounty Hunting

Reconnaissance v1.0

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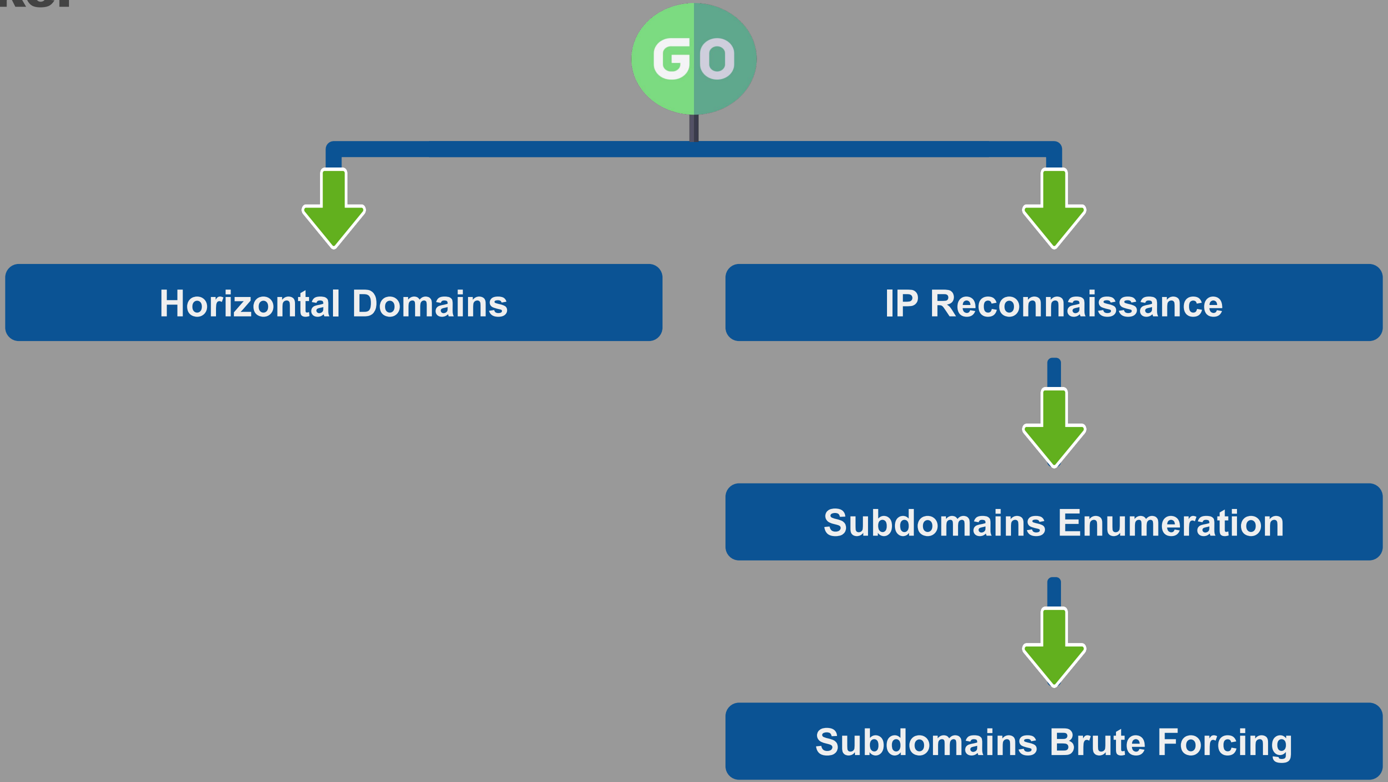
@0xAwali

attacker

Reconnaissance Workflow



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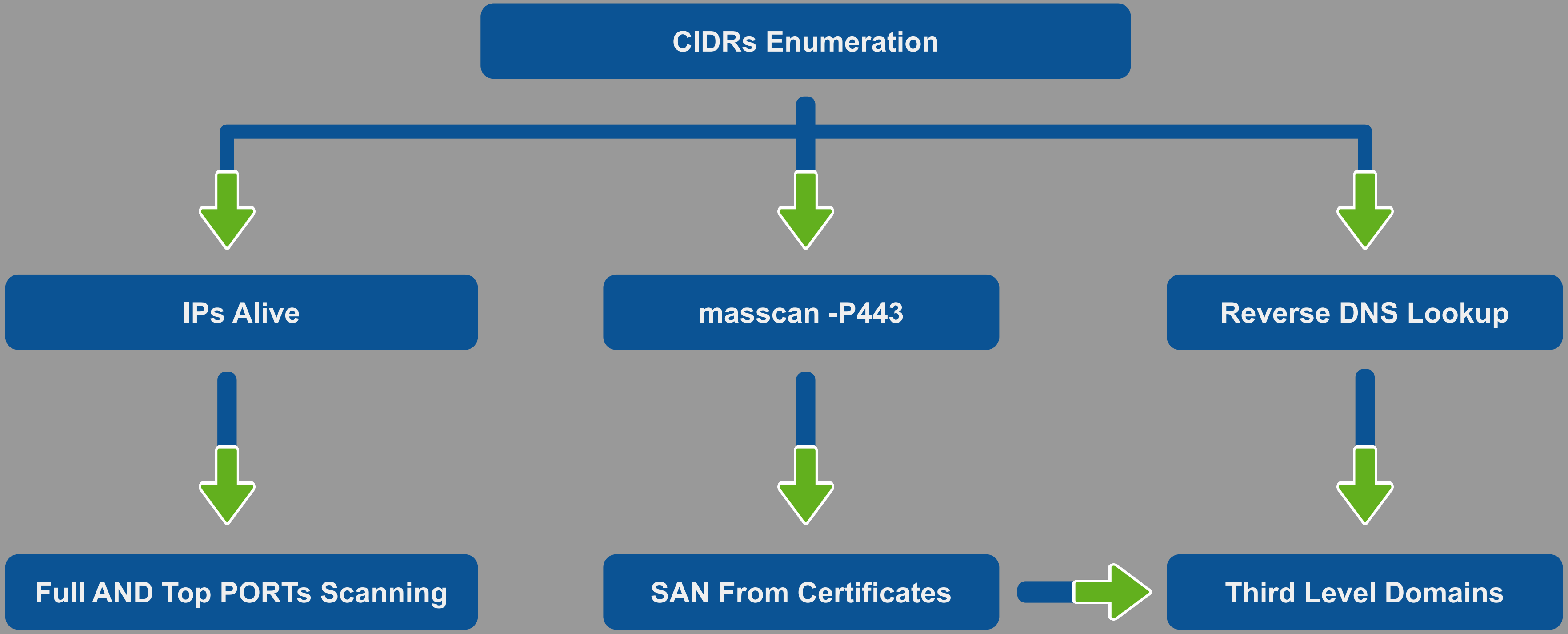
IP Reconnaissance



