

Red Team: Summary of Operations

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Exposed Services

Nmap scan results for each machine reveal the below services and OS details:

nmap 192.168.1.0/24

```
root@Kali:~# nmap 192.168.1.0/24
Starting Nmap 7.80 ( https://nmap.org ) at 2021-03-06 14:07 PST
Nmap scan report for 192.168.1.1
Host is up (0.00065s latency).
Not shown: 995 filtered ports
PORT      STATE SERVICE
135/tcp   open  msrpc
139/tcp   open  netbios-ssn
445/tcp   open  microsoft-ds
2179/tcp  open  vmsession
3389/tcp  open  ms-wbt-server
MAC Address: 00:15:5D:00:04:0D (Microsoft)

Nmap scan report for 192.168.1.100
Host is up (0.00044s latency).
Not shown: 998 closed ports
PORT      STATE SERVICE
22/tcp    open  ssh
9200/tcp  open  wap-wsp
MAC Address: 4C:EB:42:D2:D5:D7 (Intel Corporate)

Nmap scan report for 192.168.1.105
Host is up (0.0029s latency).
Not shown: 998 closed ports
PORT      STATE SERVICE
22/tcp    open  ssh
80/tcp    open  http
MAC Address: 00:15:5D:00:04:0F (Microsoft)

Nmap scan report for 192.168.1.110
Host is up (0.0010s latency).
Not shown: 995 closed ports
PORT      STATE SERVICE
22/tcp    open  ssh
80/tcp    open  http
```

This scan identifies the services below as potential points of entry:

- Target 1 List of Exposed Services

The screenshot shows a terminal window with the following Nmap scan report for host 192.168.1.110:

```
80/tcp open http  
MAC Address: 00:15:5D:00:04:0F (Microsoft)  
  
Nmap scan report for 192.168.1.110  
Host is up (0.00093s latency).  
Not shown: 995 closed ports  
PORT      STATE SERVICE  
22/tcp    open  ssh  
80/tcp    open  http  
111/tcp   open  rpcbind  
139/tcp   open  netbios-ssn  
445/tcp   open  microsoft-ds  
MAC Address: 00:15:5D:00:04:10 (Microsoft)
```

TODO: Fill out the list below. Include severity, and CVE numbers, if possible.

The following vulnerabilities were identified on each target:

- Target 1 List of Critical Vulnerabilities

1. Port 22/tcp Open ssh services (cpe: /a:openbsd:openssh: 6.7pl)

This vulnerability makes it easier for attackers to remotely attack and conduct brute-force attacks, or cause a denial of service.

- CVE-2015-5600
- CVSS Score 8.5
- Confidentiality Impact Partial (There is considerable informational disclosure.)
- Integrity Impact None (There is no impact to the integrity of the system)
- Availability Impact Complete (There is a total shutdown of the affected resource. The attacker can render the resource completely unavailable.)
- Access Complexity Low (Specialized access conditions or extenuating circumstances do not exist. Very little knowledge or skill is required to exploit.)
- Authentication Not required (Authentication is not required to exploit the vulnerability.)
- Vulnerability Type(s) Denial Of Service/ Brute force attacks.

2. Port 80/tcp open http (Http-server-header : Apache /2.4.10 (Debian)

In Apache httpd 2.2.x before 2.2.33 and 2.4.x before 2.4.26, mod_mime can read one byte past the end of a buffer when sending a malicious Content-Type response header.

- Vulnerability Details: CVE-2017-7679
- CVSS Score 7.5
- Confidentiality Impact : Partial (There is considerable informational disclosure.)
- Integrity Impact: Partial (Modification of some system files or information is possible, but the attacker does not have control over what can be modified, or the scope of what the attacker can affect is limited.)

- Availability Impact: Partial (There is reduced performance or interruptions in resource availability.)
- Access Complexity: Low (Specialized access conditions or extenuating circumstances do not exist. Very little knowledge or skill is required to exploit.)
- Authentication : Not required (Authentication is not required to exploit the vulnerability.)
- Vulnerability Type(s) Overflow

Other vulnerabilities are :

