Dig Command

Objective:

Learn how to use the Dig command to gather DNS information.

Purpose:

Dig stands for Domain Information Groper. It is a tool for querying DNS nameservers for information about host addresses, mail exchanges, nameservers and related information.

Tool:

Kali Linux.

Topology:

You can use Kali Linux for this lab.

Walkthrough:

Task 1:

Dig is a tool which can be used on either Linux or Mac OS. Dig comes pre-installed on Kali Linux and you can check its version using the following command:

dig -v

The dig syntax looks like the following:

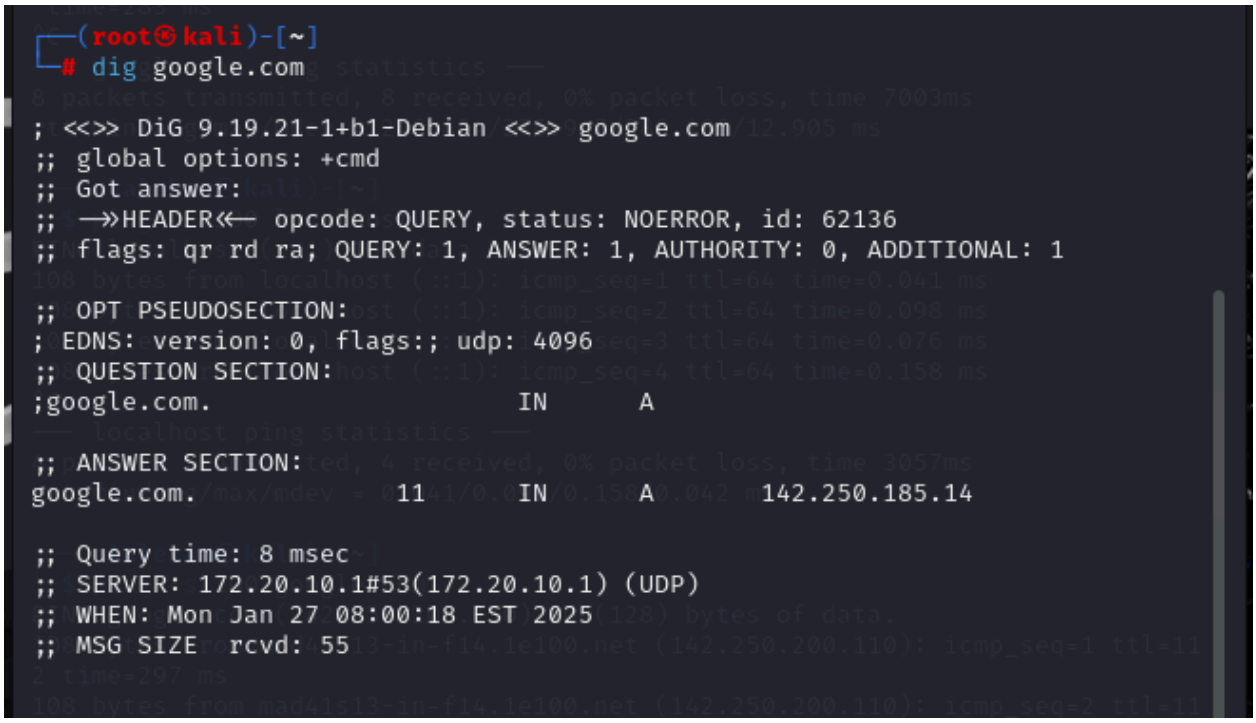
Dig [server] [name] [type]

We will begin by performing a simple dig command. Type the following into a terminal:

dig google.com

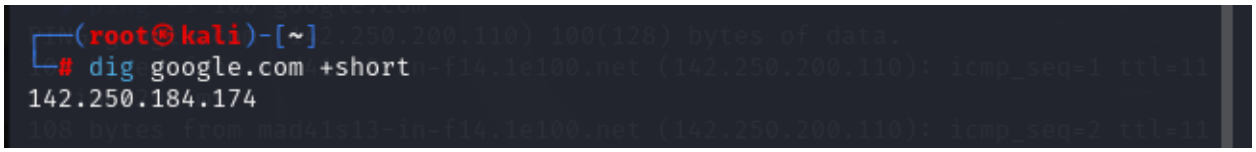
Task 2:

The above command will include several information. There may be a time when you only want the



result of the query. This can be achieved in dig with the following command:

dig google.com +short



As you can see, there can be more than one IP for a host record.

