eJPT Lab : Network Discovery with Nmap, ARP-Scan and Netdiscover
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Objective

The goal of this lab is to demonstrate the ability to locate active endpoints on a local network using tools such as *arp-scan. netdiscover, and nmap.* This is aligned with eJPT's *Assessment Methodologies domain*: 'Locate endpoints on a network' and *Host and Networking Auditing:* 'Transfer files to and from target' & 'Compile information from files on target'

Tools

OS & Platforms
Win11 Desktop - Host
Proxmox Virtual Environment - via GUI @192.168.4.15
Kali Linux - Attacker VM @192.168.4.25

Network Discovery Tools
arp-scan
nmap
netdiscover
File Transfer / Remote Access
ssh
scp

Environment/Setup

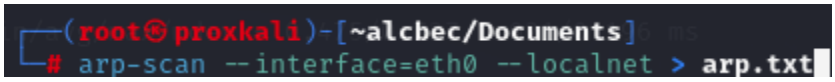
The lab was executed in a Proxmox virtualized environment. The Kali Linux machine (192.168.4.25) acted as the attacker system. Multiple other devices—including routers, smart devices, and other endpoints—were present on the 192.168.4.0/24 subnet, simulating a real-world internal network.

Methodology/Steps

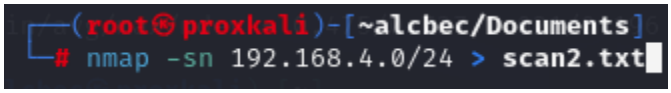
Locate endpoints on a network

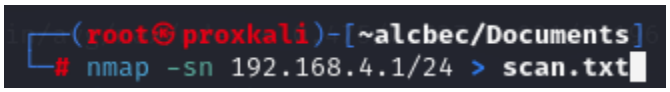
The files and commands that produced them are listed below:

arp.txt - arp scan

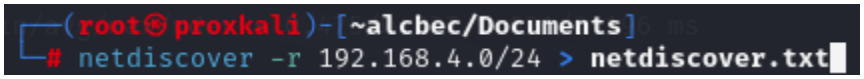


scan.txt & scan2.txt - nmap ping sweep





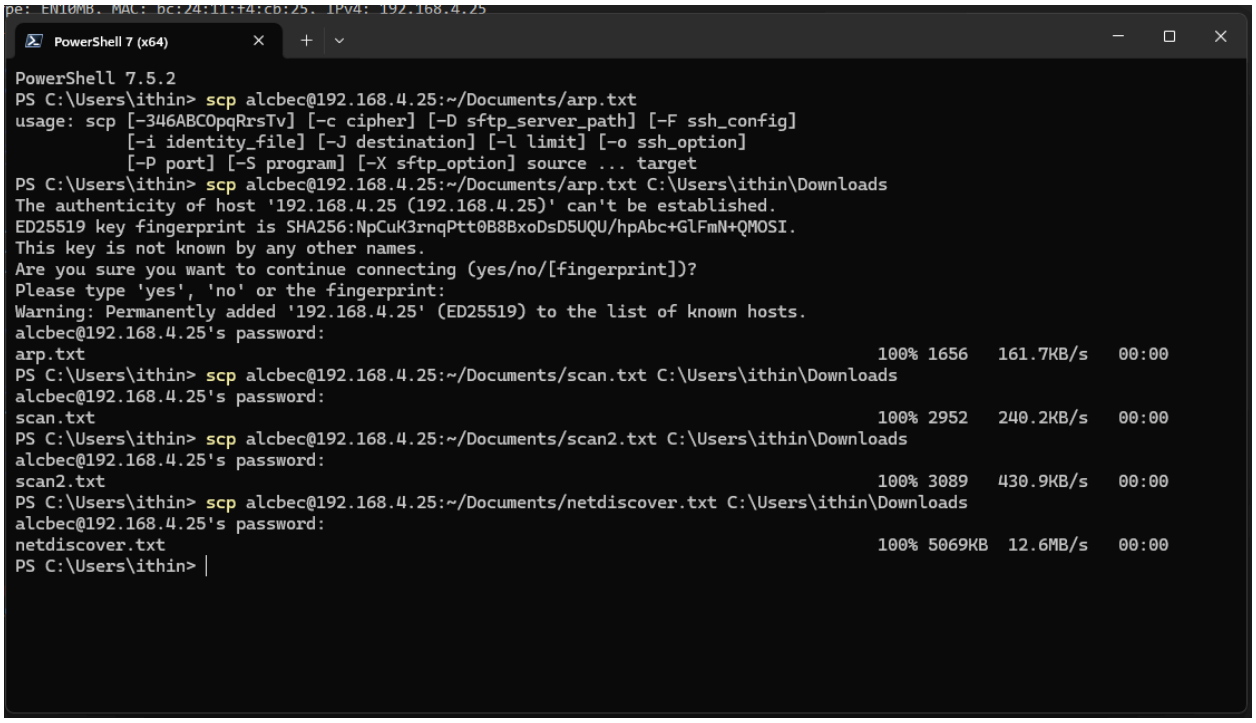
netdiscover.txt - netdiscover passive listening