CVE-2015-0565	1.9	https://vulners.com/cve/CVE-2015-0565
80/tcp	open	http Apache httpd 2.4.10 ((Debian))
_http-server-header:	Apache/2.4.10 (Debian)	PRICING STATS TEAM BLOG
vulners:		
cpe:/a:apache:http_server:2.4.10:		
CVE-2017-7679	7.5	https://vulners.com/cve/CVE-2017-7679
CVE-2017-7668	7.5	https://vulners.com/cve/CVE-2017-7668
CVE-2017-3169	7.5	https://vulners.com/cve/CVE-2017-3169
CVE-2017-3167	7.5	https://vulners.com/cve/CVE-2017-3167
CVE-2018-1312	6.8	https://vulners.com/cve/CVE-2018-1312
CVE-2017-15715	6.8	https://vulners.com/cve/CVE-2017-15715
CVE-2017-9788	6.4	https://vulners.com/cve/CVE-2017-9788
CVE-2019-0217	6.0	https://vulners.com/cve/CVE-2019-0217
EDB-ID:47689	5.8	https://vulners.com/exploitdb/EDB-ID:47689*

Vulnerability scan results to prove the identified vulnerabilities.

```
root@Kali:~# nmap -sV --script=vulners -v 192.168.1.110
Starting Nmap 7.80 ( https://nmap.org ) at 2021-03-06 14:33 PST
NSE: Loaded 46 scripts for scanning.
NSE: Script Pre-scanning.
Initiating NSE at 14:33
Completed NSE at 14:33, 0.00s elapsed
Initiating NSE at 14:33
Completed NSE at 14:33, 0.00s elapsed
Initiating ARP Ping Scan at 14:33
Scanning 192.168.1.110 [1 port]
Completed ARP Ping Scan at 14:33, 0.04s elapsed (1 total hosts)
Initiating Parallel DNS resolution of 1 host. at 14:33
Completed Parallel DNS resolution of 1 host. at 14:33, 0.04s elapsed
Initiating SYN Stealth Scan at 14:33
Scanning 192.168.1.110 [1000 ports]
Discovered open port 445/tcp on 192.168.1.110
Discovered open port 139/tcp on 192.168.1.110
Discovered open port 80/tcp on 192.168.1.110
Discovered open port 22/tcp on 192.168.1.110
Discovered open port 111/tcp on 192.168.1.110
Completed SYN Stealth Scan at 14:33, 0.09s elapsed (1000 total ports)
Initiating Service scan at 14:33
Scanning 5 services on 192.168.1.110
Completed Service scan at 14:33, 11.02s elapsed (5 services on 1 host)
NSE: Script scanning 192.168.1.110.
Initiating NSE at 14:33
Completed NSE at 14:33, 2.34s elapsed
Initiating NSE at 14:33
Completed NSE at 14:33, 0.01s elapsed
Nmap scan report for 192.168.1.110
Host is up (0.0016s latency).
Not shown: 995 closed ports
PORT      STATE SERVICE      VERSION