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My Methodology

Collect Information About Your Target By Using whois Command Line e.g.

```
root@mine:~#whois company.com
```

- Registrant Organization
- Registrant Email

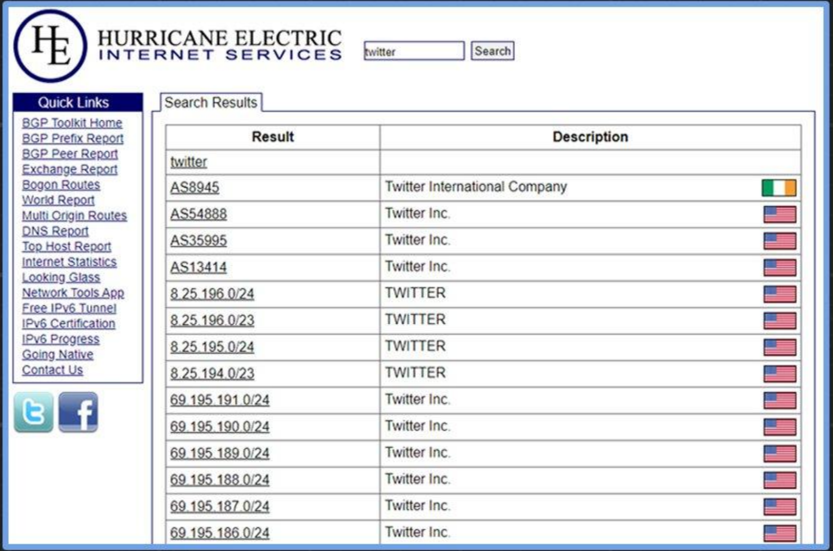
Expand the scope by one click with bgp.he.net

The first step of any bug bounty or pentest is to get the scope.

You can do it literally by one click with **bgp.he.net**.

Look for company's IP subnets using company name, IP, IPv6, domains.

Get a list of IP/IPv6 subnets that are ready for nmap/masscan scanning.



Result	Description
twitter	
AS8945	Twitter International Company 🇮🇪
AS54888	Twitter Inc. 🇺🇸
AS35995	Twitter Inc. 🇺🇸
AS13414	Twitter Inc. 🇺🇸
8.25.196.0/24	TWITTER 🇺🇸
8.25.196.0/23	TWITTER 🇺🇸
8.25.195.0/24	TWITTER 🇺🇸
8.25.194.0/23	TWITTER 🇺🇸
69.195.191.0/24	Twitter Inc. 🇺🇸
69.195.190.0/24	Twitter Inc. 🇺🇸
69.195.189.0/24	Twitter Inc. 🇺🇸
69.195.188.0/24	Twitter Inc. 🇺🇸
69.195.187.0/24	Twitter Inc. 🇺🇸
69.195.186.0/24	Twitter Inc. 🇺🇸

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My Methodology

Use Tools e.g. Asnlookup OR Service host.io To Get List Of CIDR

```
root@mine:~#python3 asnlookup.py -o Organization
```

" -o Organization " Name Of Organization To Enumerate

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My Methodology

Use Tools e.g. dnsx To Get Subdomains From Reverse DNS Lookups

```
root@mine:~#cat cidrs.txt | ./mapcidr -silent -o out.txt
root@mine:~#cat out.txt | sort -u | tee -a ips.txt
root@mine:~#cat ips.txt | dnsx -r resolvers.txt -ptr -silent -resp-only | tee -a subdomains.txt
```

" -r resovers.txt " Input File Of IPs DNS Resolver

" -ptr " Query PTR Record

" -silent " Silent Mode To Show Only Results

" -resp-only " Display Only Response Data

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My Methodology

Use Tools e.g. hakrevdns To Get Subdomains From Reverse DNS Lookups

```
root@mine:~#cat reverseDNS.sh
#!/usr/bin/env bash
for i in `cat cidrs.txt`
do
        prips $i | ./hakrevdns -d -r 1.1.1.1 | tee -a subdomains.txt
done
root@mine:~#./reverseDNS.sh
```

" prips I.P.v.4/cidr " Print All Of The IP Addresses

" -r 1.1.1.1 " IP Of The DNS Resolver

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My Methodology

Use Tools e.g. masscan To Scan What IPs Have HTTPS Certificate

```
root@mine:~#masscan -iL ips.txt --source-port 53 --http-user-agent "Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/77" -p 443 -oL httpservice443alive.txt
```

