KALASALINGAM
ACADEMY OF RESEARCH & EDUCATION
(DEEMED TO BE UNIVERSITY)
Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A" Grade

SCHOOL OF COMPUTING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

LAB RECORD NOTE BOOK

(Academic Year 2021 – 2022/EVEN Semester)

INFORMATION SECURITY FUNDAMENTALS LAB (213CSE1302)

Name of the Student :	**Register No :**
Branch :	**Year :**
Semester :	**Section :**

Name of the Course Teacher	Dr. N. C. Brintha, Associate Professor / CSE

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

BONAFIDE CERTIFICATE

Bonafide record of work done by _____ of **COMPUTER SCIENCE AND ENGINEERING** department in **INFORMATION SECURITY FUNDAMENTALS LAB (213CSE1302)** during even/odd semester in academic year 2021 - 2022.

Staff In-charge **Head of the Department**

Submitted to the practical Examination held at Kalasalingam Academy of Research and Education, Anandnagar, Krishnankoil on _____

_____

REGISTER NUMBER

Internal Examiner **External Examiner**

EXPERIMENT EVALUATION SUMMARY

Name: **Reg No:**

Class:

Experiments			
S. No	**Topic**	**Marks**	**Signature**
1	Encryption/Decryption process using VeraCrypt		
2	Hide and Unhide Sensitive Information using Steghide		
3	Cryptography using Cryptol-online		
4	Hashing data using QuickHash-GUI		
5	Cryptographic attack using Hashcat		
6	Operations Security using ClamWin		
7	Vulnerability analysis using Legion		
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10	Secure Network Administration using Nmap		
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13	Log Management using Logwatch		
14	Logs Management in Linux		
15	Antivirus installations, configuration, and management using ClamAV		

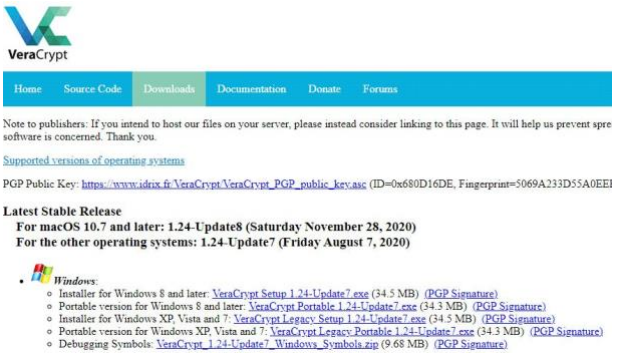
Ex. No. 1	Encryption/Decryption process using VeraCrypt

Aim:

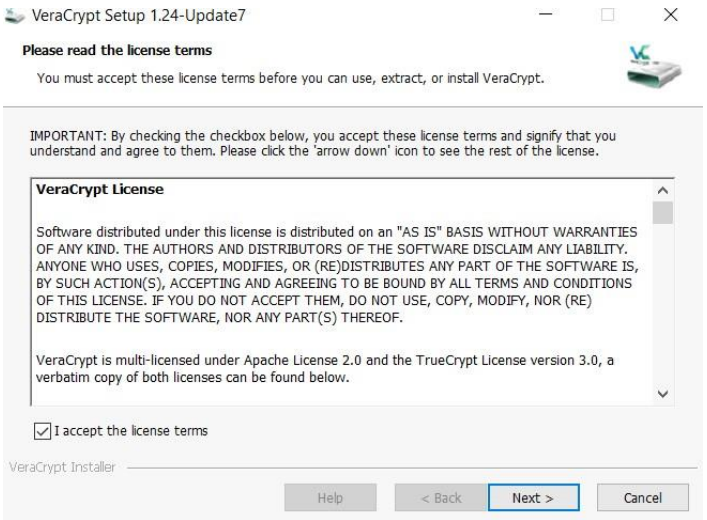
To analyze the Encryption/Decryption process using Vera Crypt tool.

Procedure:

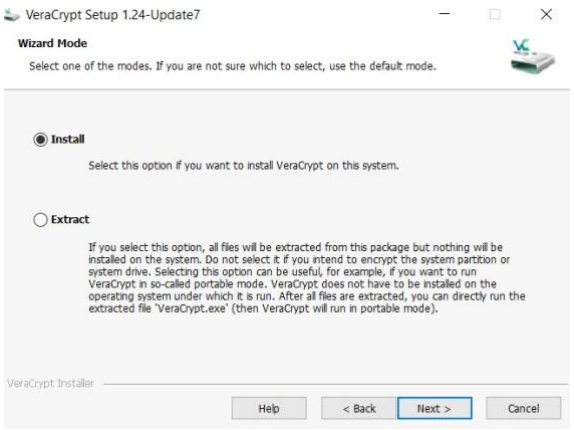
Step 1: Download VeraCrypt for Windows from the official website using URL:https://veracrypt.fr/en/Downloads.html



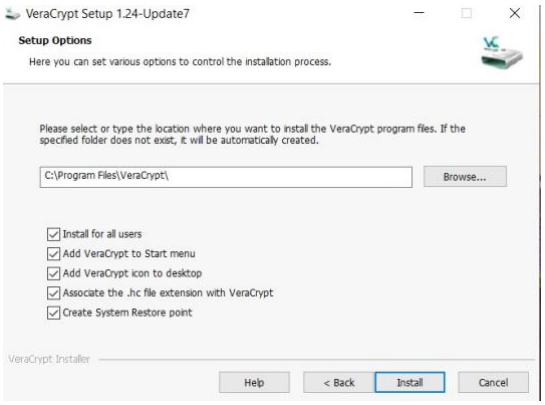
Step 2: Click on the setup file and start Installation, then accept the license, and then click on Next.



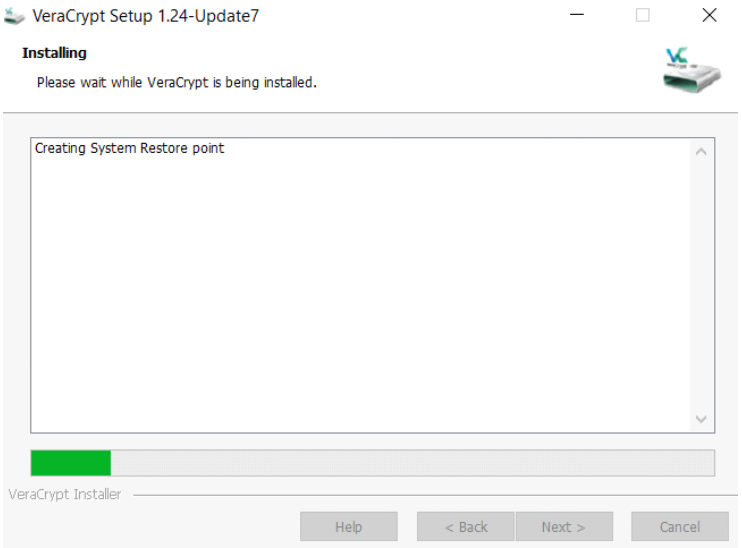
Step 3: Select install and click on the Next button.



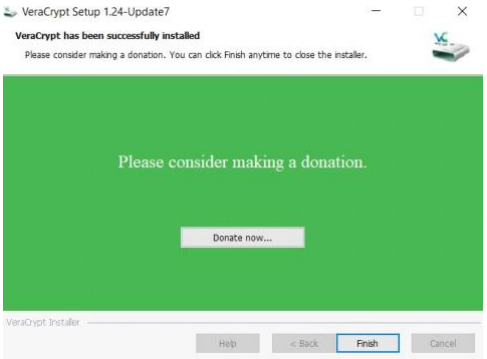
Step 4: Select the location where you want to VeraCrypt install program files. Select all options and clickInstall.



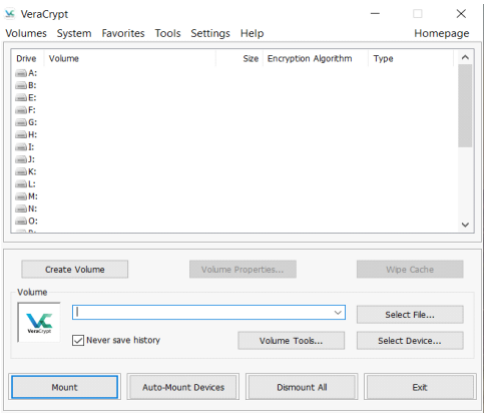
Step 5: Now the installation process is started. After successful installation click on OK.



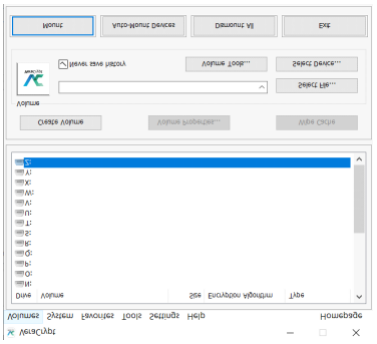
Step 6: Click on Finish to complete the installation process of VeraCrypt.



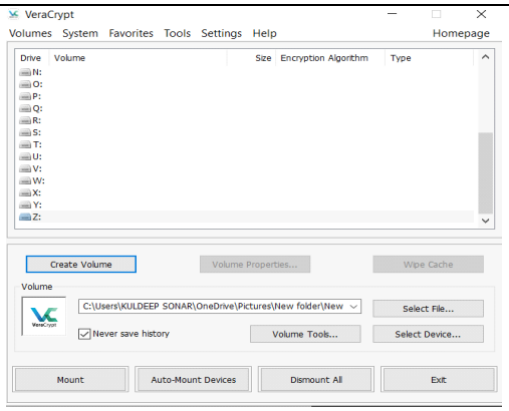
Step 7: After installation of VeraCrypt, now we start encryption of the drive.