Task 3:

This next command will get rid of all information before the answer section, for easier reading. We can specify this using the following command:

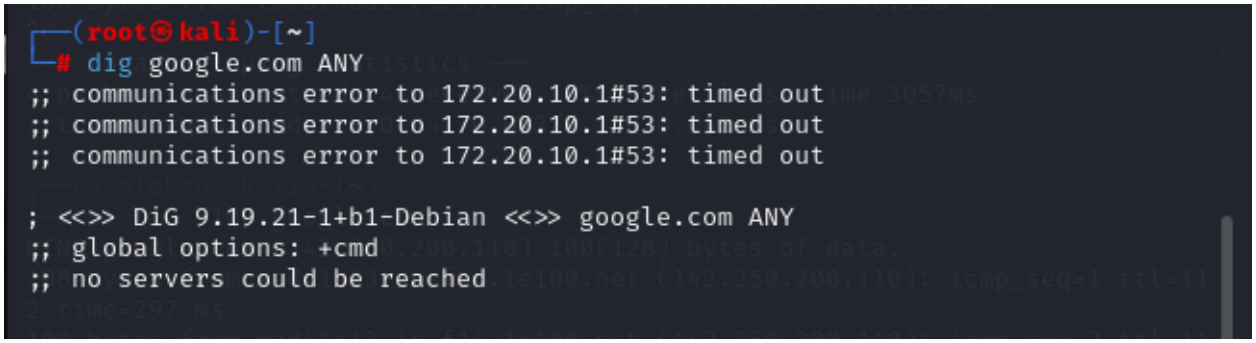
Task 4:

We can also specify the nameservers we wish to query using the following command:

This command queries the “google.com” record from the Name Server with IP address 8.8.8.8.

Task 5:

If we want to query all DNS record types, we can use the “ANY” option. This will display all the available record types in the output:



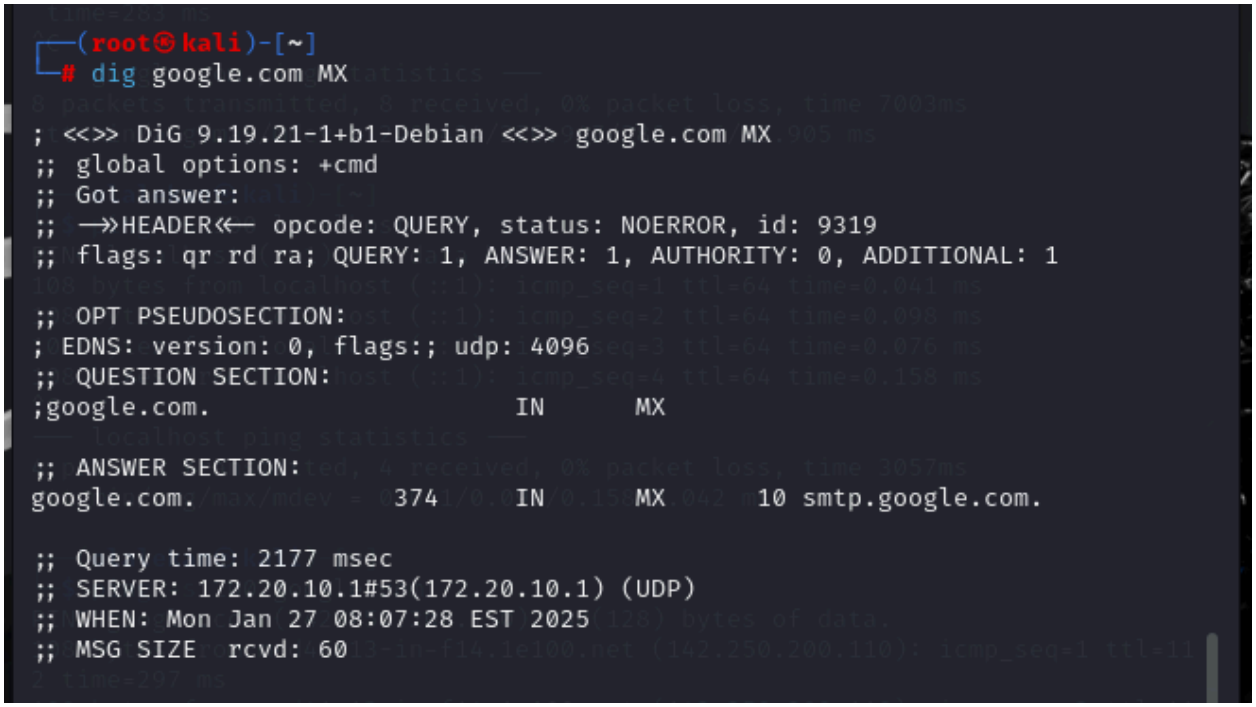
Task 6:

We can also look up a specific record. For example, if we want to get only the mail exchange section associated with a domain, we can use the following command:

dig google.com MX

We can query a number of specific record types using the following tags in place of MX:

TXT, CNAME, NS, A



Task 7:

```
NS i.root-servers.net. from server 172.20.10.1 in 1328 ms.
NS j.root-servers.net. from server 172.20.10.1 in 1328 ms.
NS m.root-servers.net. from server 172.20.10.1 in 1328 ms.
NS e.root-servers.net. from server 172.20.10.1 in 1328 ms.
;; UDP setup with 2001:501:b1f9::30#53(2001:501:b1f9::30) for microsoft.com f
ailed: network unreachable.
;; no servers could be reached

;; UDP setup with 2001:501:b1f9::30#53(2001:501:b1f9::30) for microsoft.com f
ailed: network unreachable.
;; communications error to 192.52.178.30#53: timed out
;; UDP setup with 2001:502:7094::30#53(2001:502:7094::30) for microsoft.com f
ailed: network unreachable.
;; UDP setup with 2001:503:231d::2:30#53(2001:503:231d::2:30) for microsoft.c
om failed: network unreachable.
;; UDP setup with 2001:502:1ca1::30#53(2001:502:1ca1::30) for microsoft.com f
ailed: network unreachable.
;; UDP setup with 2001:503:d414::30#53(2001:503:d414::30) for microsoft.com f
ailed: network unreachable.
;; UDP setup with 2620:1ec:8ec:10::27#53(2620:1ec:8ec:10::27) for microsoft.c
om failed: network unreachable.
A 20.70.246.20 from server 13.107.206.39 in 280 ms.
A 20.76.201.171 from server 13.107.206.39 in 280 ms.
A 20.112.250.133 from server 13.107.206.39 in 280 ms.
A 20.231.239.246 from server 13.107.206.39 in 280 ms.
A 20.236.44.162 from server 13.107.206.39 in 280 ms.
```

We can trace the DNS path, similar to traceroute, using the following command:

Task 8:

```
┌──(olalekan㉿kali)-[~]
└─$ dig -x 142.250.75.238
;; communications error to 172.20.10.1#53: timed out
;; communications error to 172.20.10.1#53: timed out
;; communications error to 172.20.10.1#53: timed out

; <<>> DiG 9.19.21-1+b1-Debian <<>> -x 142.250.75.238
;; global options: +cmd
;; no servers could be reached
```

It is also possible to make DNS queries for IP addresses.

Task 9:

Dig has a useful feature which allows you to perform a number of DNS lookups for a list of domains instead of doing the same for each one individually. This can be done by performing a lookup using a file:

dig -f domain_names.txt +short

Task 10:

It is possible to access domain verification data by making a DNS TXT query.

Dig is a tool with multiple uses and can be very useful for gathering a broad range of DNS information about a target site.