```

```
PORT STATE SERVICE      VERSION
22/tcp open  ssh        OpenSSH 6.7p1 Debian 5+deb8u4 (protocol 2.0)
|_vulnerbs:
|   cpe:/a:openbsd:openssh:6.7p1:
|     CVE-2015-5600  8.5    https://vulners.com/cve/CVE-2015-5600
|     EDB-ID:40888  7.8    https://vulners.com/exploitdb/EDB-ID:40888*
EXPLOIT*
|   EDB-ID:41173  7.2    https://vulners.com/exploitdb/EDB-ID:41173*
EXPLOIT*
|   CVE-2015-6564  6.9    https://vulners.com/cve/CVE-2015-6564
|   CVE-2018-15919 5.0    https://vulners.com/cve/CVE-2018-15919
|   CVE-2017-15906 5.0    https://vulners.com/cve/CVE-2017-15906
|   SSV:90447       4.6    https://vulners.com/sebug/SSV:90447      *EX
PLOIT*
|   EDB-ID:45233  4.6    https://vulners.com/exploitdb/EDB-ID:45233*
EXPLOIT*
|   EDB-ID:45210  4.6    https://vulners.com/exploitdb/EDB-ID:45210*
EXPLOIT*
|   EDB-ID:45001  4.6    https://vulners.com/exploitdb/EDB-ID:45001*
EXPLOIT*
|   EDB-ID:45000  4.6    https://vulners.com/exploitdb/EDB-ID:45000*
EXPLOIT*
|   EDB-ID:40963  4.6    https://vulners.com/exploitdb/EDB-ID:40963*
EXPLOIT*
|   EDB-ID:40962  4.6    https://vulners.com/exploitdb/EDB-ID:40962*
EXPLOIT*
|   CVE-2016-0778  4.6    https://vulners.com/cve/CVE-2016-0778
|   CVE-2020-14145 4.3    https://vulners.com/cve/CVE-2020-14145
|   CVE-2015-5352  4.3    https://vulners.com/cve/CVE-2015-5352
|   CVE-2016-0777  4.0    https://vulners.com/cve/CVE-2016-0777
|   CVE-2015-6563  1.9    https://vulners.com/cve/CVE-2015-6563
80/tcp open  http       Apache httpd 2.4.10 ((Debian))
|_http-server-header: Apache/2.4.10 (Debian)
|_vulnerbs:
```

```
CVE-2018-1312    6.8      https://vulners.com/cve/CVE-2018-1312
CVE-2017-15715   6.8      https://vulners.com/cve/CVE-2017-15715
CVE-2017-9788    6.4      https://vulners.com/cve/CVE-2017-9788
CVE-2019-0217    6.0      https://vulners.com/cve/CVE-2019-0217
EDB-ID:47689     5.8      https://vulners.com/exploitdb/EDB-ID:47689*
EXPLOIT*
| CVE-2020-1927  5.8      https://vulners.com/cve/CVE-2020-1927
| CVE-2019-10098 5.8      https://vulners.com/cve/CVE-2019-10098
| 1337DAY-ID-33577 5.8      https://vulners.com/zdt/1337DAY-ID-33577
| *EXPLOIT*
| CVE-2016-5387  5.1      https://vulners.com/cve/CVE-2016-5387
| SSV:96537       5.0      https://vulners.com/sebug/SSV:96537      *EX
PLOIT*
| MSF:AUXILIARY/SCANNER/HTTP/APACHE_OPTIONSBLEED 5.0      https://vulners.com/metasploit/MSF:AUXILIARY/SCANNER/HTTP/APACHE_OPTIONSBLEED      *EX
PLOIT*
| EXPLOITPACK:DAED9B9E8D259B28BF72FC7FDC4755A7  5.0      https://vulners.com/exploitpack/EXPLOITPACK:DAED9B9E8D259B28BF72FC7FDC4755A7      *EX
PLOIT*
| EXPLOITPACK:C8C256BE0BFF5FE1C0405CB0AA9C075D  5.0      https://vulners.com/exploitpack/EXPLOITPACK:C8C256BE0BFF5FE1C0405CB0AA9C075D      *EX
PLOIT*
| CVE-2020-1934  5.0      https://vulners.com/cve/CVE-2020-1934
| CVE-2019-0220  5.0      https://vulners.com/cve/CVE-2019-0220
| CVE-2018-17199 5.0      https://vulners.com/cve/CVE-2018-17199
| CVE-2018-17189 5.0      https://vulners.com/cve/CVE-2018-17189
| CVE-2018-1303  5.0      https://vulners.com/cve/CVE-2018-1303
| CVE-2017-9798  5.0      https://vulners.com/cve/CVE-2017-9798
| CVE-2017-15710 5.0      https://vulners.com/cve/CVE-2017-15710
| CVE-2016-8743  5.0      https://vulners.com/cve/CVE-2016-8743
| CVE-2016-2161  5.0      https://vulners.com/cve/CVE-2016-2161
| CVE-2016-0736  5.0      https://vulners.com/cve/CVE-2016-0736
| CVE-2015-3183  5.0      https://vulners.com/cve/CVE-2015-3183
| CVE-2015-0228  5.0      https://vulners.com/cve/CVE-2015-0228
| CVE-2014-3583  5.0      https://vulners.com/cve/CVE-2014-3583
```

```

| AIAH   CVE-2019-10092  4.3    https://vulners.com/cve/CVE-2019-10092
| HK    CVE-2018-1302   4.3    https://vulners.com/cve/CVE-2018-1302
| AIAH   CVE-2018-1301   4.3    https://vulners.com/cve/CVE-2018-1301
| DF    CVE-2016-4975   4.3    https://vulners.com/cve/CVE-2016-4975
| DF    CVE-2015-3185   4.3    https://vulners.com/cve/CVE-2015-3185
| DF    CVE-2014-8109   4.3    https://vulners.com/cve/CVE-2014-8109
| 1337DAY-ID-33575   4.3    https://vulners.com/zdt/1337DAY-ID-
33575 *EXPLOIT*
|   CVE-2018-1283   3.5    https://vulners.com/cve/CVE-2018-1283
|   CVE-2016-8612   3.3    https://vulners.com/cve/CVE-2016-8612
|   PACKETSTORM:140265 0.0    https://vulners.com/packetstorm/PAC
KETSTORM:140265 *EXPLOIT*
|   EDB-ID:42745   0.0    https://vulners.com/exploitdb/EDB-ID:42745*
EXPLOIT*
|   EDB-ID:40961   0.0    https://vulners.com/exploitdb/EDB-ID:40961*
EXPLOIT*
|   1337DAY-ID-601   0.0    https://vulners.com/zdt/1337DAY-ID-601 *EX
PLOIT*
|   1337DAY-ID-2237 0.0    https://vulners.com/zdt/1337DAY-ID-2237 *EX
PLOIT*
|   1337DAY-ID-1415 0.0    https://vulners.com/zdt/1337DAY-ID-1415 *EX
PLOIT*
|   1337DAY-ID-1161 0.0    https://vulners.com/zdt/1337DAY-ID-1161 *EX
PLOIT*
111/tcp open  rpcbind      2-4 (RPC #100000)
  rpcinfo:
    program version  port/proto  service
    100000  2,3,4     111/tcp    rpcbind
    100000  2,3,4     111/udp    rpcbind
    100000  3,4       111/tcp6   rpcbind
    100000  3,4       111/udp6   rpcbind
    100024  1          35745/tcp6 status
    100024  1          43514/udp  status
    100024  1          56979/udp6 status
    100024  1          58763/tcp  status