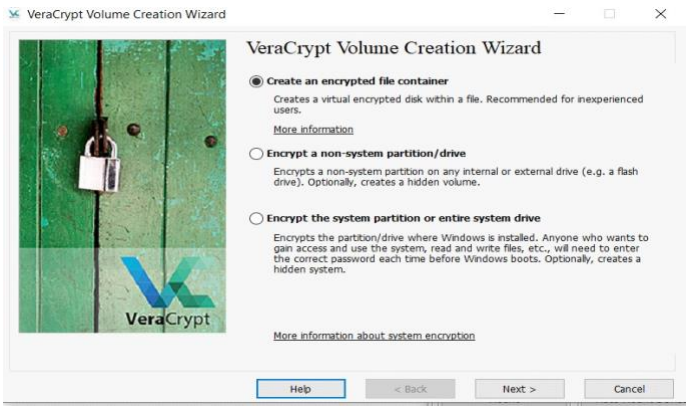
Step 8: Select a Specific drive to encrypt. For example, Drive “Z” is selected.



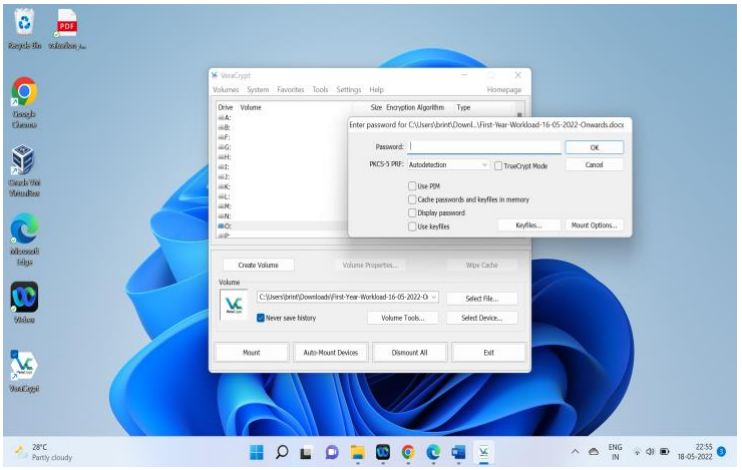
Step 9: Select location to create volume for the encrypted drive.



Step 10: Select create an encrypted file container to create a virtual encrypted disk. Then, click next to thedrive encryption process.



Sample Output Screenshot:



Result:

Thus, the veracrypt tool was used to encrypt and decrypt a system volume successfully

Ex. No. 2	Hide and Unhide Sensitive Information using Steghide

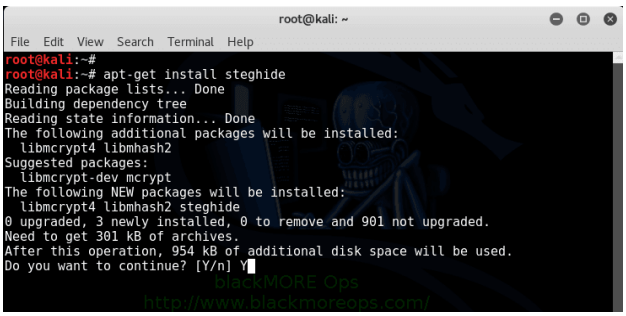
Aim:

To Hide and Unhide sensitive data using Steghide.

Procedure:

Step 1: Open Kali Linux terminal.

Step 2: To Install Steghide type command: **apt-get install steghide**



Step 3: To change the working directory to Desktop-type command: **cd Desktop** in Kali Linux terminal.

Step 4: Create a text file example **secret.txt** and Download an image file in which we will hide out text filesinside it, for example, **girl.jpg**.

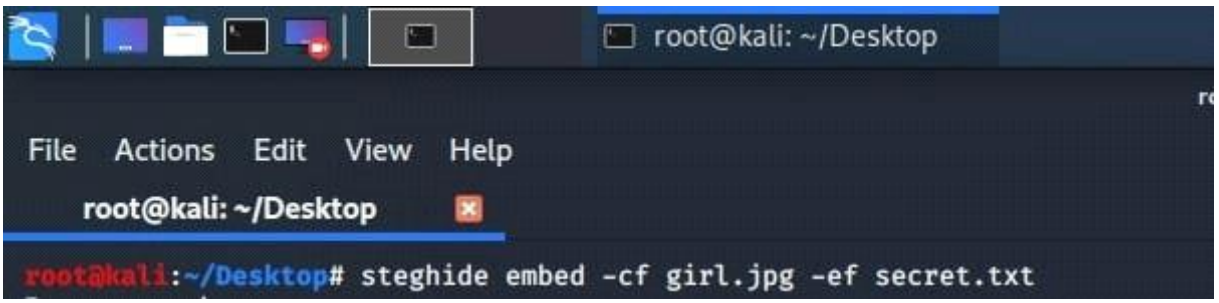
Step 5: Make sure that both the files i.e JPG Image file and the text file in the same working directory.

Step 6: Type steghide or steghide -h to show all the option of steghide.

```
the first argument must be one of the following:
embed, --embed embed data
extract, --extract extract data
info, --info display information about a cover- or stego-file
info <filename> display information about <filename>
encinfo, --encinfo display a list of supported encryption algorithms
version, --version display version information
license, --license display steghide's license
help, --help display this usage information

embedding options:
-ef, --embedfile select file to be embedded
-ef <filename> embed the file <filename>
-cf, --coverfile select cover-file
-cf <filename> embed into the file <filename>
-p, --passphrase specify passphrase
-p <passphrase> use <passphrase> to embed data
-sf, --stegofile select stego file
-sf <filename> write result to <filename> instead of cover-file
-e, --encryption select encryption parameters
-e <a>[<m>][<m>[<a>] specify an encryption algorithm and/or mode
-e none do not encrypt data before embedding
-z, --compress compress data before embedding (default)
-z <l> using level <l> (1 best speed...9 best compression)
-Z, --dontcompress do not compress data before embedding
-K, --nochecksum do not embed crc32 checksum of embedded data
-N, --dontembedname do not embed the name of the original file
-f, --force overwrite existing files
-q, --quiet suppress information messages
-v, --verbose display detailed information
```

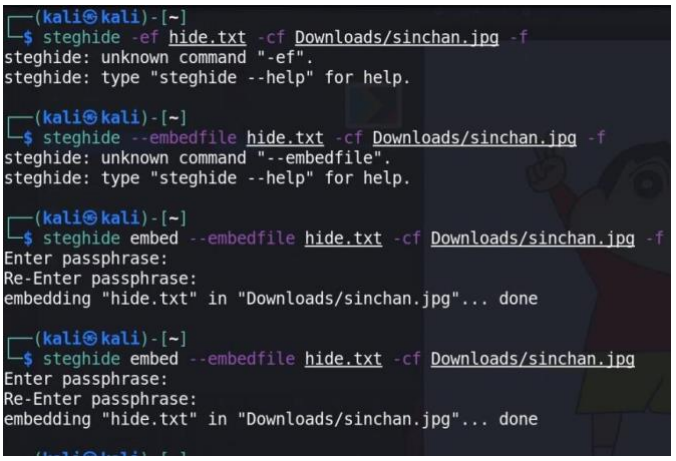
Step 7: Now type the command: **steghide embed -cf girl.jpg -ef secret.txt** to embed the text File into theImage File with a password.



Step 8: Now, Enter a Passphrase/password. Then re-enter the same passphrase to confirm and hit enter.

Step 9: Finally get output on terminal.

Sample Output Screenshot:



```
┌──(kali㉿kali)-[~]
└─$ steghide -ef hide.txt -cf Downloads/sinchan.jpg -f
steghide: unknown command "-ef".
steghide: type "steghide --help" for help.

┌──(kali㉿kali)-[~]
└─$ steghide --embedfile hide.txt -cf Downloads/sinchan.jpg -f
steghide: unknown command "--embedfile".
steghide: type "steghide --help" for help.

┌──(kali㉿kali)-[~]
└─$ steghide embed --embedfile hide.txt -cf Downloads/sinchan.jpg -f
Enter passphrase:
Re-Enter passphrase:
embedding "hide.txt" in "Downloads/sinchan.jpg"... done

┌──(kali㉿kali)-[~]
└─$ steghide embed --embedfile hide.txt -cf Downloads/sinchan.jpg
Enter passphrase:
Re-Enter passphrase:
embedding "hide.txt" in "Downloads/sinchan.jpg"... done
```

Result:

Thus, the steghide is used to Hide and Unhide sensitive data Successfully

Ex. No. 3	Cryptography using Cryptool-online

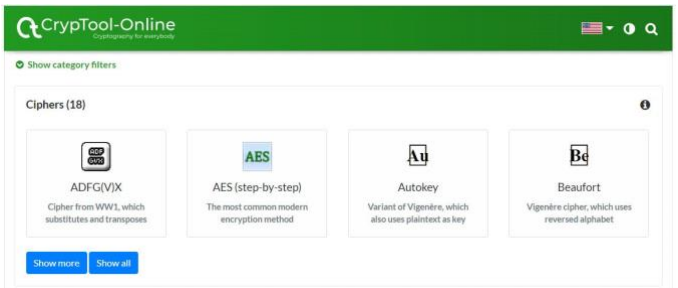
Aim:

To cryptograph the text using Cryptool-online.

Procedure:

Step 1: Click on the URL to open CrypTool-Online: https://www.cryptool.org/en/cto/

Step 2: Click on ADFGX is to start the encoding procedure.

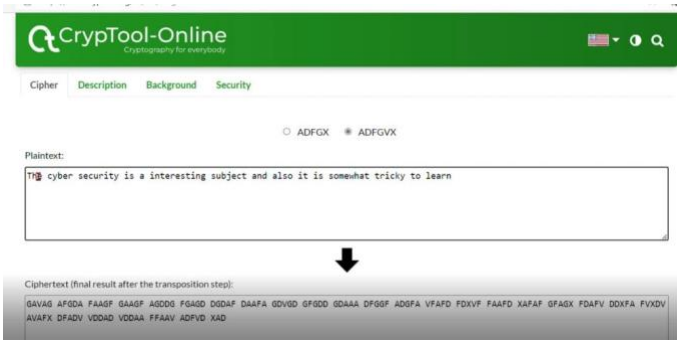


Step 3: Select ADFGVX in cipher.

