DOP: / /2023 **DOS: / /2023**

Experiment No: 07

Aim: Study the use of network reconnaissance tools like WHOIS, dig, traceroute, nslookup to gather information about networks and domain registrars.

Theory:

🔷Reconnaissance :

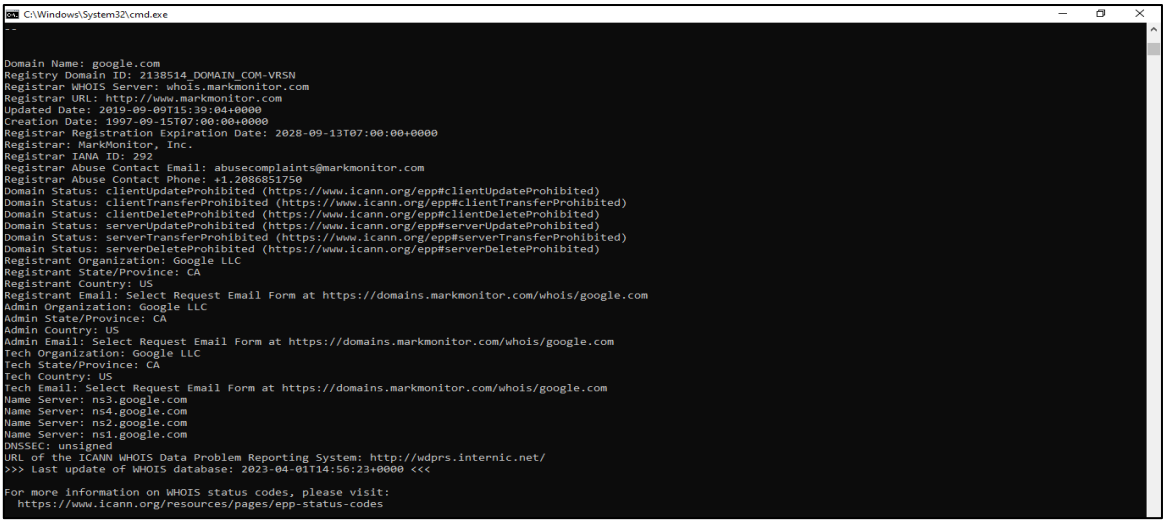
Reconnaissance is the information-gathering stage of ethical hacking, where you collect data about the target system. This data can include anything from network infrastructure to employee contact details. The goal of reconnaissance is to identify as many potential attack vectors as possible.

🔷WHOIS:

The whois command displays information about a website's record. You may get all the information about a website regarding its registration and owner's information.

whois **<websiteName>**

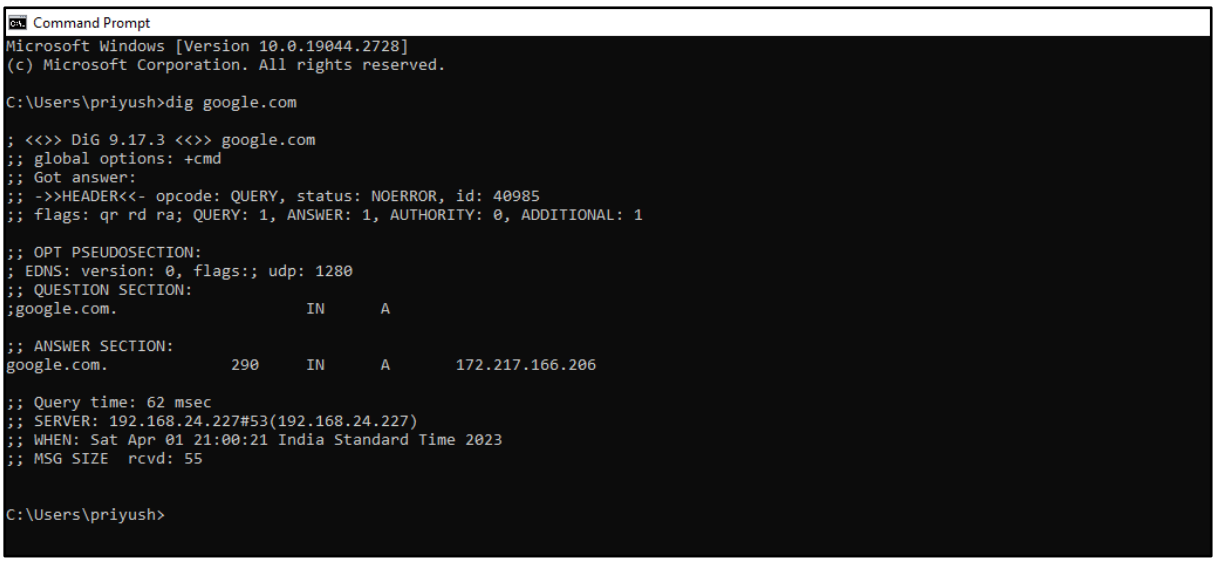
```
C:\Windows\System32\cmd.exe
Microsoft Windows [Version 10.0.19044.2728]
(c) Microsoft Corporation. All rights reserved.

C:\Users\priyush\Desktop\whois>whois google.com

Whois v1.21 - Domain information lookup
Copyright (C) 2005-2019 Mark Russinovich
Sysinternals - www.sysinternals.com

Connecting to COM.whois-servers.net...

WHOIS Server: whois.markmonitor.com
   Registrar URL: http://www.markmonitor.com
   Updated Date: 2019-09-09T15:39:04Z
   Creation Date: 1997-09-15T04:00:00Z
   Registry Expiry Date: 2028-09-14T04:00:00Z
   Registrar: MarkMonitor Inc.
   Registrar IANA ID: 292
   Registrar Abuse Contact Email: abusecomplaints@markmonitor.com
   Registrar Abuse Contact Phone: +1.2086851750
   Domain Status: clientDeleteProhibited https://icann.org/epp#clientDeleteProhibited
   Domain Status: clientTransferProhibited https://icann.org/epp#clientTransferProhibited
   Domain Status: clientUpdateProhibited https://icann.org/epp#clientUpdateProhibited
   Domain Status: serverDeleteProhibited https://icann.org/epp#serverDeleteProhibited
   Domain Status: serverTransferProhibited https://icann.org/epp#serverTransferProhibited
   Domain Status: serverUpdateProhibited https://icann.org/epp#serverUpdateProhibited
   Name Server: NS1.GOOGLE.COM
   Name Server: NS2.GOOGLE.COM
   Name Server: NS3.GOOGLE.COM
   Name Server: NS4.GOOGLE.COM
   DNSSEC: unsigned
   URL of the ICANN Whois Inaccuracy Complaint Form: https://www.icann.org/wicf/
>>> Last update of whois database: 2023-04-01T15:03:47Z <<<
```



