

Advanced Computer Networking and Security - 5800

Assignment -7 DNS IN A BOX

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Turning on the docker

```
Creating edu-10.9.0.60      ... done
Creating local-dns-10.9.0.53 ... done
Creating root-10.9.0.30    ... done
Creating example-edu-10.9.0.65 ... done
Creating seed-base-bind    ... done
[10/21/21]seed@VM:~/.../Labsetup$
```

Running the dig command to check the server

```
Seed Ubuntu 20.04 - VMware Workstation
File Edit View VM Help
Library
  Type here to search
  My Computer
    Seed Ubuntu 20.04
    Seed Ubuntu 20.04-2
    Clone of Seed Ubuntu 2
  Shared VMs

Activities Terminal
Oct 21 09:07
seed@VM: ~/../Labsetup

Creating example-edu-10.9.0.65 ... done
Creating seed-base-bind ... done
[10/21/21]seed@VM:~/../Labsetup$ dig @10.9.0.65 www.example.edu

;; <<>> DiG 9.16.1-Ubuntu <<>> @10.9.0.65 www.example.edu
;; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 44040
;; flags: qr aa rd; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 4096
;; COOKIE: 2178dcdb5dadfbc01000000617157ce80a1bed2b4aa6bd0 (good)
;; QUESTION SECTION:
;; www.example.edu.                IN      A
;;
;; ANSWER SECTION:
;; www.example.edu.                259200 IN      A      1.2.3.5
```

Checking with abc.example.edu

```
Seed Ubuntu 20.04 - VMware Workstation
File Edit View VM Help
Library
  Type here to search
  My Computer
    Seed Ubuntu 20.04
    Seed Ubuntu 20.04-2
    Clone of Seed Ubuntu 2
  Shared VMs

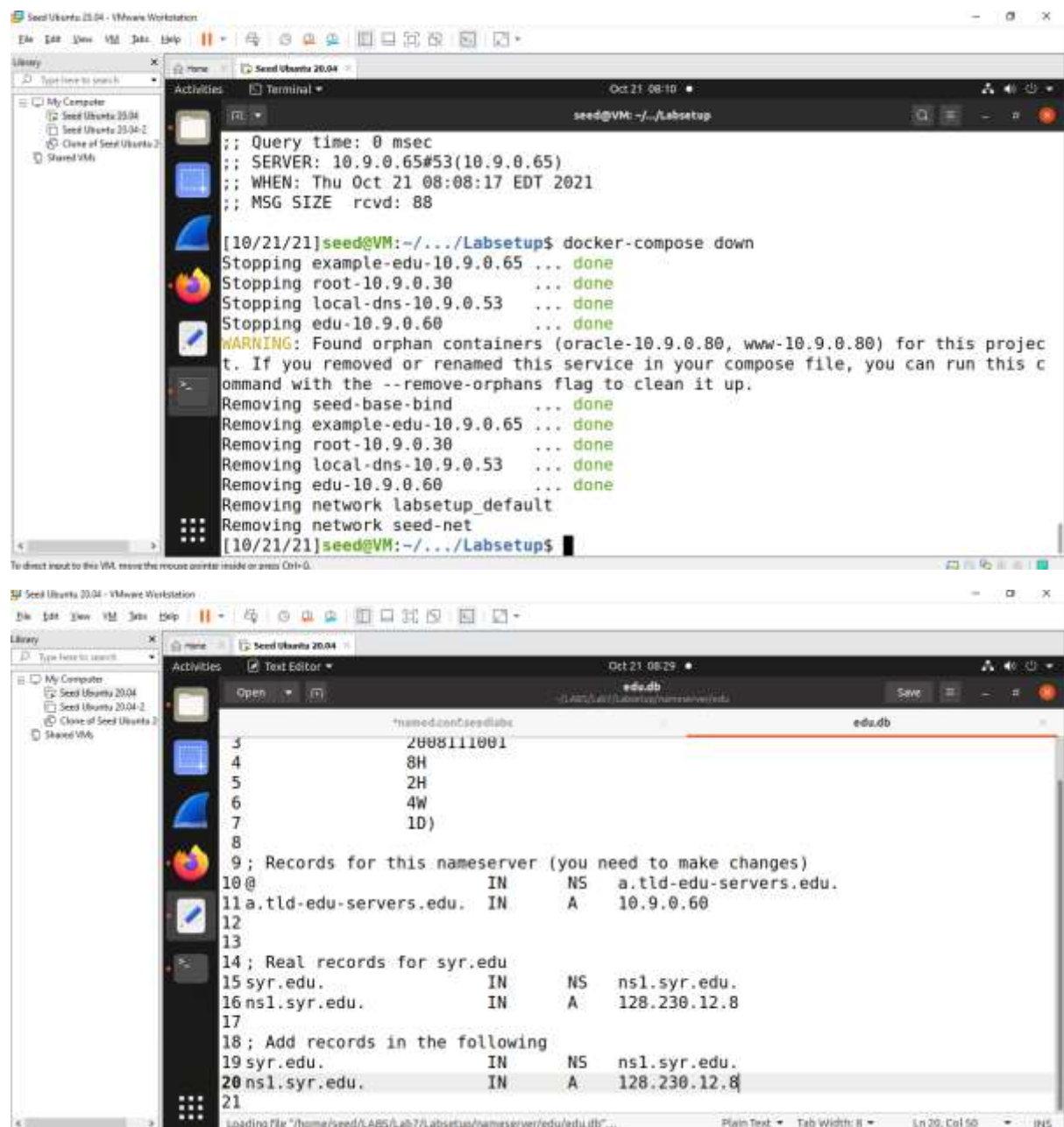
Activities Terminal
Oct 21 09:08
seed@VM: ~/../Labsetup

;; MSG SIZE rcvd: 88
[10/21/21]seed@VM:~/../Labsetup$ dig @10.9.0.65 abc.example.edu

;; <<>> DiG 9.16.1-Ubuntu <<>> @10.9.0.65 abc.example.edu
;; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 2483
;; flags: qr aa rd; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 4096
;; COOKIE: 3eb45113e044bdal01000000617158318cf78a46ab6d0c51 (good)
;; QUESTION SECTION:
;; abc.example.edu.                IN      A
;;
;; ANSWER SECTION:
;; abc.example.edu.                259200 IN      A      1.2.3.7
```