Step 4: Select blocks "Blocks of 5" mentioned below to see the ciphertext in a specific set of characters.

Step 5: Type or paste text in the plaintext area. In Ciphertext area final result of the text will be shownautomatically in Cryptography form.

Sample Output Screenshot:



Result:

Finally Converted Plain Text into cipher text using Cryptool-online.

Ex. No. 4	Hashing data using QuickHash-GUI

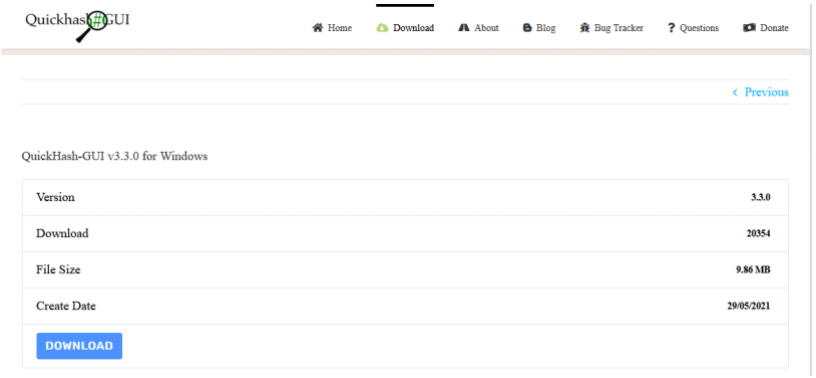
Aim:

To hash data by using Quick-hash-GUIptool-online.

Procedure:

Step 1: To install QuickHash-GUI for Windows click on URL:
https://www.quickhash-gui.org/download/quickhash-gui-v3-3-0-windows/

Step 2: Click on download and follow the instruction to complete the installation process.

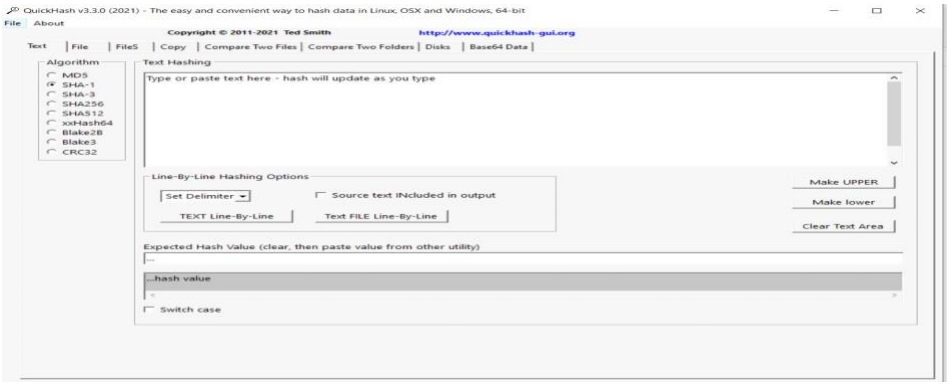


Step 3: Select an algorithm from the left-side algorithms panel.

Step 4: Type or paste text in the text hashing panel.

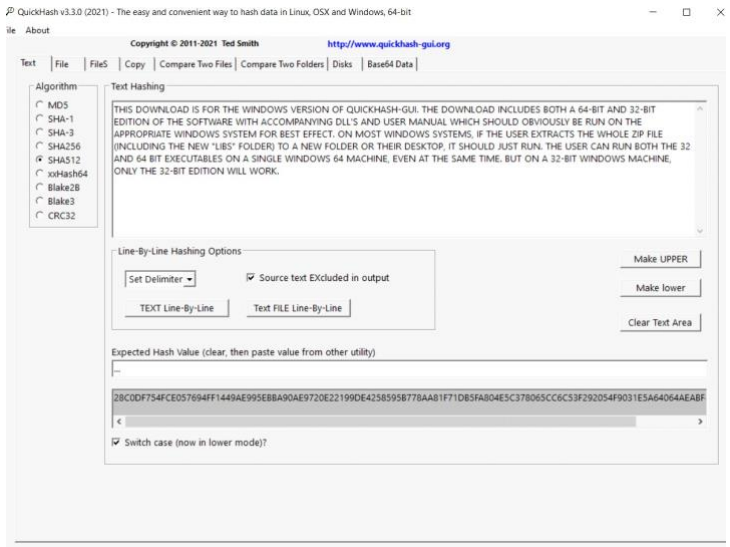
Step 5: Get a hash value at the bottom.

Step 6: Here we select: SHA-1 algorithm.



Step 7: Here we select: SHA512 algorithm.

Sample Output Screenshot:



Result:

Learned hashing text data with two different algorithms using the QuickHash-GUI tool Successfully.

Ex. No. 5	Cryptographic attack using Hashcat

Aim:

This exercise is about use of Hashcat for the cryptographic attack.

Procedure:

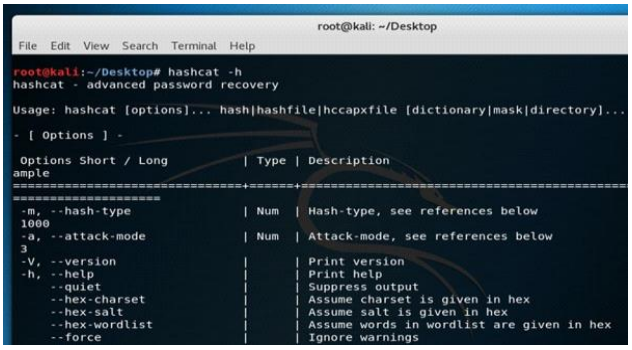
Step 1: To install Hashcat download the Hashcat tool using the URL: https://hashcat.net/hashcat/

Download

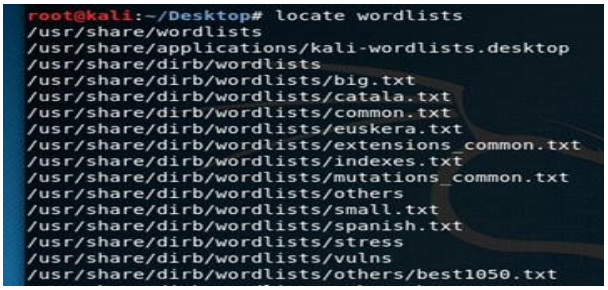
Name	Version	Date	Download	Signature
hashcat binaries	v6.2.4	2021.08.29	Download	PGP
hashcat sources	v6.2.4	2021.08.29	Download	PGP

Step 2: After installation, open the Kali Linux terminal to perform the cryptographic attack.

Step 3: Some of the most important hashcat options are **-m** (the hashtype) and **-a** (attack mode).



Step 4: To find the Kali Linux numerous wordlists type command line: **locate wordlists.**



Step 5: Here, for example, create a “rockyou.txt” that contains seven hashes and find in wordlists.

```
root@kali:~/Desktop# locate rockyou.txt
/usr/share/wordlists/rockyou.txt
```

Step 6: To cracking the hashes in rockyou.txt use the command: **target_hashes.txt**

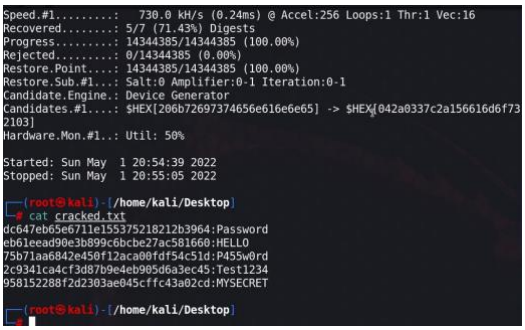
```
root@kali:~/Desktop# hashcat -m 0 -a 0 -o cracked.txt target_hashes.txt /usr/share
/wordlists/rockyou.txt
```

Step 7: Explanation of terms used in the above command line:

- -m 0 designates the type of hash we are cracking (MD5).
- -a 0 designates a dictionary attack.
- -o cracked.txt is the output file for the cracked passwords.
- target_hashes.txt is our input file of hashes.
- /usr/share/wordlists/rockyou.txt is the absolute path to the wordlist file for this dictionary attack.

Step 8: Finally get the results, we have cracked five out of seven targeted hashes.

Sample Output Screenshot:



```
Speed.#1.........:   730.0 kH/s (0.24ms) @ Accel:256 Loops:1 Thr:1 Vec:16
Recovered........: 5/7 (71.43%) Digests
Progress.........: 14344385/14344385 (100.00%)
Rejected.........: 0/14344385 (0.00%)
Restore.Point....: 14344385/14344385 (100.00%)
Restore.Sub.#1...: Salt:0 Amplifier:0-1 Iteration:0-1
Candidate.Engine.: Device Generator
Candidates.#1....: $HEX[206b72697374656e616e6e65] -> $HEX[042a0337c2a156616d6f73
2103]
Hardware.Mon.#1..: Util: 50%

Started: Sun May  1 20:54:39 2022
Stopped: Sun May  1 20:55:05 2022

┌──(root㉿kali)-[/home/kali/Desktop]
└─# cat cracked.txt
dc647eb65e6711e155375218212b3964:Password
eb61eead90e3b899c6bcbe27ac581660:HELLO
75b71aa6842e450f12aca00fdf54c51d:P455w0rd
2c9341ca4cf3d87b9e4eb905d6a3ec45:Test1234
958152288f2d2303ae045cffc43a02cd:MYSECRET

┌──(root㉿kali)-[/home/kali/Desktop]
└─#
```

Result:

Performed Cryptographic attack Successfully by using hashcat.