" -iL input.txt " Reading Input File

" --source-port 53 " Use A Custom Source Port

" --http-user-agent "Mozilla" " Custom User Agent

" -oL httpservice443alive.txt " Output File

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My Methodology

Use Tools e.g. SANextract To Get Subject Alternative Names

```
root@mine:~#cat  httpservice443alive.txt | ./SANextract -timeout 30s | tee -a subdomains.txt
```

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Extract Third Level Domains From List Of Subdomains

● Mine

```
#!/usr/bin/env python3
import os
import sys
import argparse
parser = argparse.ArgumentParser()
parser.add_argument( "-f","--file",help="file that contains list of subdomains" )
parser.parse_args()
args = parser.parse_args()
if args.file:
        if os.path.isfile(args.file):
                list_of_subdomains = open( args.file, 'r' )
                file_of_subdomains = list_of_subdomains.read().split('\n')
                list_of_subdomains.close()
        else:
                parser.error( '%s file not found' % args.file )
for subdomain in file_of_subdomains :
   try :
        if subdomain.count(".") == 2 :
             print(subdomain)
        else :
             third_level_domain = subdomain.split(".")[-3] + '.' + subdomain.split(".")[-2] + '.' + subdomain.split(".")[-1]
             print(third_level_domain)
   except :
        sys.exit()
```

Steps to produce :-

1 - Open Your Terminal
2 - Write This Command

```
python3 thirdlevel.py subdomains.txt
```

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My Methodology

Try To Discover What IPs Are Up By Using Tools e.g. nmap
To Minimize Time Of Full PORTs Scanning

```
root@mine:~#nmap -sP -PE -PP -PS21,22,23,25,80,113,31339 -PA80,113,443,10042 --source-port 53 -T4 -iL ips.txt
```

" -sP " Skip Port Scan

" -PE " Send An ICMP echo Request

" -PP " Send Timestamp And Address Mask

" --source-port 53 " Use A Custom Source Port

" -PSport -PAanotherport " Sends An Empty TCP Packet With The SYN OR TCP ACK Flag Set

" -iL file.txt " Reading The Input From file.txt

" -T4 " Aggressive Mode Speeds Scans

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My Methodology

Full PORTs Scanning With SYN Scan

```
root@mine:~#nmap -sSV --version-intensity 9 --min-parallelism 64 --min-hostgroup 16 --max-hostgroup 64 --max-retries 3 --min-rate 175 --max-rate 300 -Pn -n --source-port 53 --mtu 24 --data-length 25 --script-args http.useragent="Mozilla/5.0" --max-scan-delay 10 -p- -iL ips.txt -oA output
```

" -sSV --version-intensity 9 " SYN Scan AND Services Detection Scan

" --min-parallelism 64 " 64 Parallel Tasks

" --max-retries 3 " Number Of Retry Probing Port

" --min-hostgroup 16 --max-hostgroup 64 " Scan Minimum 16 AND Maximum 64 Hosts At One Time

" --mtu 24 " Specific MTU To The Packet

" --data-length 25 " Append Random Data

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My Methodology

Full PORTs Scanning With SYN Scan II

```
root@mine:~#nmap -sSV --version-intensity 9 -PN -n --max-rtt-timeout 1000ms --min-parallelism 1000
--max-retries 3 --source-port 53 --mtu 24 --data-length 25 --script-args http.useragent="Mozilla/5.0"
-p- -iL ips.txt -oA output
```

" -sSV --version-intensity 9 " SYN Scan AND Services Detection Scan

" --min-parallelism 1000 " 1000 Parallel Tasks

" --max-retries 3 " Number Of Retry Probing Port

" --max-rtt-timeout 1000ms " Wait 1000 ms Before Timing Out

" --mtu 24 " Specific MTU To The Packet

" --data-length 25 " Append Random Data

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My Methodology

Top 3674 Ports Scanning With SYN Scan

```
root@mine:~#nmap -sSV --version-intensity 9 --min-parallelism 64 --min-hostgroup 16  --mtu 24
--max-hostgroup 64 --max-retries 3 --min-rate 175 --max-rate 300 -Pn -n --source-port 53 --data-length 25
--script-args http.useragent="Mozilla/5.0" --max-scan-delay 10 --top-ports 3674 -iL ips.txt -oA output
```

" --min-rate 175 --max-rate 300 " Nmap will Send Rate Above 175 AND Less 300 packets In Second

" -Pn " Treat All Hosts Are Up

" -n " Never Do DNS Resolution

" --script-args http.useragent="Mozilla/5.0" " Change Default User Agent Header To Mozilla/5.0