Turning off the docker



The image shows two screenshots of a VMware Workstation window. The top screenshot shows a terminal window with the command `docker-compose down` being executed. The output shows that several services (example-edu-10.9.0.65, root-10.9.0.30, local-dns-10.9.0.53, edu-10.9.0.60) are being stopped and removed. A warning message indicates that orphan containers (oracle-10.9.0.80, www-10.9.0.80) were found. The bottom screenshot shows a text editor window displaying the contents of the `edu.db` file, which contains DNS records for the lab setup.

```
;; Query time: 0 msec
;; SERVER: 10.9.0.65#53(10.9.0.65)
;; WHEN: Thu Oct 21 08:08:17 EDT 2021
;; MSG SIZE rcvd: 88

[10/21/21]seed@VM:~/../Labsetup$ docker-compose down
Stopping example-edu-10.9.0.65 ... done
Stopping root-10.9.0.30 ... done
Stopping local-dns-10.9.0.53 ... done
Stopping edu-10.9.0.60 ... done
WARNING: Found orphan containers (oracle-10.9.0.80, www-10.9.0.80) for this projec
t. If you removed or renamed this service in your compose file, you can run this c
ommand with the --remove-orphans flag to clean it up.
Removing seed-base-bind ... done
Removing example-edu-10.9.0.65 ... done
Removing root-10.9.0.30 ... done
Removing local-dns-10.9.0.53 ... done
Removing edu-10.9.0.60 ... done
Removing network labsetup_default
Removing network seed-net
[10/21/21]seed@VM:~/../Labsetup$
```

```
3      2008111001
4      8H
5      2H
6      4W
7      1D)
8
9 ; Records for this nameserver (you need to make changes)
10 @      IN      NS      a.tld-edu-servers.edu.
11 a.tld-edu-servers.edu. IN      A      10.9.0.60
12
13
14 ; Real records for syr.edu
15 syr.edu.      IN      NS      ns1.syr.edu.
16 ns1.syr.edu.  IN      A      128.230.12.8
17
18 ; Add records in the following
19 syr.edu.      IN      NS      ns1.syr.edu.
20 ns1.syr.edu.  IN      A      128.230.12.8
21
```

```
Seed Ubuntu 20.04 - VMware Workstation
File Edit View VM Help
[Icons]
Terminal
seed@VM: ~/Labsetup
Removing network seed-net
[10/21/21]seed@VM:~/Labsetup$ dig ucmo.edu NS
;; <<>> DiG 9.16.1-Ubuntu <<>> ucmo.edu NS
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 5543
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1
;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;ucmo.edu. IN NS
;; ANSWER SECTION:
ucmo.edu. 5 IN NS ns1.ucmo.edu.
ucmo.edu. 5 IN NS ns2.ucmo.edu.
;; Query time: 63 msec
;; SERVER: 127.0.0.53#53(127.0.0.53)
;; WHEN: Thu Oct 21 08:27:31 EDT 2021
Direct input to this VM, move the mouse pointer inside or press Ctrl+G
```

```
Seed Ubuntu 20.04 - VMware Workstation
File Edit View VM Help
[Icons]
Text Editor
Oct 21 08:31
edu.db
~/LabSetup/seed/ubuntu/seed/ubuntu/edu.db
Save
*named.conf.seedlabs
edu.db
3 2008111001
4 8H
5 2H
6 4W
7 1D)
8
9; Records for this nameserver (you need to make changes)
10@ IN NS a.tld-edu-servers.edu.
11a.tld-edu-servers.edu. IN A 10.9.0.60
12
13
14; Real records for syr.edu
15syr.edu. IN NS ns1.syr.edu.
16ns1.syr.edu. IN A 128.230.12.8
17
18; Add records in the following
19syr.edu. IN NS ns2.ucmo.edu.
20ns2.ucmo.edu. IN A 128.230.12.8
21
Saving file "/home/seed/LAB5/lab7/Labsetup/nameserver/edu/edu.db" ...
Plain Text Tab width: 8 Ln 20, Col 14 INS
```

Seed Ubuntu 20.04 - VMware Workstation

File Edit View VM Help

Library

My Computer

Seed Ubuntu 20.04

Seed Ubuntu 20.04-2

Clone of Seed Ubuntu 20.04-2

Shared VMs

Activities

Terminal

Oct 21 08:32

seed@VM: ~/Labsetup

```
>>> DiG 9.16.1-Ubuntu <<>> ns2.ucmo.edu
;; global options: +cmd
;; Got answer:
;; ->HEADER<- opcode: QUERY, status: NOERROR, id: 33810
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;; ns2.ucmo.edu.                IN      A
;; ANSWER SECTION:
ns2.ucmo.edu.                5      IN      A      153.91.1.52

;; Query time: 75 msec
;; SERVER: 127.0.0.53#53(127.0.0.53)
;; WHEN: Thu Oct 21 08:32:04 EDT 2021
;; MSG SIZE rcvd: 57

[10/21/21]seed@VM:~/Labsetup$
```

To direct input to this VM, move the mouse pointer inside or press Ctrl-G.

Seed Ubuntu 20.04 - VMware Workstation

File Edit View VM Help

Library

My Computer

Seed Ubuntu 20.04

Seed Ubuntu 20.04-2

Clone of Seed Ubuntu 20.04-2

Shared VMs

Activities

Text Editor

Oct 21 08:59

*edu.db

Open

Save

*named.conf.localdb

*edu.db

```
3      2008111001
4      8H
5      2H
6      4W
7      1D)
8
9; Records for this nameserver (you need to make changes)
10@      IN      NS      a.tld-edu-servers.edu.
11a.tld-edu-servers.edu. IN      A      10.9.0.60
12
13
14; Real records for syr.edu
15syr.edu.      IN      NS      ns1.syr.edu.
16ns1.syr.edu.  IN      A      128.230.12.8
17
18; Add records in the following
19ucmo.edu      IN      NS      ns2.ucmo.edu.
20ns2.ucmo.edu. IN      A      153.91.1.52
21
```