Transfer files to and from target & Compile information from files on target

Setting up Secure Copy over SSH - Secure FIle Transfer to Host

Within Kali: sudo systemctl start ssh
Within requesting machine: scp alcbec@192.168.4.25:~/Documents/'targetfile'.txt C:\Users\yourprofile\Downloads\



Lessons Learned/Reflection

- Installing VMs takes forever (talking to you kali & parrotOS)
- Netdiscover was nice to list/discover devices by listening for arp requests on the LAN passively. Enabled with ability to have insights in volume, mac address ip and vendor.
- Arp-scan can send requests and record their responses with ip/mac info to enumerate active devices for ip address, mac address and vendor
- Nmap -sn performed host discovery using an ARP request determining who has IPs within the subnet, logging up IPs and their MAC addresses & vendor

Appendix

Raw Output arp.txt

Interface: eth0, type: EN10MB, MAC: bc:24:11:f4:cb:25, IPv4: 192.168.4.25
Starting arp-scan 1.10.0 with 256 hosts (https://github.com/royhills/arp-scan)
192.168.4.1 30:57:8e:5d:ff:12 eero inc.
192.168.4.15 04:d4:c4:6f:53:2d ASUSTek COMPUTER INC.
192.168.4.20 04:d4:c4:8f:4c:22 ASUSTek COMPUTER INC.
192.168.4.57 c8:34:8e:53:ca:5d Intel Corporate
192.168.4.40 40:a9:cf:d7:6c:d8 Amazon Technologies Inc.
192.168.4.66 ec:8a:c4:01:16:a4 Amazon Technologies Inc.
192.168.4.53 08:7c:39:02:e5:2e Amazon Technologies Inc.
192.168.4.52 c8:3a:6b:e5:62:f4 Roku, Inc
192.168.4.22 88:57:1d:7d:57:aa Seongji Industry Company
192.168.4.36 c8:47:8c:10:37:76 Beken Corporation
192.168.4.35 c8:47:8c:01:31:43 Beken Corporation
192.168.4.37 c8:47:8c:01:31:86 Beken Corporation
192.168.4.54 10:59:32:eb:1f:1b Roku, Inc
192.168.4.57 c8:34:8e:53:ca:5d Intel Corporate (DUP: 2)
192.168.4.41 cc:6a:10:28:2a:67 The Chamberlain Group, Inc
192.168.4.50 40:ca:63:c3:3b:7a Seongji Industry Company
192.168.4.51 40:ca:63:bf:f8:5e Seongji Industry Company
192.168.4.64 70:89:76:c7:c8:cb Tuya Smart Inc.
192.168.4.67 c8:47:8c:40:2b:2c Beken Corporation
192.168.4.84 6c:29:90:f9:b6:3c WiZ Connected Lighting Company Limited
192.168.4.91 2c:aa:8e:58:41:87 Wyze Labs Inc
192.168.4.73 2c:aa:8e:3c:c7:b9 Wyze Labs Inc
192.168.4.57 c8:34:8e:53:ca:5d Intel Corporate (DUP: 3)
192.168.4.57 c8:34:8e:53:ca:5d Intel Corporate (DUP: 4)
192.168.4.57 c8:34:8e:53:ca:5d Intel Corporate (DUP: 5)
192.168.4.57 c8:34:8e:53:ca:5d Intel Corporate (DUP: 6)