" --max-scan-delay 10 " Time Between Probes

" -oA output " Output Files nmap , xml And gnmap

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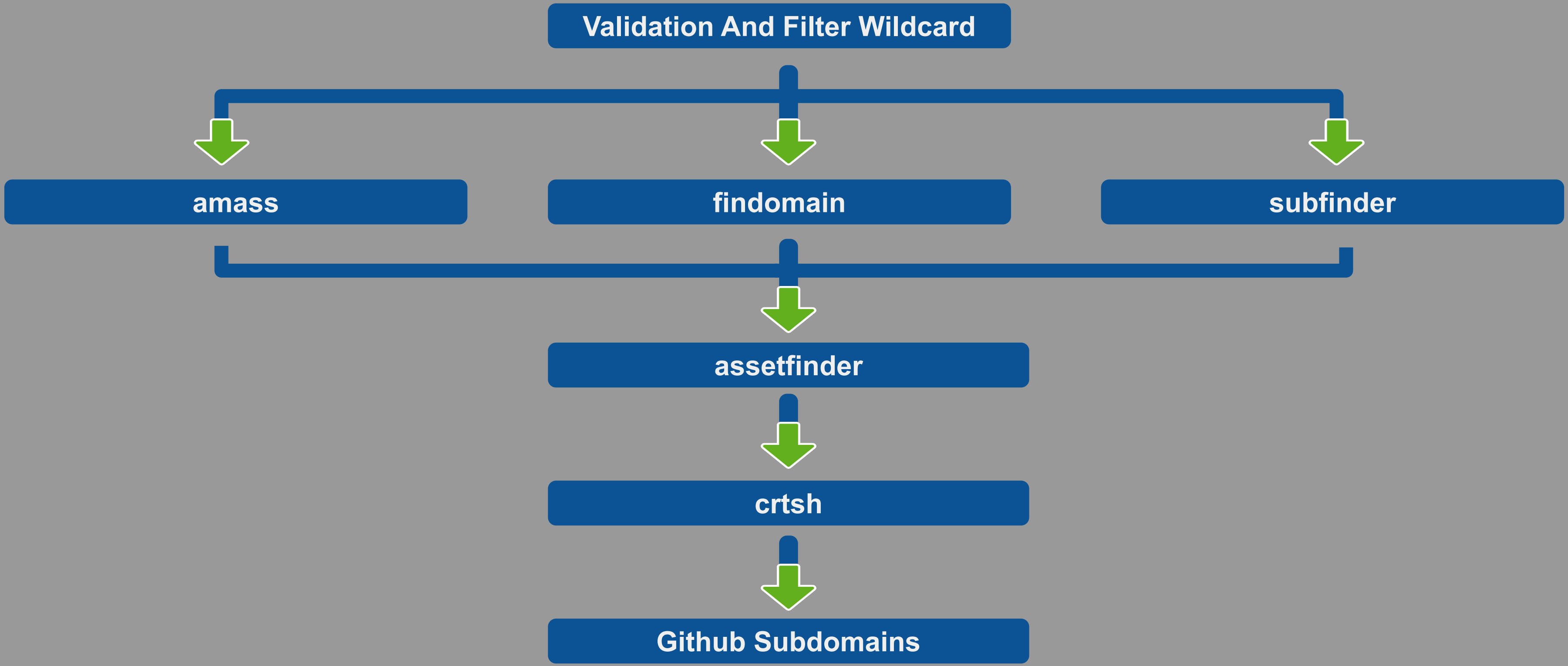
Subdomains Enumeration



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My Methodology

Try To Valid The Third Level Subdomains List By Using dig AND Your Mind

- Tweet

Steps to produce :-

1 - Open Your Terminal
2 - Write This Command

```
dig nonexist.api.comapny.com
```

3 - If It Is Not Resolvable " NXDOMAIN " That Means :-
- api.company.com Is Valid Subdomain
- There Are Other Subdomains Under api.comapny.com e.g. exist.api.comapny.com

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My Methodology

Try To Filter The Wildcard Third Level Subdomains List By Using dig AND Your Mind

- Blog

Steps to produce :-

1 - Open Your Terminal
2 - Write This Command

```
dig nonexist.api.comapny.com
dig '*.api.company.com'
```

3 - If The Two Are Resolvable To Same IP That Means :-
- api.company.com Is Wildcard Subdomain

4 - Delete This Subdomain From Third Level Subdomains List

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My Methodology

Use Subfinder To Enumerate List Of Third Level Subdomains

```
root@mine:~#subfinder -dL list-of-thirdlevel.txt -config config.yaml -all -timeout 90 -silent -o out
```

" -dL list-of-thirdlevel.txt " List Of Third Level Subdomains e.g. corp.company.com

" -config config.yaml " Configuration File

" -all " Use All Sources For Enumeration

" -timeout 90 " Wait 90 Second Before Timing Out

" -silent " Show Only Subdomains In Output

" -o out " File To Write Output

attacker

My Methodology

Use findomain To Enumerate List Of Third Level Subdomains

```
root@mine:~#findomain --config file.ini --ua list.txt -f list-of-thirdlevel.txt --http-timeout 90 --quiet -o output.txt
```

" --config file.ini --ua list.txt " Configuration File And File Containing User Agents Values

" -f list-of-thirdlevel.txt " List Of Third Level Subdomains e.g. corp.company.com

" --http-timeout 90 " Wait 90 Second Before Timing Out

" --quiet " Show Only Subdomains In Output

" -o output.txt " File To Write Output

attacker

My Methodology

Use amass To Enumerate List Of Third Level Subdomains

```
root@mine:~#amass enum -passive -config file.ini -df list-of-thirdlevel.txt -timeout 90 -silent -o output.txt
```

" enum -passive " Passively Searching For Subdomains

" -config file.ini " Configuration File

" -timeout 90 " Wait 90 Second Before Timing Out

" -df list-of-thirdlevel.txt " List Of Third Level Subdomains e.g. corp.company.com

" -silent " Show Only Subdomains In Output

" -o output.txt " File To Write Output

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My Methodology

Use assetfinder To Enumerate List Of Specific Fourth Level Subdomains

```
root@mine:~#cat analysis-output.txt | assetfinder --subs-only | tee -a subdomains.txt
```

" --subs-only " Display Only Subdomains Of Search Domain

attacker

My Methodology

Use crtsh To Enumerate List Of Specific Fourth Level Subdomains

```
root@mine:~#cat crtsh-fourthlevel-enumeration.sh
#!/usr/bin/env bash
for i in `cat analysis-output.txt`
do
        crtsh -o -q $i | tee -a subdomains.txt
done
root@mine:~#./crtsh-fourthlevel-enumeration.sh
```