Ex. No. 6	Operations Security using ClamWin

Aim:

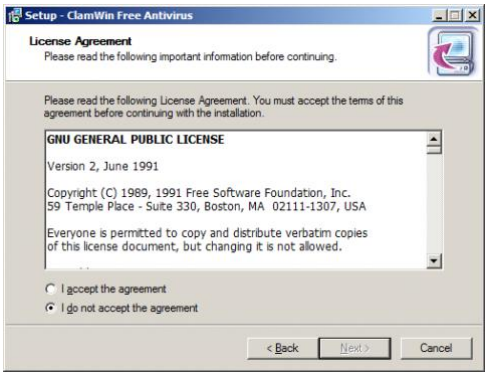
Understanding the operating of ClamWin security tool.

Procedure:

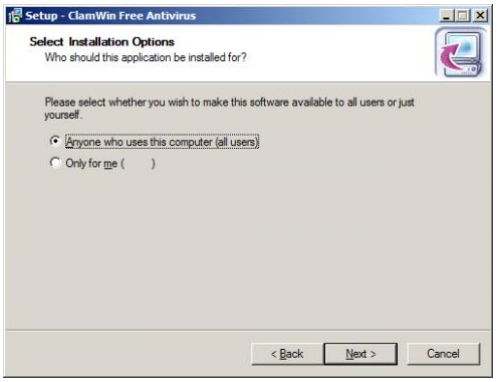
Step 1: To Install ClamWin in Windows click on the URL: https://clamwin.com/content/view/18/46/

Step 2: Run the downloaded setup exe file and click on Next.

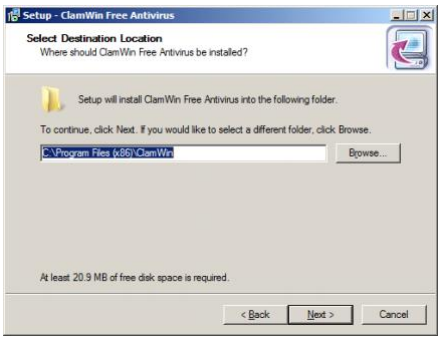
Step 3: Accept the license and click on the Next.



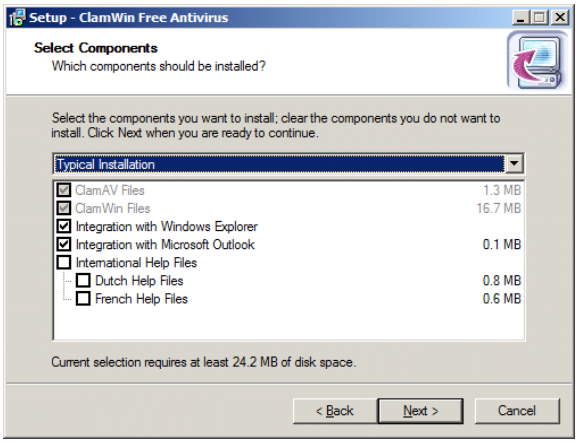
Step 4: Select an option and click on Next.



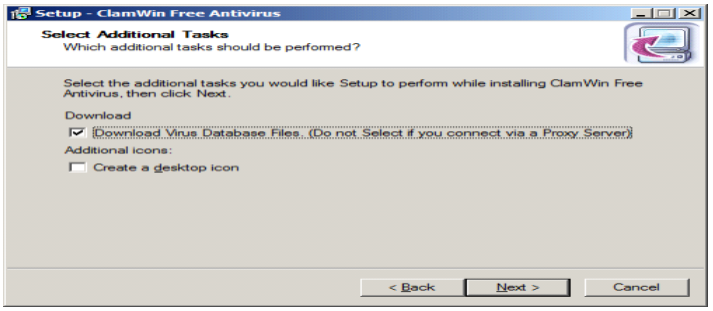
Step 5: Choose a location and click on Next.



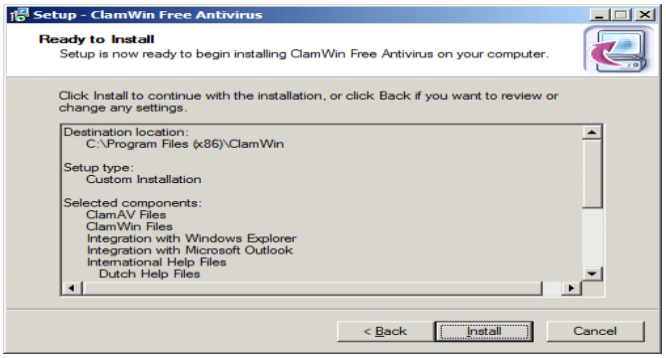
Step 6: Select the components and click on Next.



Step 7: Select an additional task and click on Next.



Step 8: Click on Install to run the installation process.

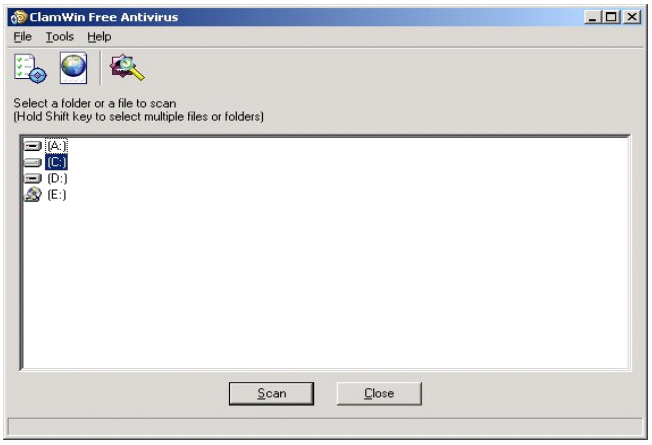


Step 9: Click on the Finish button to complete the installation process.

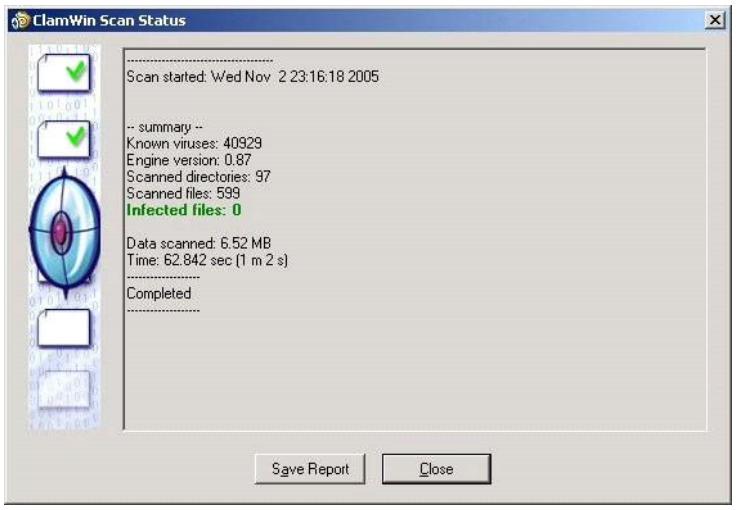
Step 10: After finishing installation open the ClamWin Tool to scan a drive.

Step 11: Select a Drive from computer Example: C drive.

Step 12: Click on Scan.



Sample Output Screenshot:



Result:

Learned security tool and scanningwith Clam-win successfully

Ex. No. 7	Vulnerability analysis using Legion

Aim:

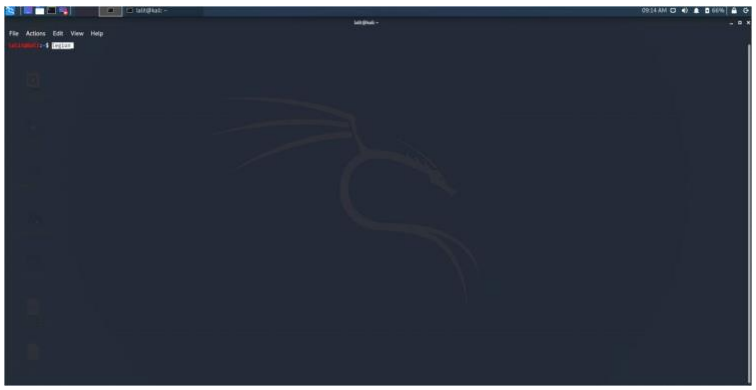
Scanning a website by using legion tool.

Procedure:

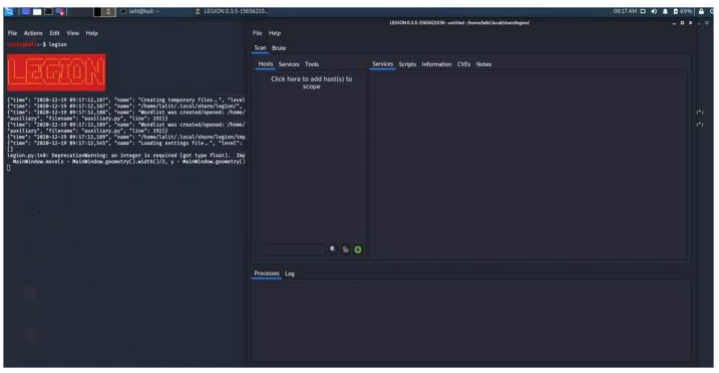
Step 1: To install Legion tool run the command in the Kali Linux terminal.

```
sudo apt-get install legion -y
```

Step 2: After installation, to start the legion tool from terminal type command: **legion.**

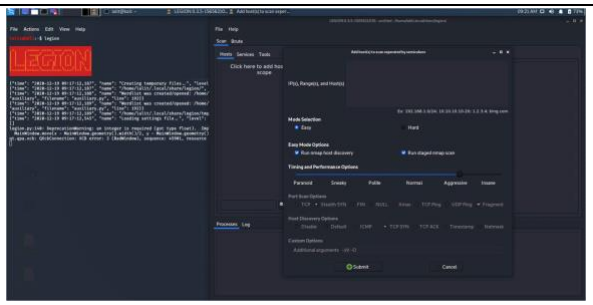


Step 3: Now, Legion tool is open to perform the scanning task.