26 packets received by filter, 0 packets dropped by kernel
Ending arp-scan 1.10.0: 256 hosts scanned in 4.331 seconds (59.11 hosts/sec). 21 responded

Raw Output scan2.txt

Starting Nmap 7.94SVN (https://nmap.org) at 2025-07-02 01:49 EDT
Nmap scan report for 192.168.4.1
Host is up (0.023s latency).
MAC Address: 30:57:8E:5D:FF:12 (eero)
Nmap scan report for 192.168.4.15
Host is up (0.00022s latency).
MAC Address: 04:D4:C4:6F:53:2D (ASUSTek Computer)
Nmap scan report for 192.168.4.20
Host is up (0.0022s latency).
MAC Address: 04:D4:C4:8F:4C:22 (ASUSTek Computer)
Nmap scan report for 192.168.4.22
Host is up (0.12s latency).
MAC Address: 88:57:1D:7D:57:AA (Seongji Industry Company)
Nmap scan report for 192.168.4.35
Host is up (0.023s latency).
MAC Address: C8:47:8C:01:31:43 (Beken)
Nmap scan report for 192.168.4.36
Host is up (0.066s latency).
MAC Address: C8:47:8C:10:37:76 (Beken)
Nmap scan report for 192.168.4.37
Host is up (0.090s latency).
MAC Address: C8:47:8C:01:31:86 (Beken)
Nmap scan report for 192.168.4.40
Host is up (1.4s latency).
MAC Address: 40:A9:CF:D7:6C:D8 (Amazon Technologies)
Nmap scan report for 192.168.4.41
Host is up (0.10s latency).
MAC Address: CC:6A:10:28:2A:67 (The Chamberlain Group)
Nmap scan report for 192.168.4.50
Host is up (0.11s latency).
MAC Address: 40:CA:63:C3:3B:7A (Seongji Industry Company)
Nmap scan report for 192.168.4.51

Host is up (0.098s latency).
MAC Address: 40:CA:63:BF:F8:5E (Seongji Industry Company)
Nmap scan report for 192.168.4.53
Host is up (0.14s latency).
MAC Address: 08:7C:39:02:E5:2E (Amazon Technologies)
Nmap scan report for 192.168.4.54
Host is up (0.047s latency).
MAC Address: 10:59:32:EB:1F:1B (Roku)
Nmap scan report for 192.168.4.57
Host is up.
MAC Address: C8:34:8E:53:CA:5D (Intel Corporate)
Nmap scan report for 192.168.4.64
Host is up (0.060s latency).
MAC Address: 70:89:76:C7:C8:CB (Tuya Smart)
Nmap scan report for 192.168.4.66
Host is up (0.0084s latency).
MAC Address: EC:8A:C4:01:16:A4 (Amazon Technologies)
Nmap scan report for 192.168.4.67
Host is up (0.056s latency).
MAC Address: C8:47:8C:40:2B:2C (Beken)
Nmap scan report for 192.168.4.73
Host is up (0.12s latency).
MAC Address: 2C:AA:8E:3C:C7:B9 (Wyze Labs)
Nmap scan report for 192.168.4.82
Host is up (0.035s latency).
MAC Address: D8:EB:46:B1:61:1E (Google)
Nmap scan report for 192.168.4.84
Host is up (0.19s latency).
MAC Address: 6C:29:90:F9:B6:3C (WiZ Connected Lighting Company Limited)
Nmap scan report for 192.168.4.85
Host is up (0.038s latency).
MAC Address: A8:BB:50:83:1B:11 (WiZ IoT Company Limited)
Nmap scan report for 192.168.4.86
Host is up (0.19s latency).
MAC Address: A8:BB:50:C3:D7:82 (WiZ IoT Company Limited)