" -o " Display Only Subdomains

" -q " Specific Third Level Domain To Search

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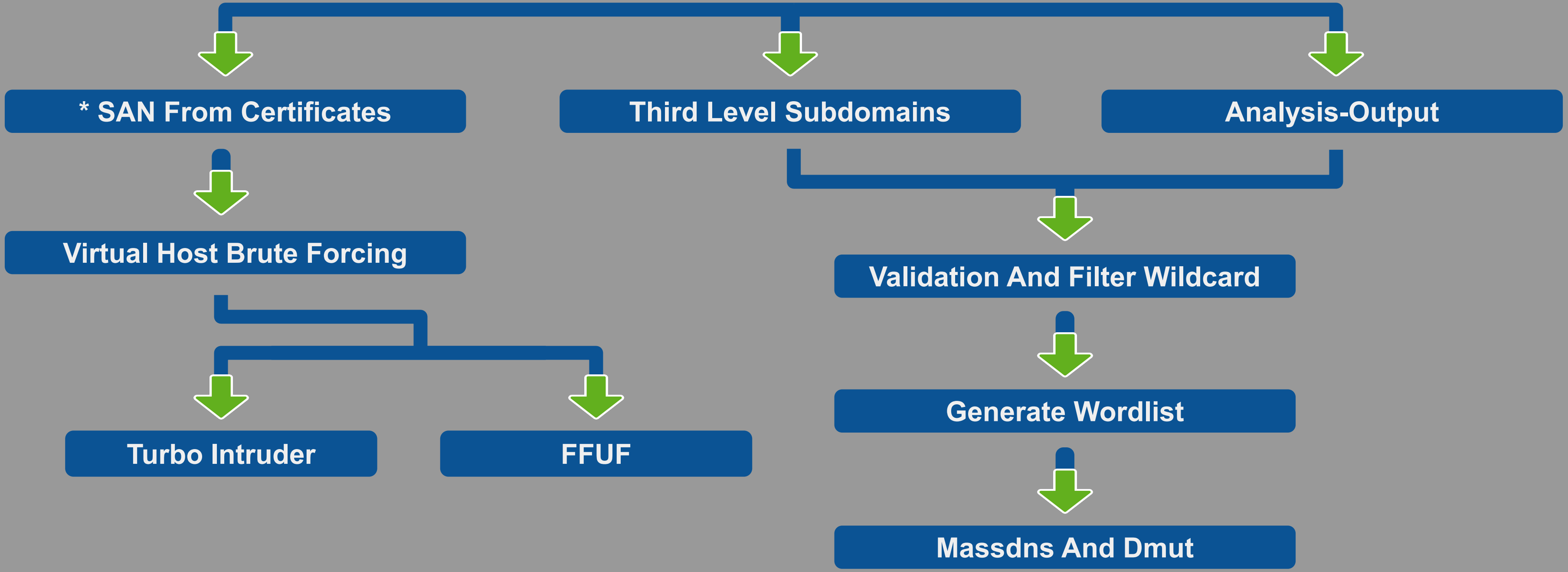
My Methodology

Use github-subdomains.py To Enumerate List Of Specific Fourth Level Subdomains

```
root@mine:~#cat github-fourthlevel-enumeration.sh
#!/usr/bin/env bash
for i in `cat analysis-output.txt`
do
        python3 github-subdomains.py -d $i | tee -a subdomains.txt
done
root@mine:~#./github-fourthlevel-enumeration.sh
```

" -d " Fourth Level Subdomain For Search

Subdomains Brute Forcing



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Analysis Output Of IPv4-Reconnaissance AND Subdomains-Enumeration

● Mine

```
root@mine:~#cat list-of-subdomains.txt
api.corp.company.com
api.test.company.com
dev.api.company.com
test.api.company.com
ini.api.company.com
```

Steps to produce :-

1 - Open list-of-subdomains.txt With Text Editor
2 - Grep A Specific Pattern e.g.

```
api.FUZZ.comapny.com
FUZZ.api.comapny.com
```

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Extract Third Level Domains From Output Of Subdomains Enumeration

● Mine

```
#!/usr/bin/env python3
import os
import sys
import argparse
parser = argparse.ArgumentParser()
parser.add_argument( "-f","--file",help="file that contains list of subdomains" )
parser.parse_args()
args = parser.parse_args()
if args.file:
        if os.path.isfile(args.file):
                list_of_subdomains = open( args.file, 'r' )
                file_of_subdomains = list_of_subdomains.read().split('\n')
                list_of_subdomains.close()
        else:
                parser.error( '%s file not found' % args.file )
for subdomain in file_of_subdomains :
  try :
        if subdomain.count(".") == 2 :
             print(subdomain)
        else :
             third_level_domain = subdomain.split(".")[-3] + '.' + subdomain.split(".")[-2] + '.' + subdomain.split(".")[-1]
             print(third_level_domain)
  except :
        sys.exit()
```

Steps to produce :-

1 - Open Your Terminal
2 - Write This Command

```
python3 thirdlevel.py output.txt
```

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My Methodology

Try To Valid The Third Level Subdomains List By Using dig AND Your Mind

- Tweet

Steps to produce :-

1 - Open Your Terminal
2 - Write This Command

```
dig nonexist.api.comapny.com
```

3 - If It Is Not Resolvable " NXDOMAIN " That Means :-

- api.company.com Is Valid Subdomain
- There Are Other Subdomains Under api.comapny.com
  e.g. exist.api.comapny.com

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My Methodology

Try To Filter The Wildcard Third Level Subdomains List By Using dig AND Your Mind

- Blog

Steps to produce :-

1 - Open Your Terminal
2 - Write This Command

```
dig nonexist.api.comapny.com
dig '*.api.company.com'
```

