# Review

Thursday, June 13, 2024 9:38 AM

**Link:** https://www.linkedin.com/learning/security-testing-nmap-security-scanning-14221942/scanning-network-ports-with-nmap
**Teacher:** Mike Chapple

**Length:** 1h 30m

**Rating:** 5/5
This course was fun and to the point. I was going to start with Mike Chapple's Vulnerability Management w/ Nessus course, but in the introduction, it was suggested to knock out his Nmap course first. I'm glad I took his advice and started with Nmap.

The course was very easy to follow along. It started with a brief overview of what Nmap is and how to download it on different operating systems. This part is a must so you can follow along with Mike and do the examples as he does them. Nmap is a tool that is best utilized by performing real-world tasks.

There was no difficulty in getting Nmap installed on my Kali Linux box. Mike provides four different servers at the end of the training that you can test your new skills on.

I have taken notes from this course and added them to my OneNote. Those notes are provided below.

# Network

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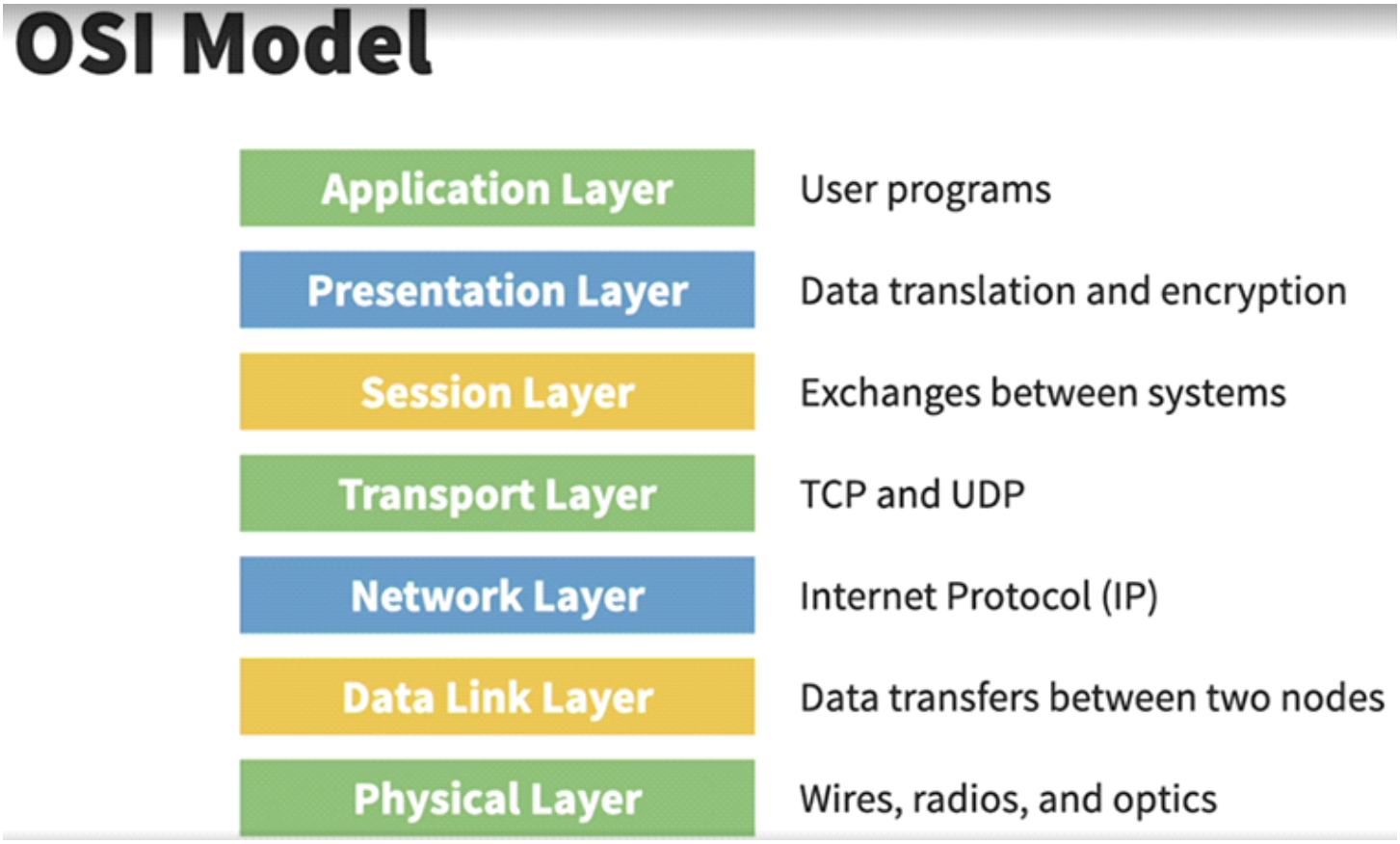
TCP - connection oriented; 3-way handshake, reliable
UDP - quicker, connectionless, used for voice and video apps