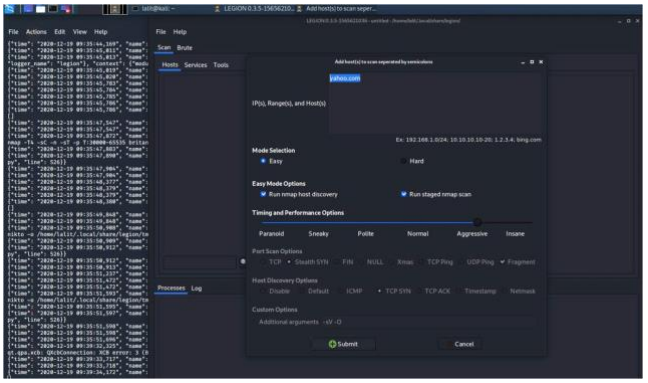


Step 4: Here, to perform an easy mode scan on yahoo.com with **-sV** and -O arguments.

Step 5: Click on host section.

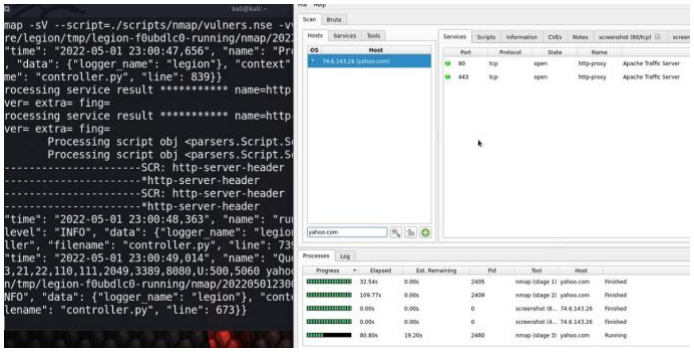


Step 6: Add “yahoo.com” as host and click on submit button.



Step 7: Get a scanning result.

Sample Output Screenshot:



Result:

Learned the process of installation of Legion tool and the procedure of finding vulnerabilities in a website.

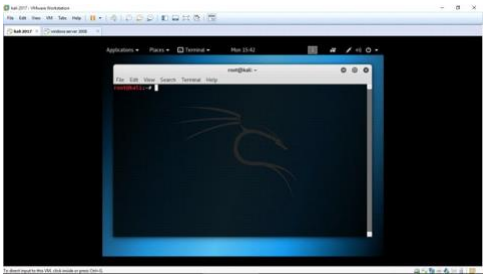
Ex. No. 8	Network Security using Wire shark

Aim:

Securing network with Wire shark

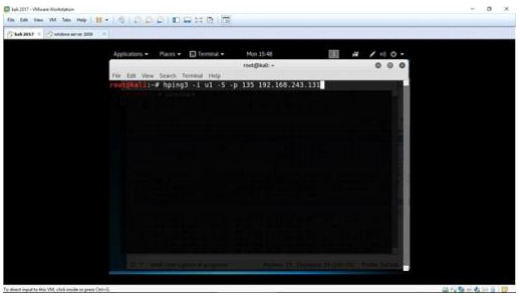
Procedure:

Step 1: Open Kali Linux.

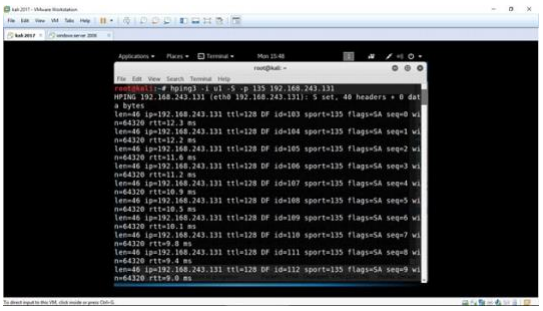


Step 2: Type command: hping3 -i u1 -S -p 80 **192.168.243.131** (IP address of target machine) in terminal and press enter, where:

- i — interval wait.
- u1- 1 microsecond.
- -S — Syn packet.
- -p — port number.

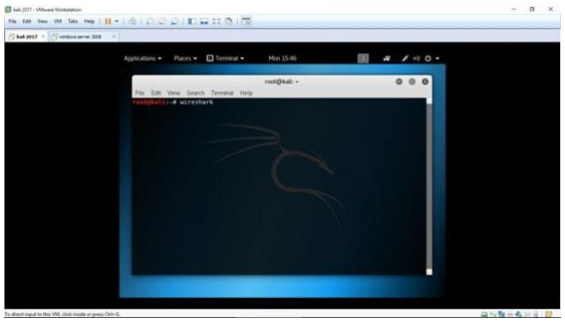


Step 3: Now, the following results will get.

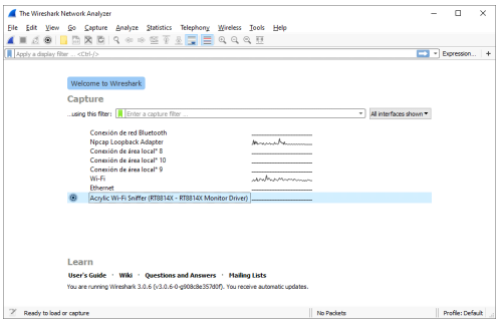


Step 4: Now, to check the result in Wireshark.

Step 5: To open Wireshark in kali Linux type command: Wireshark.

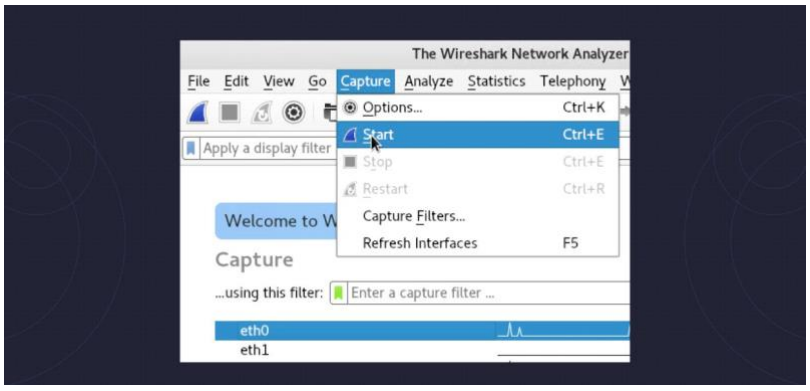


Step 6: Now, Wireshark is open.



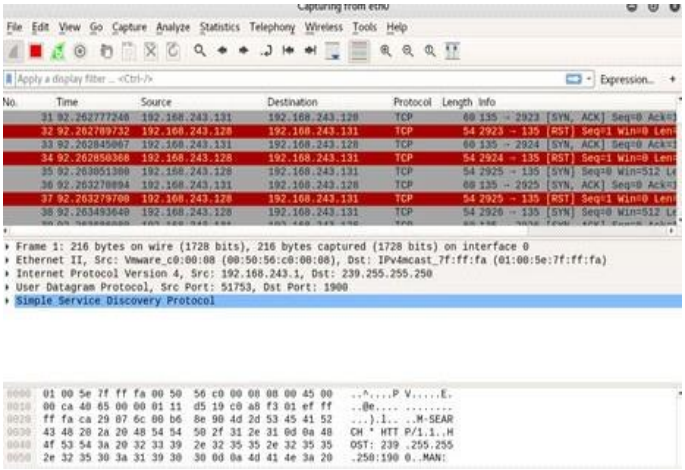
Step 7: Click on the Start Capturing Packets icon on the toolbar.

Step 8: Click on menu item and select Capture and click on start.



Step 9: Now, Wireshark will show the packets that it captures in real-time.

Sample Output Screenshot:



Result:

Performed a network security check with Wireshark

Ex. No. 9	Assessing threats and vulnerabilities using Legion

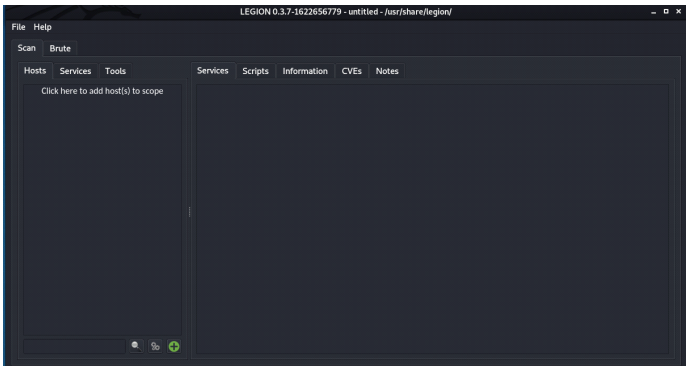
Aim:

Scanning vulnerabilities in a website network using Legion Tool.

