

1. Use nmap tool with the -Pn flag to list the systems connected to the network 192.168.166.0/24.

```
Applications ▾ Places ▾ Terminal ▾ Tue 10:20
root@kali: ~
File Edit View Search Terminal Help
root@kali:~# nmap -Pn 192.168.166.0/24
Starting Nmap 7.70 ( https://nmap.org ) at 2019-03-19 10:19 CDT
Nmap scan report for 192.168.166.202
Host is up (0.00044s latency).
Not shown: 999 closed ports
PORT      STATE SERVICE
22/tcp    open  ssh
MAC Address: 00:0C:29:87:74:0F (VMware)

Nmap scan report for 192.168.166.254
Host is up (0.00019s latency).
Not shown: 974 closed ports
PORT      STATE SERVICE
21/tcp    open  ftp
25/tcp    open  smtp
42/tcp    open  nameserver
53/tcp    open  domain
80/tcp    open  http
89/tcp    open  kerberos-sec
135/tcp   open  msrpc
139/tcp   open  netbios-ssn
389/tcp   open  ldap
445/tcp   open  microsoft-ds
464/tcp   open  kpasswd5
593/tcp   open  http-rpc-epmap
636/tcp   open  ldapssl
1025/tcp  open  NFS-or-IIS
1026/tcp  open  LSA-or-nterm
1028/tcp  open  unknown
1038/tcp  open  mtap
1039/tcp  open  sbl
1043/tcp  open  boinc
1048/tcp  open  neod2
1049/tcp  open  td-postman
1067/tcp  open  instl_boots
1141/tcp  open  mxomss
3268/tcp  open  globalcatLDAP
3269/tcp  open  globalcatLDAPssl
3389/tcp  open  ms-wbt-server
MAC Address: 00:0C:29:32:71:F6 (VMware)

Nmap scan report for 192.168.166.201
Host is up (0.0000040s latency).
All 1000 scanned ports on 192.168.166.201 are closed

Nmap done: 256 IP addresses (3 hosts up) scanned in 31.48 seconds
root@kali:~#
```

2. Initialize Metasploit and use SYN scan auxiliary module to scan open ports in remote systems.

```
Applications ▾ Places ▾ Terminal ▾ Tue 10:37 root@kali: ~
File Edit View Search Terminal Help
msf auxiliary(scanner/portscan/syn) > set RHOSTS 192.168.166.202 192.168.166.254
RHOSTS => 192.168.166.202 192.168.166.254
msf auxiliary(scanner/portscan/syn) > show options
Module options (auxiliary/scanner/portscan/syn):
  Name      Current Setting  Required  Description
  ----  -
  BATCHSIZE 256             yes       The number of hosts to scan per set
  DELAY      0               yes       The delay between connections, per thread, in milliseconds
  INTERFACE  0               no        The name of the interface
  JITTER     0               yes       The delay jitter factor (maximum value by which to +/- DELAY) in milliseconds.
  PORTS      1-10000         yes       Ports to scan (e.g. 22-25,80,110-900)
  RHOSTS     192.168.166.202 192.168.166.254 yes       The target address range or CIDR identifier
  SNAPLEN    65535           yes       The number of bytes to capture
  THREADS    1               yes       The number of concurrent threads
  TIMEOUT    500             yes       The reply read timeout in milliseconds

msf auxiliary(scanner/portscan/syn) > run
[+] TCP OPEN 192.168.166.254:21
[+] TCP OPEN 192.168.166.202:22
[+] TCP OPEN 192.168.166.254:25
[+] TCP OPEN 192.168.166.254:42
[+] TCP OPEN 192.168.166.254:53
[+] TCP OPEN 192.168.166.254:80
[+] TCP OPEN 192.168.166.254:88
[+] TCP OPEN 192.168.166.254:135
[+] TCP OPEN 192.168.166.254:139
^C[*] caught interrupt from the console...
[*] Auxiliary module execution completed
msf auxiliary(scanner/portscan/syn) >
```

3. Describe the benefit(s) of using SYN scan vs TCP scan.

SYN scan drops the connection once port information is received from the target. If a SYN/ACK packet is received then the target port is listening, and if a RST/ACK packet is received then the port is not listening. On the other hand, TCP scan does not need administrative privileges on the source machine but is more susceptible to be detected by network monitoring systems due to the 3-way connection handshake.

4. Using the mc03_026_dcom Exploit and the windows/adduser Payload create the tom user and a password for TWXP0 and TW3P0 VMs