Plain Text Tab Width: 8 Ln 19, Col 9 INS


```
Seed Ubuntu 20.04 - VMware Workstation
File Edit View VM Help
Library
  Type here to search
  My Computer
    Seed Ubuntu 20.04
    Seed Ubuntu 20.04-2
    Clone of Seed Ubuntu 2
  Shared VMs
Activities
  Home
  Terminal
    seed@VM: ~/.../Labsetup
    Creating example-edu-10.9.0.65 ... done
    [10/21/21]seed@VM:~/.../Labsetup$ dig @10.9.0.60 www.example.edu

    ;; <<>> DiG 9.16.1-Ubuntu <<>> @10.9.0.60 www.example.edu
    ;; (1 server found)
    ;; global options: +cmd
    ;; Got answer:
    ;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 51220
    ;; flags: qr aa rd; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1
    ;; WARNING: recursion requested but not available

    ;; OPT PSEUDOSECTION:
    ;; EDNS: version: 0, flags::; udp: 4096
    ;; COOKIE: 82453d3967b86e31010000006171605eeee42b64c1474e56 (good)
    ;; QUESTION SECTION:
    ;; www.example.edu.
    ;;
    ;; AUTHORITY SECTION:
    edu. 3600 IN SOA a.tld-edu-servers.edu. admin.tld-e
    du-servers.edu. 2008111001 28800 7200 2419200 86400

    Direct input to this VM: move the mouse pointer inside or press Ctrl-G.
```

```
Seed Ubuntu 20.04 - VMware Workstation
File Edit View VM Help
Library
  Type here to search
  My Computer
    Seed Ubuntu 20.04
    Seed Ubuntu 20.04-2
    Clone of Seed Ubuntu 2
  Shared VMs
Activities
  Home
  Terminal
    seed@VM: ~/.../Labsetup
    ;; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 2
    ;; WARNING: recursion requested but not available

    ;; OPT PSEUDOSECTION:
    ;; EDNS: version: 0, flags::; udp: 4096
    ;; COOKIE: 0dfcd2fa3928e2a01000000617166530d24c2b4e572289d (good)
    ;; QUESTION SECTION:
    ;; www.ucmo.edu.
    ;;
    ;; AUTHORITY SECTION:
    ucmo.edu. 3600 IN NS ns2.ucmo.edu.
    ;;
    ;; ADDITIONAL SECTION:
    ns2.ucmo.edu. 3600 IN A 153.91.1.52

    ;; Query time: 4 msec
    ;; SERVER: 10.9.0.60#53(10.9.0.60)
    ;; WHEN: Thu Oct 21 09:08:35 EDT 2021
    ;; MSG SIZE rcvd: 103

    [10/21/21]seed@VM:~/.../Labsetup$

    Direct input to this VM: move the mouse pointer inside or press Ctrl-G.
```

Seed Ubuntu 20.04 - VMware Workstation

File Edit View VM Tools Help

Library

My Computer

Seed Ubuntu 20.04

Seed Ubuntu 20.04-2

Clone of Seed Ubuntu 2

Shared VMs

Activities

Terminal

Oct 21 09:11

seed@VM: ~/Labsetup

```
[10/21/21]seed@VM:~/Labsetup$ dig @ns2.ucmo.edu www.ucmo.edu

;<<>> DiG 9.16.1-Ubuntu <<>> @ns2.ucmo.edu www.ucmo.edu
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 50961
;; flags: qr aa rd; QUERY: 1, ANSWER: 1, AUTHORITY: 2, ADDITIONAL: 3
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
; COOKIE: 81d853ec0255f838648e3ace61716703221d20abecfb9a81 (good)
;; QUESTION SECTION:
;www.ucmo.edu.                IN      A

;; ANSWER SECTION:
www.ucmo.edu.                 3600    IN      A      153.91.1.10

;; AUTHORITY SECTION:
ucmo.edu.                     3600    IN      NS      ns1.ucmo.edu.
```

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

Seed Ubuntu 20.04 - VMware Workstation

File Edit View VM Tools Help

Library

My Computer

Seed Ubuntu 20.04

Seed Ubuntu 20.04-2

Clone of Seed Ubuntu 2

Shared VMs

Activities

Terminal

Oct 21 09:17

seed@VM: ~/Labsetup

```
[10/21/21]seed@VM:~/Labsetup$ dig @ns2.ucmo.edu www.ucmo.edu

;<<>> DiG 9.16.1-Ubuntu <<>> @ns2.ucmo.edu www.ucmo.edu
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 50961
;; flags: qr aa rd; QUERY: 1, ANSWER: 1, AUTHORITY: 2, ADDITIONAL: 3
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
; COOKIE: 81d853ec0255f838648e3ace61716703221d20abecfb9a81 (good)
;; QUESTION SECTION:
;www.ucmo.edu.                IN      A

;; ANSWER SECTION:
www.ucmo.edu.                 3600    IN      A      153.91.1.10

;; AUTHORITY SECTION:
ucmo.edu.                     3600    IN      NS      ns1.ucmo.edu.
```

To direct input to this VM, move the mouse pointer inside or press Ctrl+G.

The screenshot shows a VMware Workstation window titled "Seed Ubuntu 20.04 - VMware Workstation". Inside the VM, a text editor is open with the file "edu.db". The file contains DNS records for a nameserver. The records are as follows:

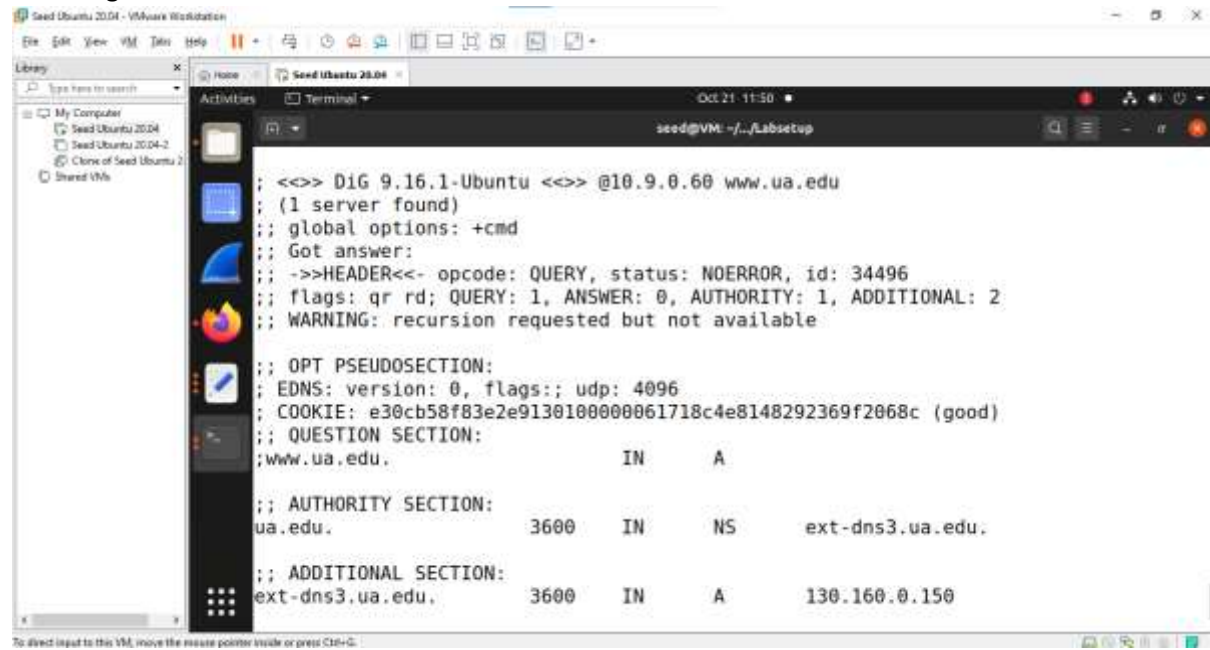
```
8
9; Records for this nameserver (you need to make changes)
10@
11a.tld-edu-servers.edu. IN NS a.tld-edu-servers.edu.
12
13
14; Real records for syr.edu
15syr.edu. IN NS ns1.syr.edu.
16ns1.syr.edu. IN A 128.230.12.8
17
18; Add records in the following
19ucmo.edu. IN NS ns2.ucmo.edu.
20ns2.ucmo.edu. IN A 153.91.1.52
21
22example.edu. IN NS ns.example.edu.
23ns.example.edu. IN A 10.9.0.65
24
25
26
```

Adding two more domains to the file

The screenshot shows the same VMware Workstation window, but the text editor now displays updated DNS records for "edu.db". The records include the previous ones plus two new domains: "rohit.edu" and "ua.edu". The records are as follows:

```
15syr.edu. IN NS ns1.syr.edu.
16ns1.syr.edu. IN A 128.230.12.8
17
18; Add records in the following
19ucmo.edu. IN NS ns2.ucmo.edu.
20ns2.ucmo.edu. IN A 153.91.1.52
21
22escc.edu. IN NS nscccdcmz19.nsc.c.edu.
23nscccdcmz19.nsc.c.edu. IN A 198.146.64.120
24
25ua.edu. IN NS ext-dns3.ua.edu.
26ext-dns3.ua.edu. IN A 130.160.0.150
27
28example.edu. IN NS ns.example.edu.
29ns.example.edu. IN A 10.9.0.65
30
31rohit.edu. IN NS ns.rohit.edu.
32ns.rohit.edu. IN A 10.9.0.65
33
```

Checking for ua.edu



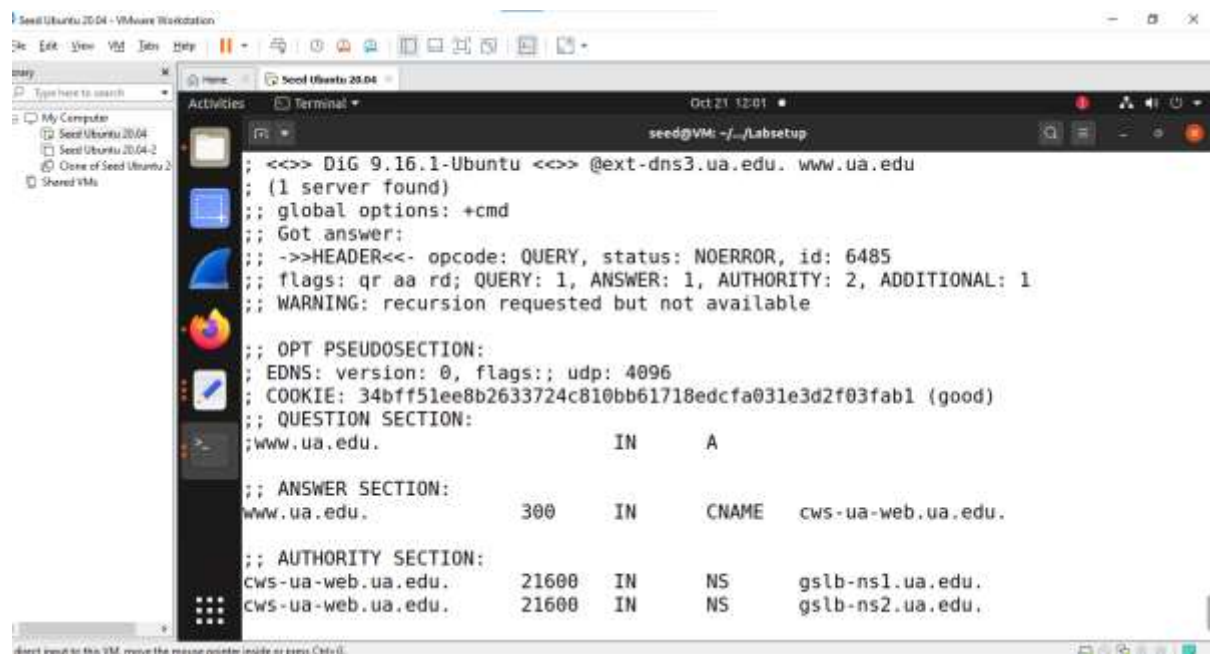
The screenshot shows a terminal window titled "Seed Ubuntu 20.04" with the command prompt "seed@VM: ~/Labsetup". The terminal output is as follows:

```
<<>> DiG 9.16.1-Ubuntu <<>> @10.9.0.60 www.ua.edu
;; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 34496
;; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 2
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 4096
;; COOKIE: e30cb58f83e2e9130100000061718c4e8148292369f2068c (good)
;; QUESTION SECTION:
;; www.ua.edu.                                IN      A

;; AUTHORITY SECTION:
ua.edu.                                3600    IN      NS      ext-dns3.ua.edu.

;; ADDITIONAL SECTION:
ext-dns3.ua.edu.                        3600    IN      A      130.160.0.150
```