🔷dig:

Linux dig command stands for **Domain Information Groper**. This command is used for tasks related to DNS lookup to query DNS name servers. It mainly deals with troubleshooting DNS related problems. It is a flexible utility for examining the DNS (Domain Name Servers). It is used to perform the DNS lookups and returns the queried answers from the name server. Usually, it is used by most DNS administrators to troubleshoot the DNS problems. It is a straightforward tool and provides a clear output. It is more functional than other lookups tools.

dig @server name type

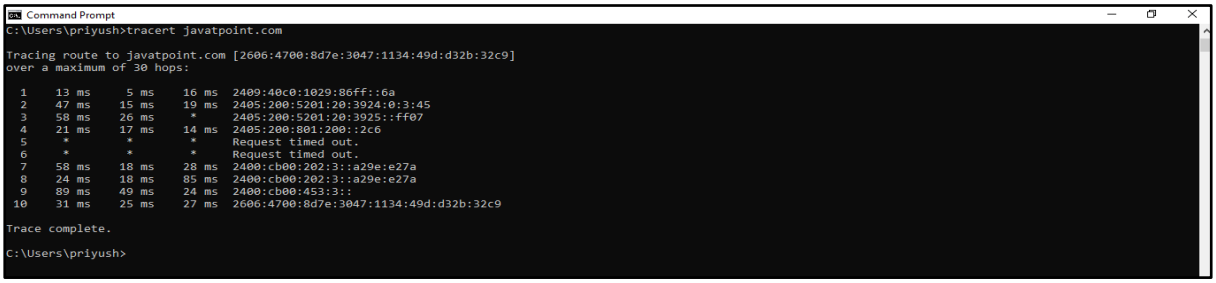


🔷traceroute:

traceroute is a network troubleshooting utility that helps us determine the number of hops and packets traveling path required to reach a destination. It is used to display how the data transmitted from a local machine to a remote machine. Loading a web page is one of the common examples of the traceroute.

Traceroute prints the route that packets take to a network host. Traceroute utility uses the TTL field in the IP header to achieve its operation. For users who are new to TTL field, this field describes how much hops a particular packet will take while traveling on network.

traceroute [OPTION...] HOST



🔷nslookup:

nslookup is a great utility for diagnosing DNS name resolution problems. Just type the nslookup command, and Windows will display the name and IP address of the device's default DNS server. From there, you can type host names in an effort to see if the DNS server is able to resolve the specified host name.

The nslookup command is used to query internet name servers interactively for information. nslookup, which stands for "name server lookup", is a useful tool for finding out information about a named domain. By default, nslookup will translate a domain name to an IP address (or vice versa).

nslookup **<domainName>**

Conclusion: -

In this experiment you learned how to take the first steps toward ethical hacking. Information gathering, in the form of reconnaissance, foot printing, and social engineering, is necessary to learn as much about the target as possible. By following the information-gathering methodology, ethical hackers can ensure they are not missing any steps and valuable information. Time spent in the information gathering phase is well worth it toss peed up and produce successful hacking exploits.