Nmap scan report for 192.168.4.88
Host is up (0.097s latency).
MAC Address: A8:BB:50:C3:AC:49 (WiZ IoT Company Limited)
Nmap scan report for 192.168.4.89
Host is up (0.18s latency).
MAC Address: A8:BB:50:E5:D6:A8 (WiZ IoT Company Limited)
Nmap scan report for 192.168.4.90
Host is up (0.19s latency).
MAC Address: A8:BB:50:C3:AC:A6 (WiZ IoT Company Limited)
Nmap scan report for 192.168.4.91
Host is up (0.033s latency).
MAC Address: 2C:AA:8E:58:41:87 (Wyze Labs)
Nmap scan report for 192.168.4.25
Host is up.
Nmap done: 256 IP addresses (27 hosts up) scanned in 10.57 seconds

Raw Output scan.txt

Starting Nmap 7.94SVN (https://nmap.org) at 2025-07-02 01:43 EDT
Nmap scan report for 192.168.4.1
Host is up (0.0052s latency).
MAC Address: 30:57:8E:5D:FF:12 (eero)
Nmap scan report for 192.168.4.15
Host is up (0.00028s latency).
MAC Address: 04:D4:C4:6F:53:2D (ASUSTek Computer)
Nmap scan report for 192.168.4.20
Host is up (0.0015s latency).
MAC Address: 04:D4:C4:8F:4C:22 (ASUSTek Computer)
Nmap scan report for 192.168.4.35
Host is up (0.078s latency).
MAC Address: C8:47:8C:01:31:43 (Beken)
Nmap scan report for 192.168.4.36
Host is up (0.098s latency).
MAC Address: C8:47:8C:10:37:76 (Beken)
Nmap scan report for 192.168.4.37

Host is up (0.084s latency).
MAC Address: C8:47:8C:01:31:86 (Beken)
Nmap scan report for 192.168.4.40
Host is up (0.0023s latency).
MAC Address: 40:A9:CF:D7:6C:D8 (Amazon Technologies)
Nmap scan report for 192.168.4.41
Host is up (0.099s latency).
MAC Address: CC:6A:10:28:2A:67 (The Chamberlain Group)
Nmap scan report for 192.168.4.50
Host is up (0.088s latency).
MAC Address: 40:CA:63:C3:3B:7A (Seongji Industry Company)
Nmap scan report for 192.168.4.51
Host is up (0.092s latency).
MAC Address: 40:CA:63:BF:F8:5E (Seongji Industry Company)
Nmap scan report for 192.168.4.52
Host is up (0.14s latency).
MAC Address: C8:3A:6B:E5:62:F4 (Roku)
Nmap scan report for 192.168.4.53
Host is up (0.14s latency).
MAC Address: 08:7C:39:02:E5:2E (Amazon Technologies)
Nmap scan report for 192.168.4.54
Host is up (0.19s latency).
MAC Address: 10:59:32:EB:1F:1B (Roku)
Nmap scan report for 192.168.4.57
Host is up.
MAC Address: C8:34:8E:53:CA:5D (Intel Corporate)
Nmap scan report for 192.168.4.64
Host is up (0.15s latency).
MAC Address: 70:89:76:C7:C8:CB (Tuya Smart)
Nmap scan report for 192.168.4.66
Host is up (0.0056s latency).
MAC Address: EC:8A:C4:01:16:A4 (Amazon Technologies)
Nmap scan report for 192.168.4.67
Host is up (0.099s latency).
MAC Address: C8:47:8C:40:2B:2C (Beken)