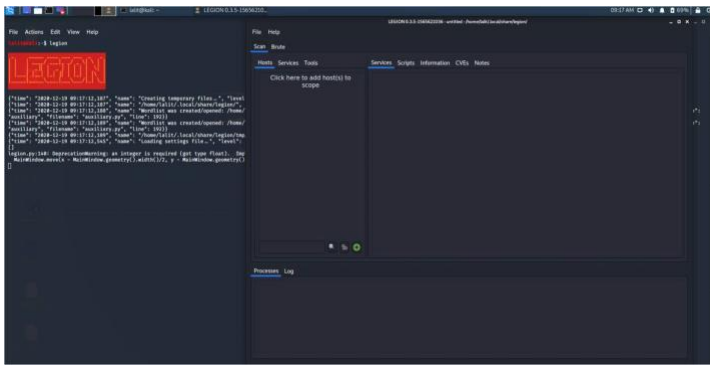
Procedure:

Step 1: To start the Legion tool in Kali Linux terminal use command: **Legion**

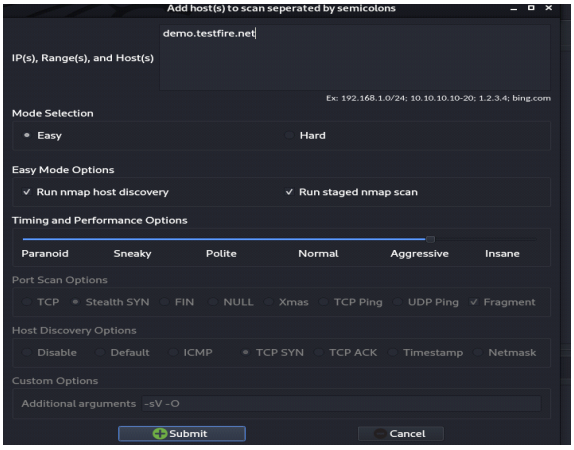
Step 2: To do an Easy mode scan on demo.testfire.net



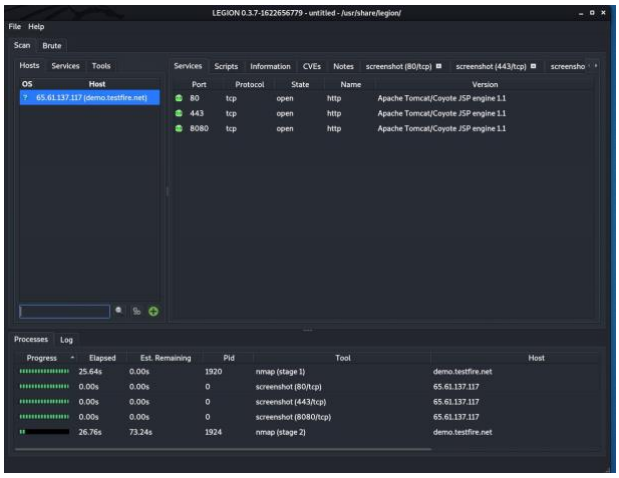
Step 3: Click on host section.



Step 4: Add host example: **"demo.testfire.net"**, choose Easy and click on submit button

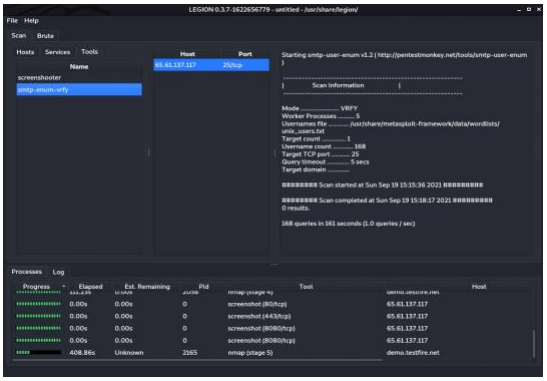


Step 5: Now, get the scanning result.



Step 6: Now, get the scanning result and click on **smtp-enum-vrfy** in Tools tab to view full scan information.

Sample Output Screenshot:



Result:

Scanned a website network vulnerabilities using Legion tool successfully

Ex. No. 10	Secure Network Administration using Nmap

Aim:

Scanning a website network using Nmap Tool

Procedure:

Step 1: IP Address of site and OS for this Lab.

- Kali Linux = 192.168.43.236
- Windows 7 = 192.168.43.29
- Facebook site = 31.13.79.35

Step 2: Open Kali Linux and to configure IP address of Kali Linux type command: **ifconfig.**

```
root@drona:~# ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.43.236  netmask 255.255.255.0  broadcast 192
        inet6 fe80::a00:27ff:fe39:8bf2  prefixlen 64  scopeid 0x2
        ether 08:00:27:39:8b:f2  txqueuelen 1000  (Ethernet)
        RX packets 2730  bytes 186283 (181.9 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 157644  bytes 9579610 (9.1 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions
```

Step 3: To configure IP address in Window 7. Open cmd prompt and type command: **ipconfig.**

```
C:\Users\admin>ipconfig

Windows IP Configuration


Ethernet adapter Local Area Connection:

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::291e:e45e:6838:49f2%11
   IPv4 Address. . . . . . . . . . . : 192.168.43.29
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : 192.168.43.1

Tunnel adapter isatap.{6FADE99E-AD12-4C69-92DE-E858A66AD176}:

   Media State . . . . . . . . . . . : Media disconnected
   Connection-specific DNS Suffix  . :
```

Step 4: To get IP address of the Facebook site. In Kali Linux type command: **ping www.facebook.com.**

```
root@drona:~# ping www.facebook.com
PING star-mini.c10r.facebook.com (31.13.79.35) 56(84) bytes of data.
64 bytes from edge-star-mini-shv-02-bom1.facebook.com (31.13.79.35): icmp_seq=1
ttl=51 time=38.9 ms
64 bytes from edge-star-mini-shv-02-bom1.facebook.com (31.13.79.35): icmp_seq=2
ttl=51 time=76.2 ms
64 bytes from edge-star-mini-shv-02-bom1.facebook.com (31.13.79.35): icmp_seq=3
ttl=51 time=69.4 ms
^C
```

Step 5: To Nmapping of Facebook site type command: **nmap 31.13.79.35** (IP address of website).

```
root@drona:~# nmap 31.13.79.35
Starting Nmap 7.70 ( https://nmap.org ) at 2019-06-12 12:18 EDT
Nmap scan report for edge-star-mini-shv-02-bom1.facebook.com (31.13.79.35)
Host is up (0.049s latency).
Not shown: 996 filtered ports
PORT     STATE  SERVICE
80/tcp   open   http
443/tcp  open   https
843/tcp  closed unknown
5222/tcp closed xmpp-client

Nmap done: 1 IP address (1 host up) scanned in 5.76 seconds
```

Step 6: Here 996 filtered ports show the firewall is working behind this site. Also, TCP ports are open withhttp and https services. Even xmp-client and some unknown services are in a closed state.

Step 7: Hence we have successfully scan Networks using Nmap and obtained useful information andvulnerabilities from targeted sites.

Sample Output Screenshot:

```
┌──(root㉿kali)-[/home/kali]
└─# ping www.facebook.com
PING star-mini.c10r.facebook.com (157.240.228.35) 56(84) bytes of data.
64 bytes from edge-star-mini-shv-01-tir2.facebook.com (157.240.228.35): icmp_seq=
64 bytes from edge-star-mini-shv-01-tir2.facebook.com (157.240.228.35): icmp_seq=
64 bytes from edge-star-mini-shv-01-tir2.facebook.com (157.240.228.35): icmp_seq=
64 bytes from edge-star-mini-shv-01-tir2.facebook.com (157.240.228.35): icmp_seq=
64 bytes from edge-star-mini-shv-01-tir2.facebook.com (157.240.228.35): icmp_seq=
^C
--- star-mini.c10r.facebook.com ping statistics ---
7 packets transmitted, 5 received, 28.5714% packet loss, time 7142ms
rtt min/avg/max/mdev = 63.693/73.645/107.051/16.799 ms

┌──(root㉿kali)-[/home/kali]
└─# nmap 157.240.228.35
Starting Nmap 7.92 ( https://nmap.org ) at 2022-05-16 21:41 IST
Nmap scan report for edge-star-mini-shv-01-tir2.facebook.com (157.240.228.35)
Host is up (0.0021s latency).
Not shown: 998 filtered tcp ports (no-response)
PORT    STATE SERVICE
80/tcp  open  http
443/tcp open  https

Nmap done: 1 IP address (1 host up) scanned in 45.71 seconds
```

Result:

Scanned a website network using Nmap too

Ex. No. 11	Securing Windows OS using Windows Security

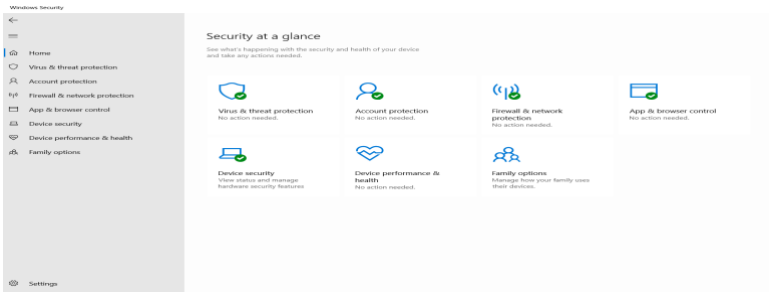
Aim:

Understanding the features of Windows security in the Windows Operating System.

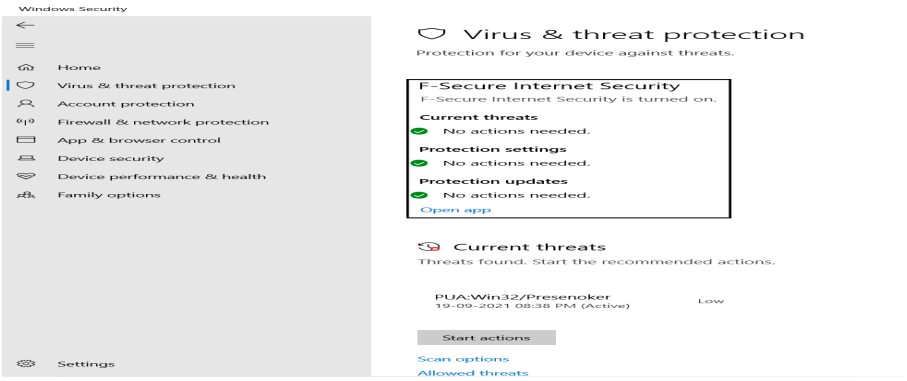
Procedure:

Step 1: Click on the start menu. Go to Windows Security.