The screenshot shows a terminal window titled "Seed Ubuntu 20.04" with the command prompt "seed@VM: ~/Labsetup". The terminal output is as follows:

```
<<>> DiG 9.16.1-Ubuntu <<>> @ext-dns3.ua.edu. www.ua.edu
;; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 6485
;; flags: qr aa rd; QUERY: 1, ANSWER: 1, AUTHORITY: 2, ADDITIONAL: 1
;; WARNING: recursion requested but not available

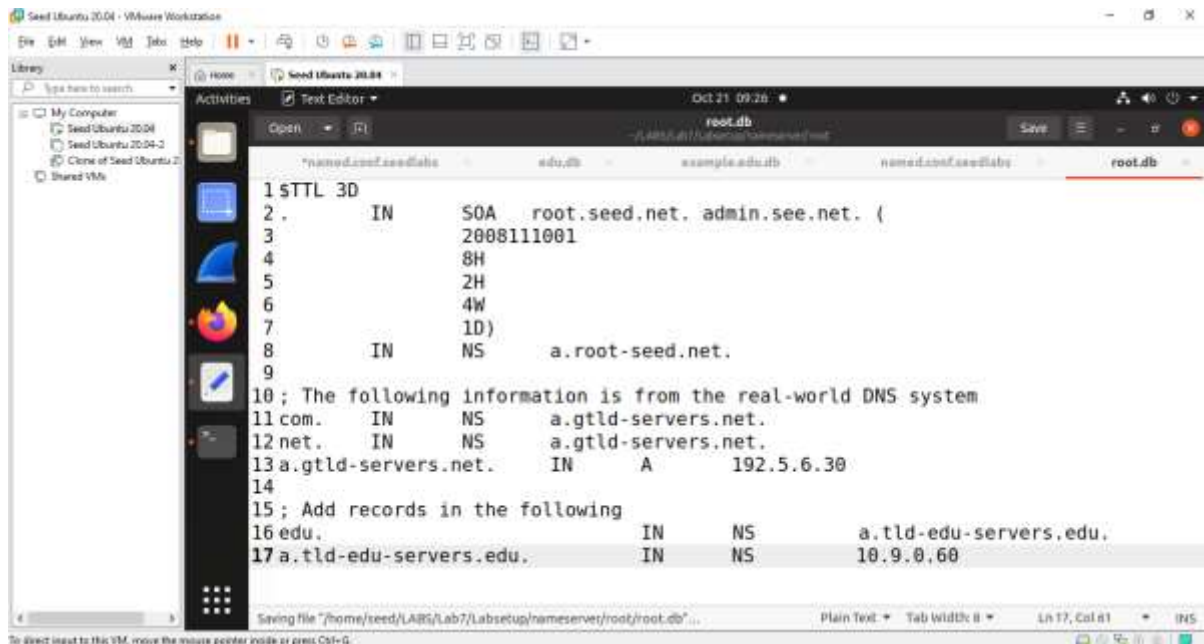
;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 4096
;; COOKIE: 34bff51ee8b2633724c810bb61718edcfa031e3d2f03fab1 (good)
;; QUESTION SECTION:
;; www.ua.edu.                                IN      A

;; ANSWER SECTION:
www.ua.edu.                                300     IN      CNAME   cws-ua-web.ua.edu.

;; AUTHORITY SECTION:
cws-ua-web.ua.edu.                        21600   IN      NS      gslb-ns1.ua.edu.
cws-ua-web.ua.edu.                        21600   IN      NS      gslb-ns2.ua.edu.
```

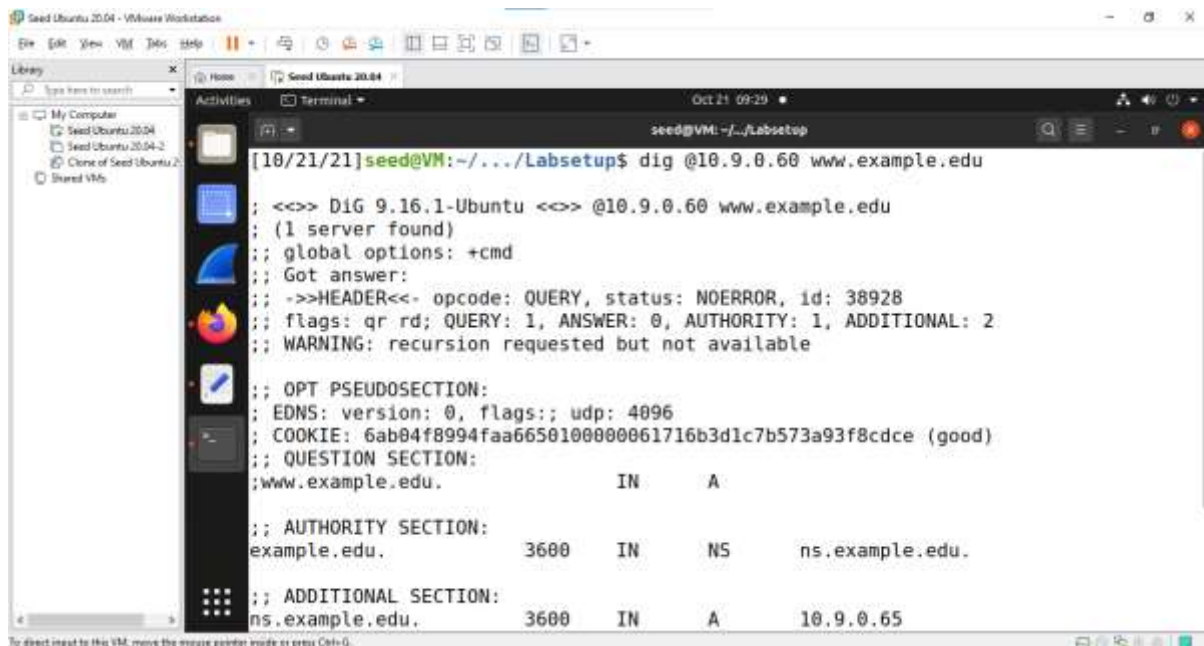
It is perfectly working

Changing in root file



The screenshot shows a VMware Workstation window titled "Seed Ubuntu 20.04 - VMware Workstation". The main window displays a text editor with the file "root.db" open. The file contains DNS zone data for "a.root-seed.net." and "a.tld-edu-servers.edu.". The text editor has a menu bar with "File", "Edit", "View", "VM", "Info", and "Help". The left sidebar shows a "Library" with "My Computer" and "Shared VMs". The bottom status bar indicates "Saving file '/home/seed/LAB7/Labsetup/nameserver/root/root.db'..." and "Plain Text" encoding.

```
1 $TTL 3D
2 .      IN      SOA    root.seed.net. admin.see.net. (
3         2008111001
4         8H
5         2H
6         4W
7         1D)
8 .      IN      NS     a.root-seed.net.
9
10 ; The following information is from the real-world DNS system
11 com.   IN      NS     a.gtld-servers.net.
12 net.   IN      NS     a.gtld-servers.net.
13 a.gtld-servers.net. IN      A      192.5.6.30
14
15 ; Add records in the following
16 edu.   IN      NS     a.tld-edu-servers.edu.
17 a.tld-edu-servers.edu. IN      NS     10.9.0.60
```