3 - If The Two Are Resolvable To Same IP That Means :-
  - api.company.com Is Wildcard Subdomain

4 - Delete This Subdomain From Third Level Subdomains List

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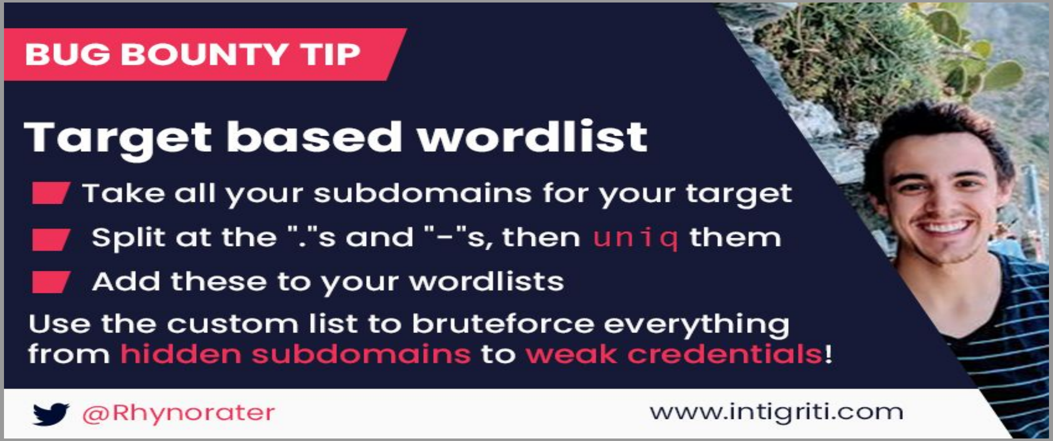
My Methodology

Generate Your Wordlist e.g.

```
cat Subdomains.txt | sed 's/\./\n/g' | sort -u | tee -a words.txt
```

- Tweet



BUG BOUNTY TIP

Target based wordlist

- Take all your subdomains for your target
- Split at the "."s and "-"s, then uniq them
- Add these to your wordlists

Use the custom list to bruteforce everything from hidden subdomains to weak credentials!

@Rhynorater www.intigriti.com

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Generate Wordlist Of Subdomains To Resolve Based On Analysis Output

- Mine

```
root@mine:~#cat geneaaret-wordlist.sh
#!/usr/bin/env bash
for i in `cat analysis-output..txt`
do
        for j in `cat words.txt`
        do
                echo "$i" | sed "s/FUZZ/$j/g" | tee -a $i.txt
        done
done
root@mine:~#./geneaaret-wordlist.sh
```

Steps to produce :-

1 - Open Your Terminal
2 - Write This Command

```
./generate-wordlist.sh
```

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Generate Wordlist Of Subdomains To Resolve Based On Words Of Domains

- Mine

```
root@mine:~#cat geneaeret-wordlist.sh
#!/usr/bin/env bash
for i in `cat thirdlevel-subdomains-list.txt`
do
        for j in `cat words.txt`
        do
                echo "$j.$i" | tee -a $i.txt
        done
done
root@mine:~#./geneaeret-wordlist.sh
```

Steps to produce :-

1 - Open Your Terminal
2 - Write This Command
```
./generate-wordlist.sh
```

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My Methodology

Use Tools e.g. subgen To Generate Wordlist Based On Names Of Subdomains

```
root@mine:~#cat genearet-wordlist.sh
#!/usr/bin/env bash
for i in `cat thirdlevel-subdomains-list.txt`
do
        cat common-words-e.g.-corp-test-dev-internal-etc.txt | subgen -d "$i" | tee -a $i.txt
done
root@mine:~#./genearet-wordlist.sh
```

" -d "api.company.com" " Name Of Third Level Subdomains To Generate Similar Pattern

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My Methodology

Use Tools e.g. dnsvalidator OR fresh.py With massdns To Resolve These Subdomains To IPs

```
root@mine:~#cat resolve.sh
#!/usr/bin/env bash
python3 fresh.py -o checking.txt
dnsvalidator -tL checking.txt -threads 20 -o resolvers.txt
./bin/massdns -r resolvers.txt -t A -o S -w output.txt subdomains-to-resolve.txt
root@mine:~#./resolve.sh
```

" -r resolvers.txt " List Of DNS Servers IPs

" -o S -w output.txt " Normal Output Into Text File

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My Methodology

Use Tools e.g. dumt To Perform Permutations And Mutations etc And Brute Force The Result

```
root@mine:~#dmut --workers 100 -d common-words.txt --dns-retries 5 --dnsFile resolvers.txt
            --dns-errorLimit 50 --dns-timeout 3000 --show-stats --output results.txt
```

" -d words.txt " Common Words To Permute etc

" --dns-retries 5 " Try 5 Times In Failed Queries

" --dns-errorLimit 50 " 50 Errors To Disable DNS

" --dns-timeout 3000 " Wait 3 Second To Time Out

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My Methodology

Use Tools e.g. SANextract To Get * In Subject Alternative Names

```
root@mine:~#cat  httpservice443alive.txt | ./SANextract -timeout 30s -json | tee -a vhosts.json
root@mine:~#cat  vhosts.json | grep "*" | tee -a virtual-host-scanning.json
```

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My Methodology

FUZZ The Host Header e.g. Host: FUZZ.company.com To Get Internal Hosts By Using FFUF OR Turbo Intruder

- Slides
- Tweet

```
GET / HTTP/1.1
Host: FUZZ.company.com
User-Agent: Mozilla/5.0
Referer: https://previous.com/path
Origin: https://www.company.com
```