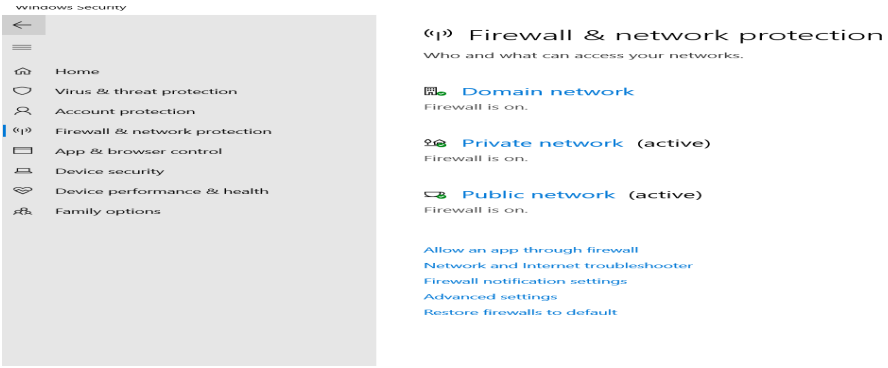
Step 2: Click on Home for a Windows security quick view



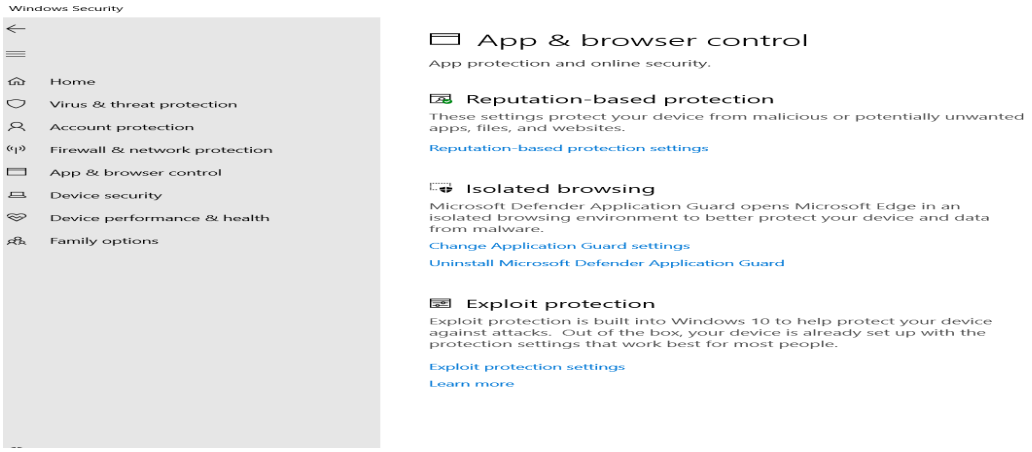
Step 3: Click on virus and threat protection to scan the device against threats.



Step 4: Click on firewall and protection to know who and what can access your network.

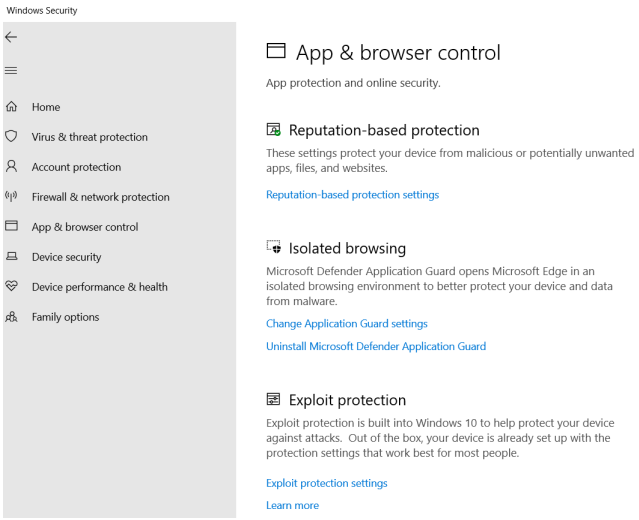


Step 5: Click on app and browser control for app and online protection.



Step 6: Click on device security to control the security settings that come with the device.

Sample Output Screenshot:



Result:

Verified security features in Windows OS.

Ex. No. 12	Security Assessment using Nikto

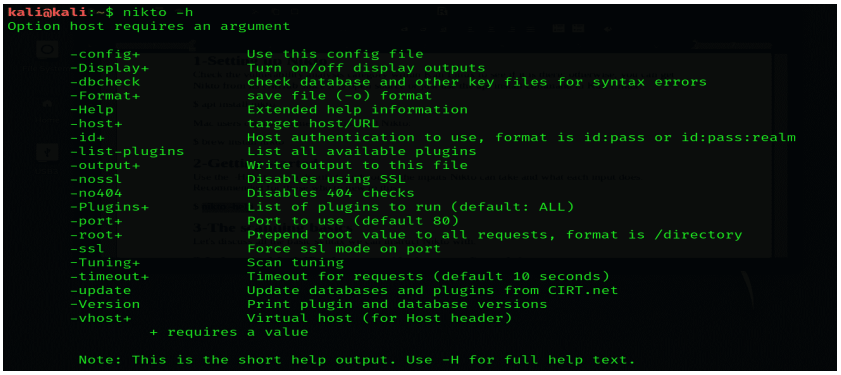
Aim:

Scanning web vulnerabilities using Nikto

Procedure:

Step 1: Open Kali Linux Terminal open Nikto.

Step 2: To see a detailed guide on all the inputs of Nikto use command: "$ nikto -h"



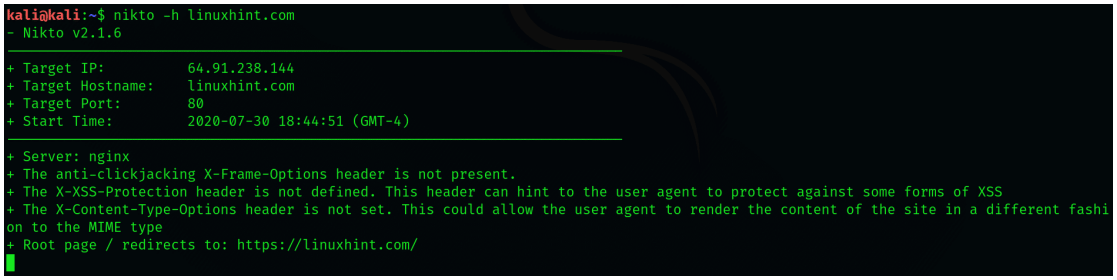
```
kali@kali:~$ nikto -h
Option host requires an argument

       -config+            Use this config file
       -Display+           Turn on/off display outputs
       -dbcheck            check database and other key files for syntax errors
       -Format+            save file (-o) format
       -Help               Extended help information
       -host+              target host/URL
       -id+                Host authentication to use, format is id:pass or id:pass:realm
       -list-plugins       List all available plugins
       -output+            Write output to this file
       -nossl              Disables using SSL
       -no404              Disables 404 checks
       -Plugins+           List of plugins to run (default: ALL)
       -port+              Port to use (default 80)
       -root+              Prepend root value to all requests, format is /directory
       -ssl                Force ssl mode on port
       -Tuning+            Scan tuning
       -timeout+           Timeout for requests (default 10 seconds)
       -update             Update databases and plugins from CIRT.net
       -Version            Print plugin and database versions
       -vhost+             Virtual host (for Host header)
                + requires a value

        Note: This is the short help output. Use -H for full help text.
```

Step 3: Substitute the default IP with a hostname: linuxhint.com

Step 4: Use command: $ nikto -h linuxhint.com



```
kali@kali:~$ nikto -h linuxhint.com
- Nikto v2.1.6
---------------------------------------------------------------------------
+ Target IP:          64.91.238.144
+ Target Hostname:    linuxhint.com
+ Target Port:        80
+ Start Time:         2020-07-30 18:44:51 (GMT-4)
---------------------------------------------------------------------------
+ Server: nginx
+ The anti-clickjacking X-Frame-Options header is not present.
+ The X-XSS-Protection header is not defined. This header can hint to the user agent to protect against some forms of XSS
+ The X-Content-Type-Options header is not set. This could allow the user agent to render the content of the site in a different fashi
on to the MIME type
+ Root page / redirects to: https://linuxhint.com/
```

Step 5: Scanning SSL enabled websites Example: pbs.org

Step 6: Use command line: $ nikto -h pbs.org –ssl

Step 7: We've performed a quick scan of pbs.org

Sample Output Screenshot:

```
┌──(kali㉿kali)-[~]
└─$ nikto -h pbs.org -ssl
- Nikto v2.1.6
---------------------------------------------------------------------------
+ Target IP:          54.225.198.196
+ Target Hostname:    pbs.org
+ Target Port:        443
---------------------------------------------------------------------------
+ SSL Info:        Subject:  /CN=www.pbs.org
                   Ciphers:  ECDHE-RSA-AES128-GCM-SHA256
                   Issuer:   /C=US/O=Let's Encrypt/CN=R3
+ Message:            Multiple IP addresses found: 54.225.198.196, 54.225.206.15
+ Start Time:         2022-05-16 22:00:53 (GMT5.5)
---------------------------------------------------------------------------
+ Server: nginx
+ The anti-clickjacking X-Frame-Options header is not present.
+ The X-XSS-Protection header is not defined. This header can hint to the user a
+ Uncommon header 'x-pbs-fwsrvname' found, with contents: fwcacheproxy1
+ The site uses SSL and the Strict-Transport-Security HTTP header is not definec
+ The site uses SSL and Expect-CT header is not present.
+ The X-Content-Type-Options header is not set. This could allow the user agent
 to the MIME type
+ Root page / redirects to: https://www.pbs.org/
```

Result:

Scanned vulnerabilities successfully by using Nikto

Ex. No. 13	Log Management using Logwatch

Aim: How to install Logwatch Tool in Kali Linux

Procedure:

Step 1: Before start, prerequisites are:

- Ensure email is working. Instructions for doing so may be found in MailServer.
- Turn on the universe repository. Instructions for doing so may be found in Repositories.