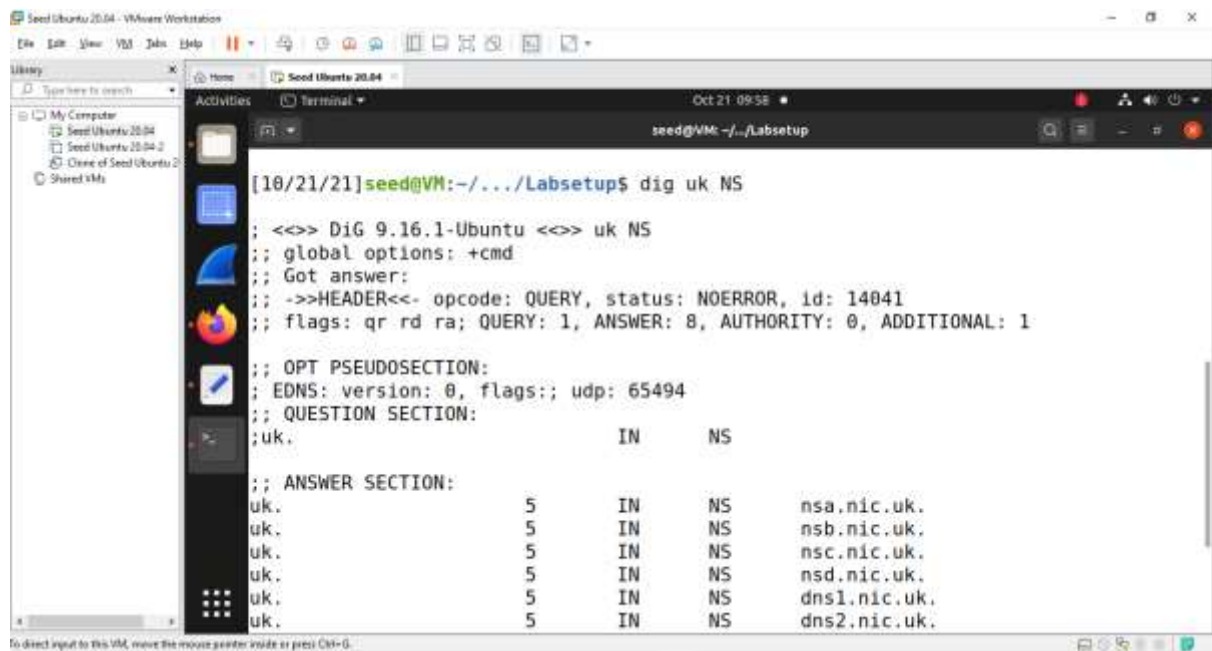
The screenshot shows a VMware Workstation window titled "Seed Ubuntu 20.04 - VMware Workstation". The main window displays a terminal window with the command "dig @10.9.0.60 www.example.edu" executed. The output shows DNS query results for "www.example.edu." from the server "10.9.0.60". The terminal has a menu bar with "File", "Edit", "View", "VM", "Info", and "Help". The left sidebar shows a "Library" with "My Computer" and "Shared VMs". The bottom status bar indicates "To direct input to this VM, move the mouse pointer inside or press Ctrl+G."

```
[10/21/21]seed@VM: ~/.../Labsetup$ dig @10.9.0.60 www.example.edu
; <<>> DiG 9.16.1-Ubuntu <<>> @10.9.0.60 www.example.edu
; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->HEADER<- opcode: QUERY, status: NOERROR, id: 38928
;; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 2
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 4096
;; COOKIE: 6ab04f8994faa6650100000061716b3d1c7b573a93f8cdce (good)
;; QUESTION SECTION:
;www.example.edu.      IN      A

;; AUTHORITY SECTION:
example.edu.          3600    IN      NS      ns.example.edu.

;; ADDITIONAL SECTION:
ns.example.edu.       3600    IN      A       10.9.0.65
```



The screenshot shows a terminal window titled 'Seed Ubuntu 20.04' with the command `dig uk NS` executed. The output displays DNS query details for the 'uk' domain, including the header, question section, and answer section listing authoritative name servers.

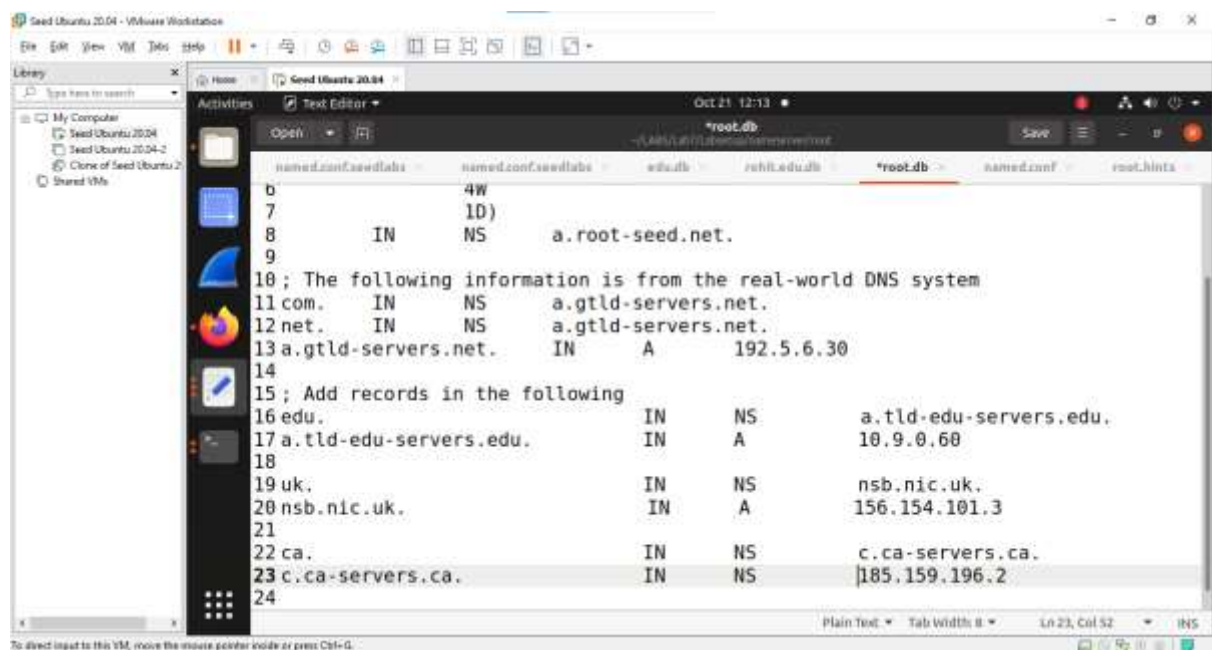
```
[10/21/21]seed@VM:~/../Labsetup$ dig uk NS

;<<<> DiG 9.16.1-Ubuntu <<<> uk NS
;; global options: +cmd
;; Got answer:
;; ->HEADER<<- opcode: QUERY, status: NOERROR, id: 14041
;; flags: qr rd ra; QUERY: 1, ANSWER: 8, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;uk.                                IN      NS

;; ANSWER SECTION:
uk.      5      IN      NS      nsa.nic.uk.
uk.      5      IN      NS      nsb.nic.uk.
uk.      5      IN      NS      nsc.nic.uk.
uk.      5      IN      NS      nsd.nic.uk.
uk.      5      IN      NS      dns1.nic.uk.
uk.      5      IN      NS      dns2.nic.uk.
```