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My Methodology

```
root@mine:~#ffuf -u https://I.P.v.4/ -H "Host: FUZZ.company.com" -w wordlist.txt  -c -mc 200
            -fr "Your-Regex" -timeout 30 -s -replay-proxy http://localhost:8080
```

" -url URL " URL Of Target e.g. https://www.company.com

" -H "Host: FUZZ.company.com" " Fuzz Host Header To Get Subdomains Under company.com

" -w wordlist.txt " Path To The Wordlist

" -c " Colorize Output

" -mc 200 " Match 200 OK HTTP status code

" -fr "Regex" " Filter This Pattern

" -timeout 30 " Wait 30 Second Before Timing Out

" -s " Silent Mode

" -replay-proxy http://localhost:8080 " Send Only Unfiltered Requests Through A Replay Proxy

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FUZZ Host Header By Using Turbo Intruder

- Mine

```
root@mine:~#cat file-of-turbo-intruder.py
def queueRequests(target, wordlists):
    engine = RequestEngine(endpoint=target.endpoint,
                           concurrentConnections=100,
                           requestsPerConnection=100,
                           pipeline=True
                           )
    for word in open('/path/wordlist'):
        engine.queue(target.req, word.rstrip())
def handleResponse(req, interesting):
    if 'HTTP' in req.response:
        table.add(req)
```

Steps to produce :-

1 - Sent Request To Turbo Intruder
2 - Add %s In Host Header e.g. Host: %s.company.com
3 - Click Attack
4 - Filter Your Result

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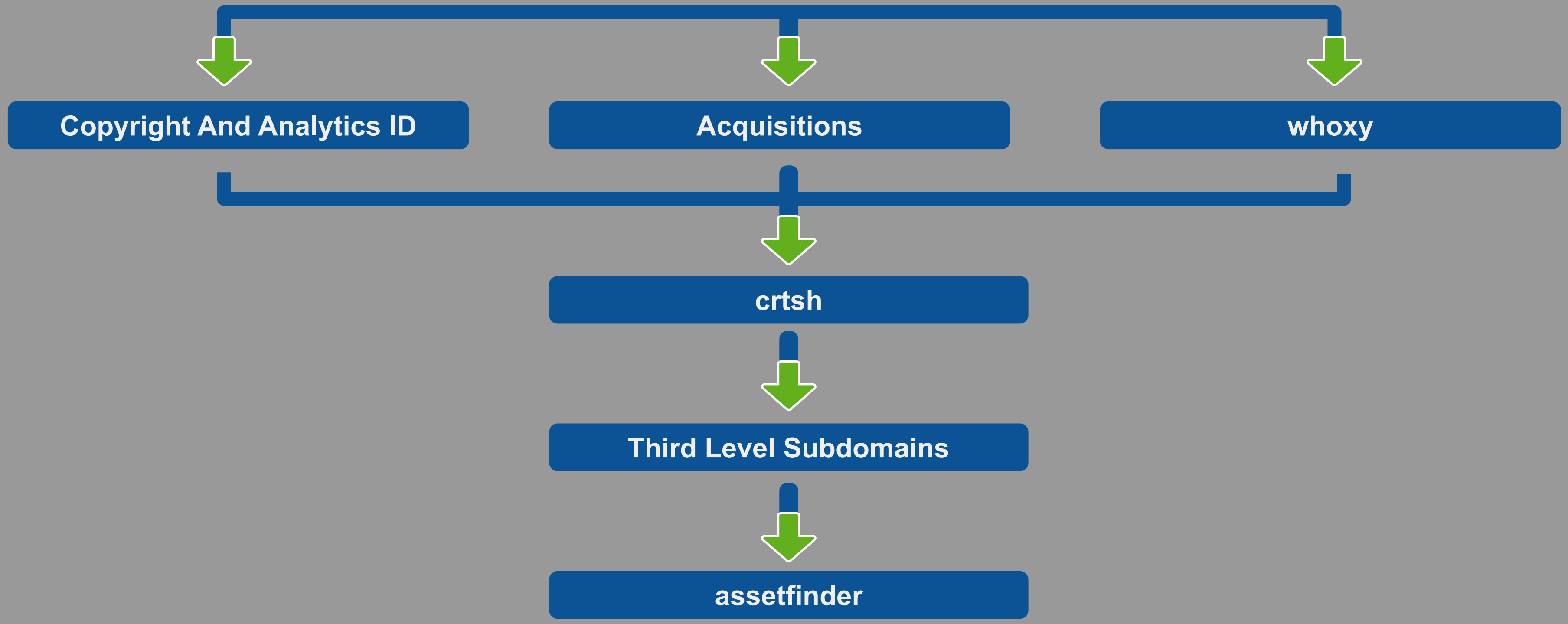
Horizontal Domains



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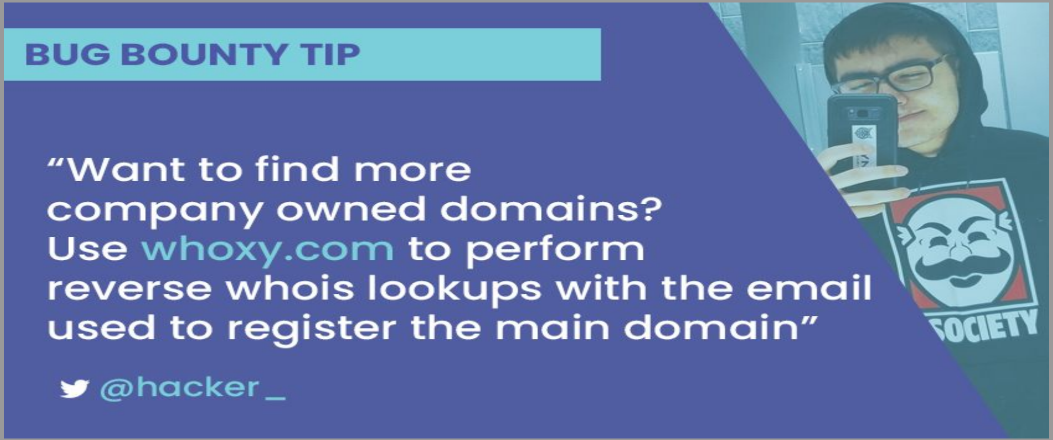
My Methodology