Nmap scan report for 192.168.4.73
Host is up (0.16s latency).
MAC Address: 2C:AA:8E:3C:C7:B9 (Wyze Labs)
Nmap scan report for 192.168.4.82
Host is up (0.056s latency).
MAC Address: D8:EB:46:B1:61:1E (Google)
Nmap scan report for 192.168.4.84
Host is up (0.19s latency).
MAC Address: 6C:29:90:F9:B6:3C (WiZ Connected Lighting Company Limited)
Nmap scan report for 192.168.4.85
Host is up (0.029s latency).
MAC Address: A8:BB:50:83:1B:11 (WiZ IoT Company Limited)
Nmap scan report for 192.168.4.86
Host is up (0.19s latency).
MAC Address: A8:BB:50:C3:D7:82 (WiZ IoT Company Limited)
Nmap scan report for 192.168.4.88
Host is up (0.071s latency).
MAC Address: A8:BB:50:C3:AC:49 (WiZ IoT Company Limited)
Nmap scan report for 192.168.4.90
Host is up (0.18s latency).
MAC Address: A8:BB:50:C3:AC:A6 (WiZ IoT Company Limited)
Nmap scan report for 192.168.4.91
Host is up (0.19s latency).
MAC Address: 2C:AA:8E:58:41:87 (Wyze Labs)
Nmap scan report for 192.168.4.25
Host is up.
Nmap done: 256 IP addresses (26 hosts up) scanned in 4.04 seconds

Raw Output netdiscover.txt

1245 Captured ARP Req/Rep packets, from 35 hosts. Total size: 90614

IP	At MAC Address	Count	Len	MAC Vendor / Hostname
192.168.4.15	04:d4:c4:6f:53:2d	1	42	ASUSTek COMPUTER INC.
192.168.4.20	04:d4:c4:8f:4c:22	5	300	ASUSTek COMPUTER INC.
192.168.4.40	40:a9:cf:d7:6c:d8	23	1646	Amazon Technologies Inc.
192.168.4.66	ec:8a:c4:01:16:a4	17	1202	Amazon Technologies Inc.
192.168.4.41	cc:6a:10:28:2a:67	1	60	The Chamberlain Group, Inc
192.168.4.52	c8:3a:6b:e5:62:f4	1	60	Roku, Inc
192.168.4.53	08:7c:39:02:e5:2e	1	60	Amazon Technologies Inc.
192.168.4.82	d8:eb:46:b1:61:1e	1	60	Google, Inc.
192.168.4.51	40:ca:63:bf:f8:5e	1	60	Seongji Industry Company
192.168.4.50	40:ca:63:c3:3b:7a	2	120	Seongji Industry Company
192.168.4.22	88:57:1d:7d:57:aa	75	5536	Seongji Industry Company
192.168.4.36	c8:47:8c:10:37:76	3	208	Beken Corporation
192.168.4.35	c8:47:8c:01:31:43	12	874	Beken Corporation
192.168.4.37	c8:47:8c:01:31:86	8	578	Beken Corporation
192.168.4.54	10:59:32:eb:1f:1b	2	134	Roku, Inc
192.168.4.57	c8:34:8e:53:ca:5d	1	60	Intel Corporate
192.168.4.64	70:89:76:c7:c8:cb	4	282	Tuya Smart Inc.
192.168.4.67	c8:47:8c:40:2b:2c	7	504	Beken Corporation
192.168.4.73	2c:aa:8e:3c:c7:b9	1	60	Wyze Labs Inc
192.168.4.34	38:1f:8d:ab:0f:d6	12	888	Tuya Smart Inc.
192.168.6.147	c4:82:e1:4d:df:99	9	666	Unknown vendor
192.168.6.103	7c:78:b2:ca:04:a7	24	1776	Wyze Labs Inc
192.168.4.84	6c:29:90:f9:b6:3c	26	1924	WiZ Connected Lighting Company Limited
192.168.4.33	c8:47:8c:30:29:6c	13	962	Beken Corporation
192.168.4.68	c8:47:8c:40:2a:02	16	1184	Beken Corporation
192.168.6.70	fc:d7:49:2d:3f:6b	22	1586	Amazon Technologies Inc.