Step 2: Open ubuntu terminal and to install Logwatch run the Command: **~# apt-get -y install logwatch**

```
root@ubuntu-14:~#
root@ubuntu-14:~# apt-get -y install logwatch
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  postfix ssl-cert
Suggested packages:
  fortune-mod procmail postfix-mysql postfix-pgsql postfix-ldap postfix-pcre
  sasl2-bin dovecot-common postfix-cdb mail-reader postfix-doc
  openssl-blacklist
Recommended packages:
  libdate-manip-perl
The following NEW packages will be installed:
  logwatch postfix ssl-cert
0 upgraded, 3 newly installed, 0 to remove and 52 not upgraded.
Need to get 1,569 kB of archives.
After this operation, 5,851 kB of additional disk space will be used.
```

Step 3: After installation we will get the end result.

```
Running newaliases
 * Stopping Postfix Mail Transport Agent postfix
 * Starting Postfix Mail Transport Agent postfix
Processing triggers for ufw (0.34~rc-0ubuntu2) ...
Processing triggers for ureadahead (0.100.0-16) ...
Setting up logwatch (7.4.0+svn20130529rev144-1ubuntu1) ...
Processing triggers for libc-bin (2.19-0ubuntu6.6) ...
root@ubuntu-14:~#
```

Step 4: The local configurations file is located in /etc/logwatch/conf/logwatch.conf

Step 5: Default configurations file can be configured in

/usr/share/logwatch/default.conf/logwatch.conf.

Step 6: Open the file using command: **~# vim /usr/share/logwatch/default.conf/logwatch.conf**

Step 7: To test Logwatch run command: **~# logwatch.**

Step 9: Get a report of each service running and application installed.

Sample Output Screenshot:

```
root@ubuntu-14:~#
root@ubuntu-14:~# logwatch

 ################### Logwatch 7.4.0 (05/29/13) ####################
        Processing Initiated: Sat Jul 18 15:22:37 2015
        Date Range Processed: today
                              ( 2015-Jul-18 )
                              Period is day.
        Detail Level of Output: 0
        Type of Output/Format: stdout / text
        Logfiles for Host: ubuntu-14
 ##################################################################

 -------------------- Cron Begin ------------------------
```

Result:

Logwatch is installed and Located the configurations of Logwatch.

Ex. No. 14	Logs Management in Linux

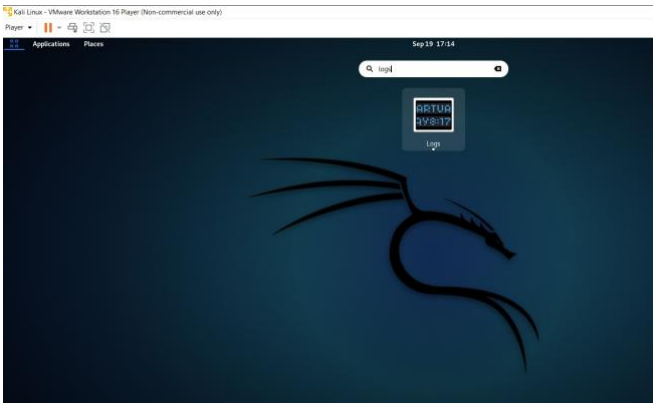
Aim: To manage logs in kali linux.

Procedure:

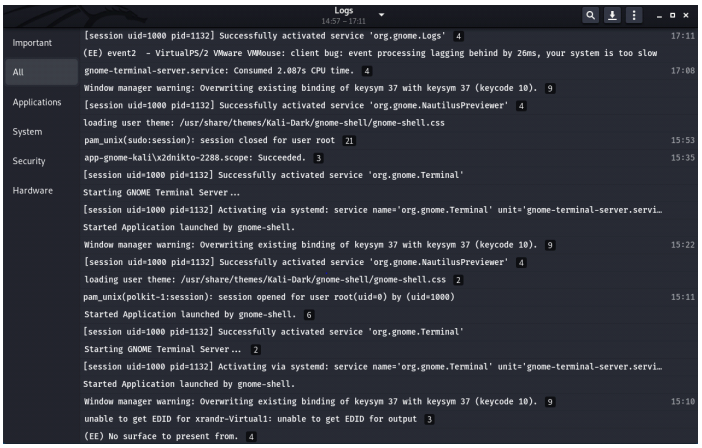
Step 1: Open Installed Kali Linux.

Step 2: Type logs in the search bar.

Step 3: Click on logs to open the log management.

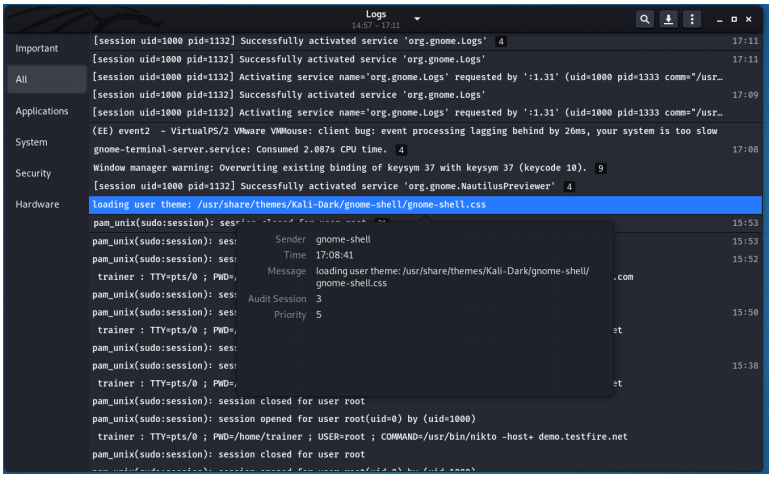


Step 4: Click on All to see all system logs.



Step 5: Click on a particular log to check the log activity.

Sample Output Screenshot:



Result:

Successfully Managed logs in Kali Linux

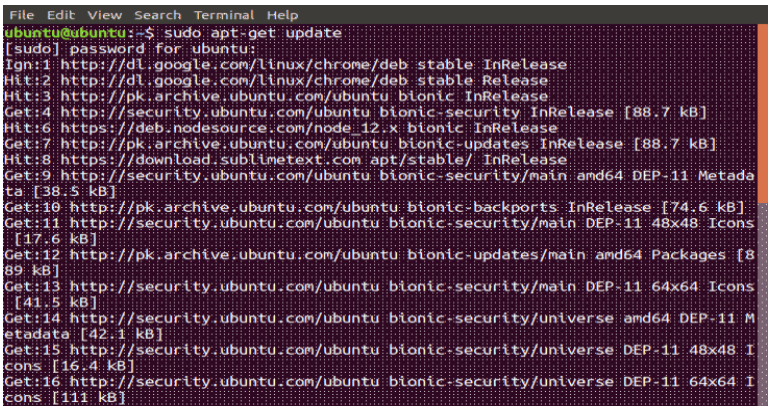
Ex. No. 15	Antivirus installations, configuration, and management using ClamAV

Aim: Installation of ClamAV Antivirus and performing ascan for viruses.

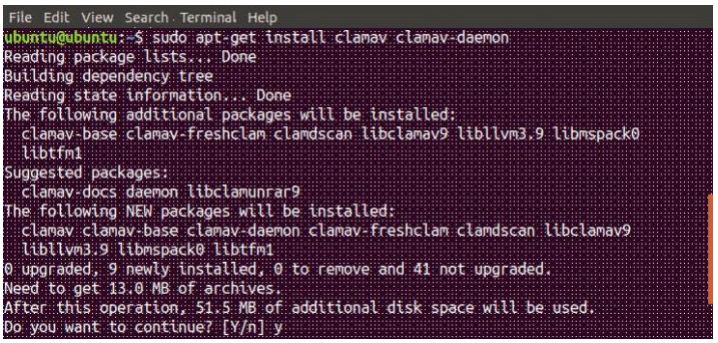
Procedure:

Step 1: To install ClamAV open the terminal and update the system.

Step 2: To update the system run the command: run the command: **~$sudo apt-get update**



Step 3: To install ClamAV run the command: ~$ sudo apt-get install clamav clamav-daemon and press Enterand choose Y.



Step 4: To check whether ClamAV installed or run the command: **~$ clamscan - - version.**

Step 5: If the above command gives the version of ClamAV then it has been installed successfully.

Step 6: After installation of ClamAV, you need to update the ClamAV signature database using command run the command: **~$ sudo freshclam.**

Step 7: To check the other ClamAV utility options type command: **$ clamscan –h.**

```
root@pentest-vm:~# clamscan -h

                      Clam AntiVirus: Scanner 0.100.1
          By The ClamAV Team: https://www.clamav.net/about.html#credits
          (C) 2007-2018 Cisco Systems, Inc.

    clamscan [options] [file/directory/-]

    --help                -h             Show this help
    --version             -V             Print version number
    --verbose             -v             Be verbose
    --archive-verbose     -a             Show filenames inside scanned archives
    --debug                              Enable libclamav's debug messages
    --quiet                              Only output error messages
    --stdout                             Write to stdout instead of stderr
    --no-summary                         Disable summary at end of scanning
    --infected            -i             Only print infected files
    --suppress-ok-results -o             Skip printing OK files
    --bell                               Sound bell on virus detection

    --tempdir=DIRECTORY                  Create temporary files in DIRECTORY
    --leave-temps[=yes/no(*)]            Do not remove temporary files
```

Step 8: Now ClamAV is ready to use. Here, for example, to scan the current user's Pictures folder run thecommand: **$ sudo clamscan --infected --remove --recursive /home/sana/Pictures.**

Step 9: Get the scan summary report.

Sample Output Screenshot:

```
sana@sana-HP-ProBook-4530s:~$ sudo clamscan --infected --remove --recursive /hom
e/sana/Pictures

----------- SCAN SUMMARY -----------
Known viruses: 6106139
Engine version: 0.100.3
Scanned directories: 1
Scanned files: 2
Infected files: 0
Data scanned: 0.05 MB
Data read: 0.05 MB (ratio 1.00:1)
Time: 63.456 sec (1 m 3 s)
```

Result:

Successfully Installed Clamav and Performed a scan for virus and got report.