0 - 1,023 : well-known ports
1,024 - 49,151 : registered ports
49,152 - 65,535 : dynamic ports

Common Ports:

| | | | |
|---|---|---|---|
| Port 21 : FTP | Port 23 : Telnet | Port 53 : DNS | Port 3389 : RDP |
| Port 22 : SSH | Port 25 : SMTP | Port 137/138/139 : NetBIOS | Port 110 : POP |
| Port 143 : IMAP | Port 80 : HTTP | Port 443 : HTTPS | |
| | | | |

# Test Install

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nmap -V

nmap scanme.nmap.org

# Scanning

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## Port States in Nmap

| State | Description |
|---|---|
| open | Accepting connection requests |
| closed | No service responding to requests |
| filtered | Blocked by a firewall |
| unfiltered | Accessible, but scanner was unable to determine whether open or closed |

dig cmd to locate IP address of a URL
nmap x.x.x.x : example to perform scan on a single device
nmap x.x.x.x z.z.z.z c.c.c.c : example to scan multiple IPs
nmap 192.168.1.1,3,6 : shortened way to scan multiple Ips
nmap 192.168.1.1-6 : scan an IP range
nmap 192.168.1.0/29 : scan an entire subnet
nmap -6 : to scan IPV6 addresses

# Host Discovery Flags

| Flag | Purpose |
|---|---|
| -Pn | No host discovery |
| -PS | TCP SYN request |
| -PA | TCP ACK request |
| -PU | UDP request |
| -PE | ICMP echo request |
| -PR | ARP request |

nmap -n : to disable reverse DNS resolution

# TCP Scan Types

| Flag | Description |
|---|---|
| -sS | TCP SYN Scan |
| -sT | TCP Connect Scan |
| -sN | TCP NULL Scan |
| -sF | TCP FIN Scan |
| -sX | TCP Xmas Scan |
| -sA | TCP ACK Scan |
| -sW | TCP Window Scan |
| -sM | TCP Maimon Scan |

nmap -F : scans only top 100 ports
nmap -p : scan specific ports
Ex nmap -p 80,443
Ex nmap -p http,https

nmap -p- : scans all TCP ports

# Nmap Timing Templates

| Template | Description |
|---|---|
| -T5 | Insane |
| -T4 | Aggressive |
| -T3 | Normal |
| -T2 | Polite |
| -T1 | Sneaky |
| -T0 | Paranoid |

nmap -O : to detect OS of target
nmap -sV : svc version running on an open port
nmap -A : remote OS detection; svc & version detection; traceroute; nmap scripting engine (NSE)

# Output

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## Nmap Output Formats

| Flag | Description |
|---|---|
| -oN | Human-readable text file |
| -oX | Machine-readable XML file |
| -oG | Grepable text file |

nmap -v : scan in verbose mode
nmap -vv : scan very verbosely