Adding Canada Server

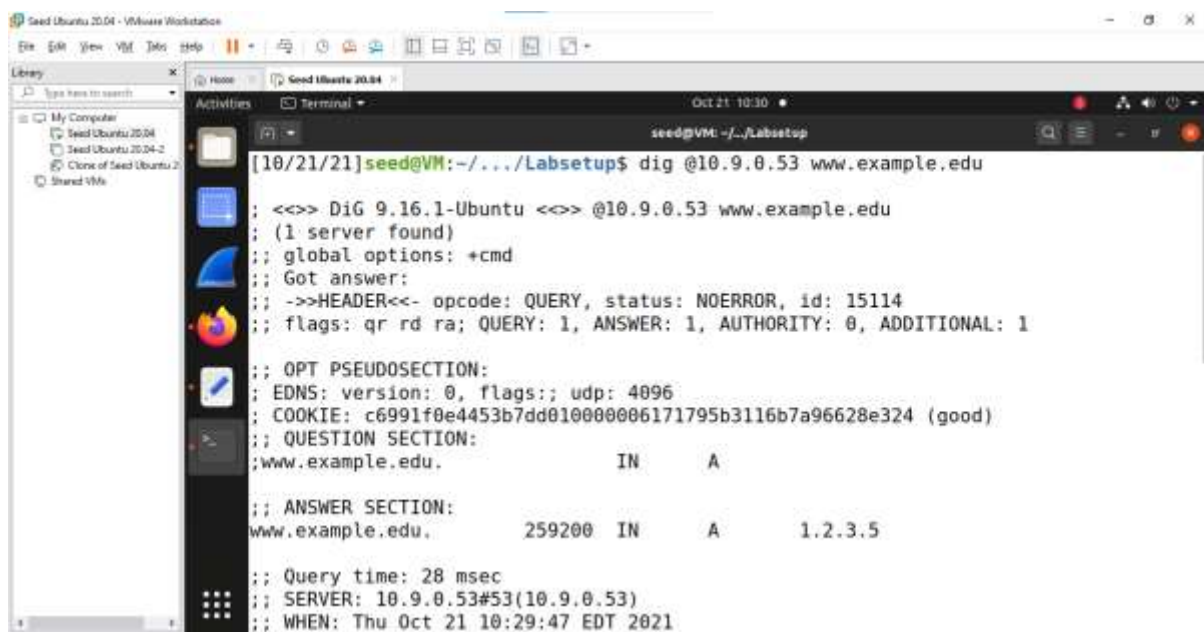
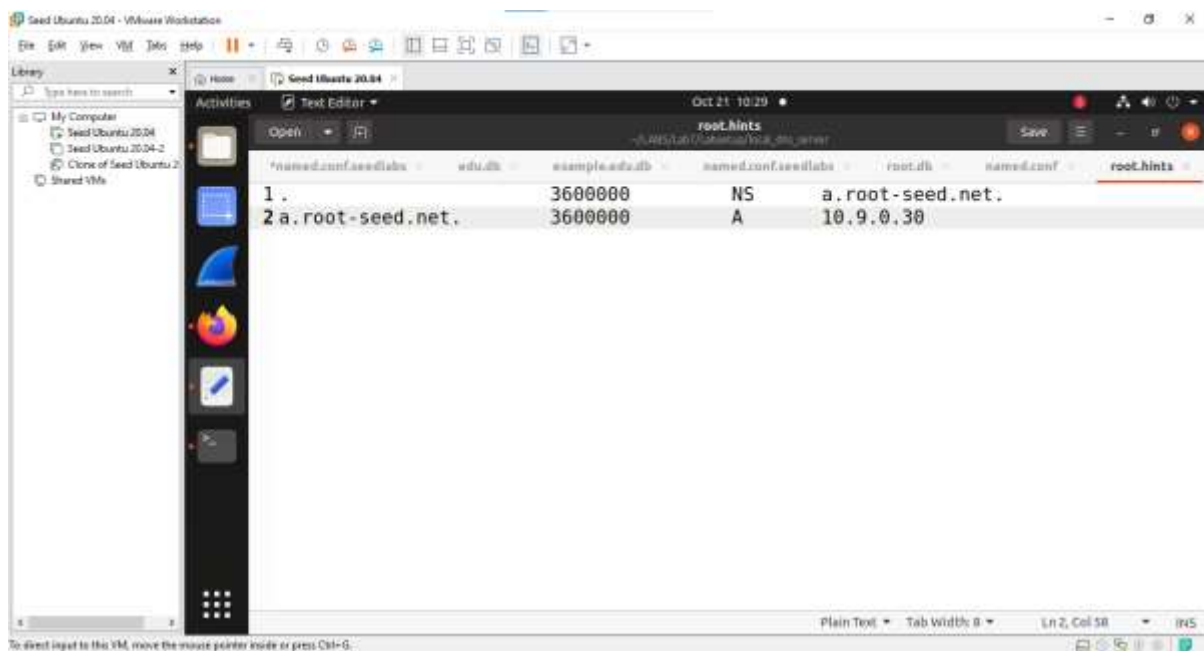


