

Yengkong Sayaovong

Lab 7: Cloud Security

Protections

2/12/23

A. TCP/IP networking Utilities

1. To begin, you must first click on the windows start menu and open the command prompt. After opening the command prompt, you enter IPconfig/all command which then displayed all the computer network parameters and configurations information for TCP/IP network information. This also allows the MAC address to be displayed. ARP command is then used to display the internet to adapter address. ARP command is responsible for getting the IP address into the MAC address. NETSTAT command is then used to display the network connections and port activity. Additionally, the NBT^STAT command will show the list of remote machine names. The NET VIEW command allows to access the list of nodes on the LAN. This is to view the devices that is connected to the network. TRACERT command is then used to view trace routes that each data packets are taking to get to its final destination. PING command is then used to test network issues.
2. Answer the questions:
 - i. Which command-line utility program is used to find the primary DNS suffix, IPv4 and IPv6 addresses for your computer? **Ipconfig**
 - ii. The **Ping** command causes a data packet to be sent to a specific IP address and then returns to the initiating machine.
 - iii. Which command detects whether routers along a communication path are functioning? **Tracert**
 - iv. Which utility program is used to examine current network connections?
Netstat
 - v. The **ARP** utility is used to map IP address to MAC addresses?

- vi. Which utility command is used to examine a list of all the shared devices on a LAN? **Net View**
- vii. The **ARP** utility is used to map IP addresses to MAC addresses?
- viii. Which utility command is used to examine a list of all the shared devices on a LAN? **Netstat**

B. Red Team Intelligence Gathering

1. Step 1: Using the PING command from the above section, gather the IP address of Amazon.com, Microsoft.com, Google.com and/or your favorite web page.

i.

```
Command Prompt
Microsoft Windows [Version 10.0.19045.2486]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ysaya>ping amazon.com

Pinging amazon.com [52.94.236.248] with 32 bytes of data:
Reply from 52.94.236.248: bytes=32 time=30ms TTL=234
Reply from 52.94.236.248: bytes=32 time=30ms TTL=234
Reply from 52.94.236.248: bytes=32 time=31ms TTL=234
Reply from 52.94.236.248: bytes=32 time=29ms TTL=234

Ping statistics for 52.94.236.248:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 29ms, Maximum = 31ms, Average = 30ms

C:\Users\ysaya>
```

ii.

```
Command Prompt
Microsoft Windows [Version 10.0.19045.2486]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ysaya>ping facebook.com

Pinging facebook.com [2a03:2880:f10d:83:face:b00c:0:25de] with 32 bytes of data:
Reply from 2a03:2880:f10d:83:face:b00c:0:25de: time=57ms
Reply from 2a03:2880:f10d:83:face:b00c:0:25de: time=57ms
Reply from 2a03:2880:f10d:83:face:b00c:0:25de: time=57ms
Reply from 2a03:2880:f10d:83:face:b00c:0:25de: time=57ms

Ping statistics for 2a03:2880:f10d:83:face:b00c:0:25de:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 57ms, Maximum = 57ms, Average = 57ms

C:\Users\ysaya>
```

iii.

```
Command Prompt
Microsoft Windows [Version 10.0.19045.2486]
(c) Microsoft Corporation. All rights reserved.

C:\Users\ysaya>ping google.com

Pinging google.com [2607:f8b0:4009:80b::200e] with 32 bytes of data:
Reply from 2607:f8b0:4009:80b::200e: time=9ms
Reply from 2607:f8b0:4009:80b::200e: time=9ms
Reply from 2607:f8b0:4009:80b::200e: time=9ms
Reply from 2607:f8b0:4009:80b::200e: time=8ms

Ping statistics for 2607:f8b0:4009:80b::200e:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 8ms, Maximum = 9ms, Average = 8ms

C:\Users\ysaya>
```

2. Step 2: Using the MX Toolbox.com Super Tool, lookup and provide the following for (A) one of the large companies mentioned above, as well as (B) one Not mentioned above.:

MX TOOLBOX

Pricing Tools Delivery Center Mont

SuperTool MX Lookup Blacklists DMARC Diagnostics Email Health DNS Lookup Analyze Headers

SuperTool Beta?