```

Exploitation

The Red Team was able to penetrate `Target 1` and retrieve the following confidential data:

- Target 1

`flag1.txt` hash value_

B9bbcb33e11b80be759c4e844862482d

```
grep: run/samba/smbXsrv_open_global.tdb: Permission denied
grep: run/samba/smbXsrv_tcon_global.tdb: Permission denied
grep: run/samba/smbXsrv_session_global.tdb: Permission denied
grep: run/samba/smbXsrv_version_global.tdb: Permission denied
grep: run/samba/winbindd_privileged: Permission denied
grep: run/log/journal/28024023a7ec405f9c2a4688c222020f: Permission denied
grep: run/systemd/inaccessible: Permission denied
grep: spool/mqueue-client: Permission denied
grep: spool/rsyslog: Permission denied
grep: spool/mqueue: Permission denied
grep: spool/exim4: Permission denied
grep: spool/cron/atjobs: Permission denied
grep: spool/cron/crontabs: Permission denied
grep: spool/cron/atspool: Permission denied
grep: www/.bash_history: Permission denied
www/html/service.html:                                     ←— flag1{b9bbcb33e11b80be759c4e844862482d} →
michael@target1:/var$ █
```

- **Exploit Used**

- _TODO: Identify the exploit used_

Gain SSH Access to Servers by Brute-Forcing Credentials

Ssh michael@192.168.1.110

Password Guess was “michael”

Cd into Var and grep for flag1.txt

Command run: /var\$ grep -rw flag1 *

- `flag2.txt`: _ `flag2.txt` hash value_

Fc3fd58dcad9ab23faca6e9a36e581c

```
grep: spool/rsyslog: Permission denied
grep: spool/mqueue: Permission denied
grep: spool/exim4: Permission denied
grep: spool/cron/atjobs: Permission denied
grep: spool/cron/crontabs: Permission denied
grep: spool/cron/atspool: Permission denied
grep: www/.bash_history: Permission denied
www/html/wordpress/wp-includes/js/wp-emoji-loader.js:                                     flag, flag2, emoji
www/html/wordpress/wp-includes/js/wp-emoji-loader.js:                                     flag2 =
www/html/wordpress/wp-includes/js/wp-emoji-loader.js:                                     if ( fla
www/html/wordpress/wp-includes/js/wp-emoji-loader.js:                                     flag2 =
www/html/wordpress/wp-includes/js/wp-emoji-loader.js:                                     return f
www/html/wordpress/wp-includes/js/wp-emoji-loader.js:
www/Flag2.txt:flag2{fc3fd58dcad9ab23faca6e9a36e581c}
michael@target1:/var$ █
```

- ****Exploit Used****
- Identify the exploit used

Gain SSH Access to Servers by Brute-Forcing Credentials

Cd into Var directory and Grep for flag2.txt

Grep for flag2.txt

- The command to run

```
/var$ grep -rw flag2 *
```