Enumerate Related Domains By Using Registrant Email

```
python3 domain-finder.py --key API-Key -d company.com
```

- Tweet
- Tweet



BUG BOUNTY TIP

"Want to find more company owned domains? Use whoxy.com to perform reverse whois lookups with the email used to register the main domain"

@hacker_

attacker

My Methodology

Google

site:acquiredby.co company

Google Search

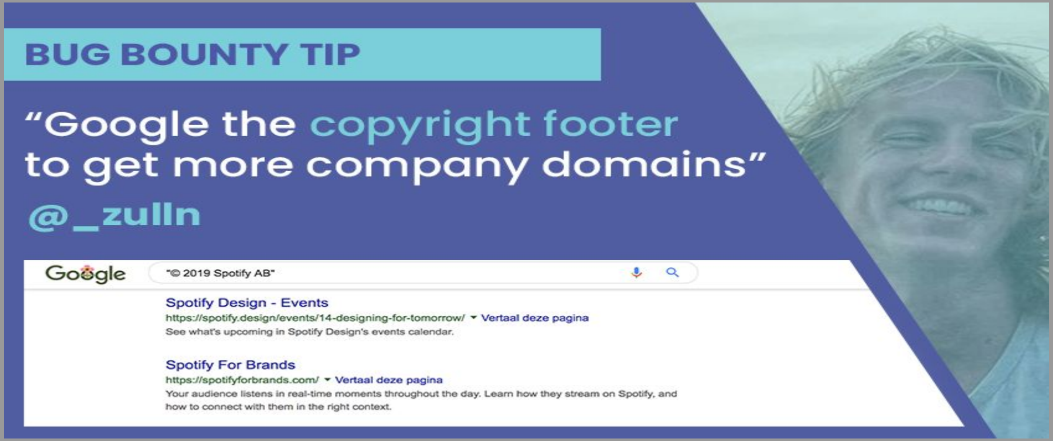
I’m Feeling Lucky

attacker

My Methodology

Enumerate Related Domains
By Using Copyright Mark

- Tweet


BUG BOUNTY TIP

"Google the copyright footer to get more company domains"

@_zulln

"© 2019 Spotify AB"

Spotify Design - Events
https://spotify.design/events/14-designing-for-tomorrow/ ▾ Vertaal deze pagina
See what's upcoming in Spotify Design's events calendar.

Spotify For Brands
https://spotifyforbrands.com/ ▾ Vertaal deze pagina
Your audience listens in real-time moments throughout the day. Learn how they stream on Spotify, and how to connect with them in the right context.

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My Methodology

Google

"© 2020 company" "© company 2020"

Google Search

I’m Feeling Lucky

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My Methodology

Try To Enumerate Related Domains
By Using Google Analytics ID

- Tweet

Steps to produce :-

1 - Open Your Terminal
2 - Write This Command

```
curl -s https://www.company.com | grep 'ga("create"'
```

3 - Copy Google Analytics ID e.g. UA-*******-**
4 - Visit This URL

```
site-overview.com/website-report-search/analytics-account-id/ID
```

5 - Change Google Analytics ID Without UA- To ID

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My Methodology

Reverse Analytics Search

company.com OR UA-11040216

Search Analytics ID or Domain

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My Methodology

Use crtsh To Enumerate Subdomains

```
root@mine:~#cat crtsh-subdomains-enumeration.sh
#!/usr/bin/env bash
for i in `cat related-domains-output.txt`
do
        crtsh -o -q $i | tee -a related-subdomains.txt
done
root@mine:~#./crtsh-subdomains-enumeration.sh
```

" -o " Display Only Subdomains

" -q " Specific Related Domain To Search

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Extract Third Level Domains From List Of Subdomains

● Mine

```
#!/usr/bin/env python3
import os
import sys
import argparse
parser = argparse.ArgumentParser()
parser.add_argument( "-f","--file",help="file that contains list of subdomains" )
parser.parse_args()
args = parser.parse_args()
if args.file:
        if os.path.isfile(args.file):
                list_of_subdomains = open( args.file, 'r' )
                file_of_subdomains = list_of_subdomains.read().split('\n')
                list_of_subdomains.close()
        else:
                parser.error( '%s file not found' % args.file )
for subdomain in file_of_subdomains :
  try :
        if subdomain.count(".") == 2 :
             print(subdomain)
        else :
             third_level_domain = subdomain.split(".")[-3] + '.' + subdomain.split(".")[-2] + '.' + subdomain.split(".")[-1]
             print(third_level_domain)
  except :
        sys.exit()
```

Steps to produce :-

1 - Open Your Terminal
2 - Write This Command

```
python3 thirdlevel.py related-subdomains.txt
```

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My Methodology

Use assetfinder To Enumerate List Of Third Level Subdomains

```
root@mine:~#cat third-level-subdomains.txt | assetfinder --subs-only | tee -a all-subdomains.txt
```

" --subs-only " Display Only Subdomains Of Search Domain

Thank You

Mahmoud M. Awali

@0xAwali