google.com MX Lookup

mx:google.com Find Problems Solve Email Delivery Problems

Pref	Hostname	IP Address	TTL	
10	smtp.google.com	142.251.16.27 Range 142.251.16.0	5 min	Blacklist Check SMTP Test
10	smtp.google.com	2097.88d:40d4:c17::1b	5 min	Blacklist Check

Test	Result
DMARC Record Published	DMARC Record found
DMARC Policy Not Enabled	DMARC Quarantine/Reject policy enabled
DNS Record Published	DNS Record found

dns lookup dns check dmARC lookup SPF lookup dns propagation

Reported by ns1.google.com on 2/12/2023 at 6:18:23 PM (UTC -5) just for you

Transcript

i.

SuperTool Beta?

asu.edu MX Lookup

mx:asu.edu Find Problems Solve Email Delivery Problems

Pref	Hostname	IP Address	TTL	
5	mx-a-00142c01.gslb.pphosted.com	148.163.148.157 Pphosted, Inc. (AS50211)	120 min	Blacklist Check SMTP Test
5	mx-b-00142c01.gslb.pphosted.com	148.163.148.157 Pphosted, Inc. (AS50211)	120 min	Blacklist Check SMTP Test

Test	Result
DMARC Policy Not Enabled	DMARC Quarantine/Reject policy not enabled
DMARC Record Published	DMARC Record found
DNS Record Published	DNS Record found

More info

ii.

C. Terminology

Answer the questions:

- What is DMARC and why might it be needed? **DMARC adds an important function for reporting. It prevents hackers from hacking into your domain.**
- What is typosquatting? **Typosquatting is a domain that imitates the URL address of a browser in hopes that a user misspell an address to lead them to a vulnerable site.**
- What is N+1 from an IT context and what is its value in ensuring availability? **N+1 is an operational component that allows for the network to run as required.**
- What security benefits does the cloud provide? **The cloud can provide many benefits to a company that chooses to utilize cloud computing.**
- What security disadvantages are inherent to the cloud? **The most obvious would be the risk of storing important information not onsite.**

D. Cloud infrastructure

- Find a map of an AWS or Azure cloud infrastructure.

- i. Explain how or where this infrastructure might be insecure or more secure compared to a similar on-premises solution. **The map of the AWS diagram shows areas of insecurity at all levels. These areas can be from anytime there are connections to the servers.**
- ii. What could be done to improve the security of design, if not already listed on the diagram? **To ensure security breach, there should be authorization at each level and a two-factor authentication.**

E. Emphasis on HTTPS

- 1. Describe why you believe that Google decided to reduce its page ranks for sites that are not HTTPS-enabled. **The reason what to set a standard for secure web pages to follow the model of security certificate sites that uses HTTPS.**

Citations:

- 12 benefits of cloud computing and its advantages. (n.d.). Retrieved February 13, 2023, from <https://www.salesforce.com/products/platform/best-practices/benefits-of-cloud-computing/>
- Bradbury, D., Bradbury, D., Says:, M., Says:, A., Says:, P., Ducklin, P., & Writer, N. (2019, July 18). Still not using HTTPS? firefox is about to shame you. Retrieved February 13, 2023, from <https://nakedsecurity.sophos.com/2019/07/18/still-not-using-https-firefox-is-about-to-shame-you/>
- Brooks, C. (nan). Cybersecurity Essentials. Retrieved February 13, 2023, from <https://www.amazon.com/Cybersecurity-Essentials-Charles-J-Brooks/dp/1119362393>
- Data Center Redundancy: N+1, N+2 vs. 2N vs. 2n+1 (part II). (n.d.). Retrieved February 13, 2023, from <https://www.datacenters.com/news/data-center-redundancy-n-1-n-2-vs-2n-vs-2n-1-part-ii>
- McAfee. (2022, November 16). What is internet security? Retrieved February 13, 2023, from <https://www.mcafee.com/blogs/internet-security/what-is-internet-security/>
- What is DMARC? what you need to know in 2021. (n.d.). Retrieved February 13, 2023, from <https://www.dmarcanalyzer.com/dmarc/#:~:text=DMARC%20adds%20an%20important%20function,on%20behalf%20of%20their%20domain.&text=You%20can%20use%20DMARC%20to,in%20phishing%20or%20spoofing%20attacks.>