The screenshot shows a text editor window titled 'Seed Ubuntu 20.04' with the file `*root.db` open. The file contains DNS records for the root system, including authoritative name servers for various top-level domains like .com, .net, .edu, .uk, and .ca.

```
named.conf.seedlabs  named.conf.seedlabs  edu.db  rhlt.edu.db  *root.db  named.conf  root.hints

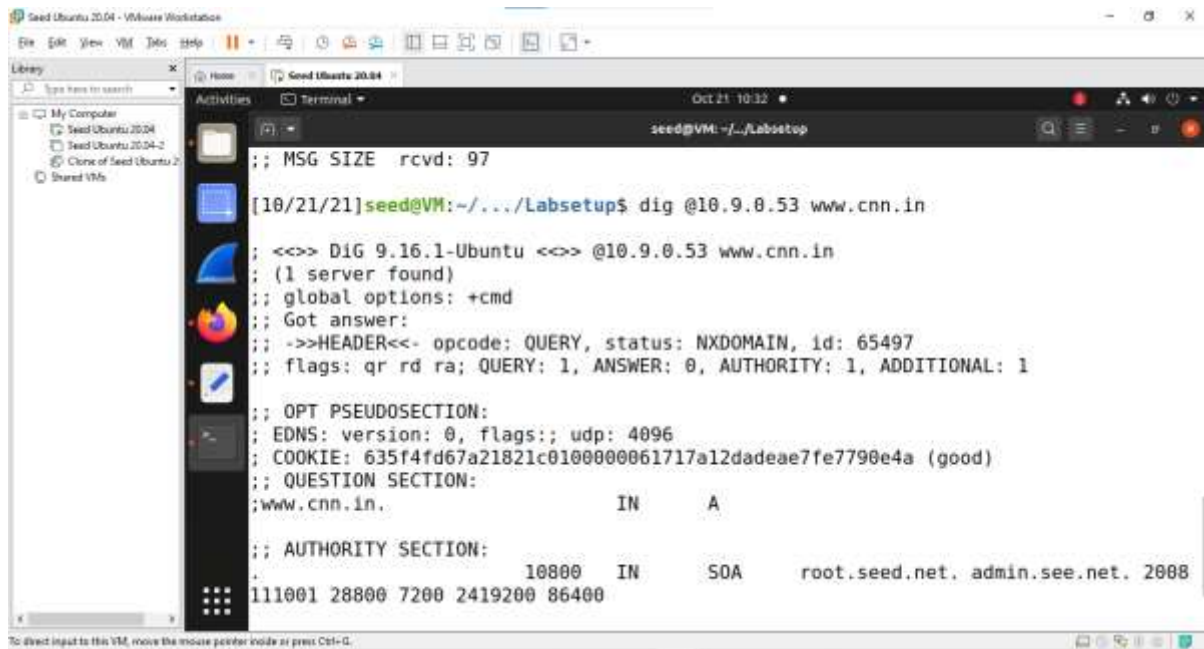
6      4W
7      10)
8      IN      NS      a.root-seed.net.
9
10; The following information is from the real-world DNS system
11 com.      IN      NS      a.gtld-servers.net.
12 net.      IN      NS      a.gtld-servers.net.
13 a.gtld-servers.net.  IN      A      192.5.6.30
14
15; Add records in the following
16 edu.      IN      NS      a.tld-edu-servers.edu.
17 a.tld-edu-servers.edu.  IN      A      10.9.0.60
18
19 uk.       IN      NS      nsb.nic.uk.
20 nsb.nic.uk.  IN      A      156.154.101.3
21
22 ca.       IN      NS      c.ca-servers.ca.
23 c.ca-servers.ca.  IN      NS      185.159.196.2
24
```

Task 5




```
Seed Ubuntu 20.04 - VMware Workstation
File Edit View VM Help
Library
Type here to search
My Computer
Seed Ubuntu 20.04
Seed Ubuntu 20.04-2
Clone of Seed Ubuntu 2
Shared VMs
Activities
Terminal
Oct 21 10:30
seed@VM: ~/Labsetup
[10/21/21]seed@VM:~/~/Labsetup$ dig @10.9.0.53 www.ucmo.edu
; <<>> DiG 9.16.1-Ubuntu <<>> @10.9.0.53 www.ucmo.edu
; (1 server found)
; global options: +cmd
; Got answer:
; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 40057
; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
; COOKIE: c87ca6bb29d4da4501000000617179824299ae76a6544508 (good)
; QUESTION SECTION:
; www.ucmo.edu. IN A
; ANSWER SECTION:
; www.ucmo.edu. 3600 IN A 153.91.1.10
; Query time: 91 msec
; SERVER: 10.9.0.53#53(10.9.0.53)
; WHEN: Thu Oct 21 10:30:26 EDT 2021
To direct input to this VM, move the mouse pointer inside or press Ctrl-G.
```

```
Seed Ubuntu 20.04 - VMware Workstation
File Edit View VM Help
Library
Type here to search
My Computer
Seed Ubuntu 20.04
Seed Ubuntu 20.04-2
Clone of Seed Ubuntu 2
Shared VMs
Activities
Terminal
Oct 21 10:32
seed@VM: ~/Labsetup
;; MSG SIZE rcvd: 85
[10/21/21]seed@VM:~/~/Labsetup$ dig @10.9.0.53 www.cnn.uk
; <<>> DiG 9.16.1-Ubuntu <<>> @10.9.0.53 www.cnn.uk
; (1 server found)
; global options: +cmd
; Got answer:
; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 38390
; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 0, ADDITIONAL: 1
; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
; COOKIE: d37f731122be464001000000617179d65e8d2e0876bd4678 (good)
; QUESTION SECTION:
; www.cnn.uk. IN A
; ANSWER SECTION:
; www.cnn.uk. 14400 IN CNAME cnn.uk.
; cnn.uk. 14400 IN A 89.187.86.205
```

```
;; MSG SIZE rcvd: 97

[10/21/21]seed@VM: ~/.../Labsetup$ dig @10.9.0.53 www.cnn.in

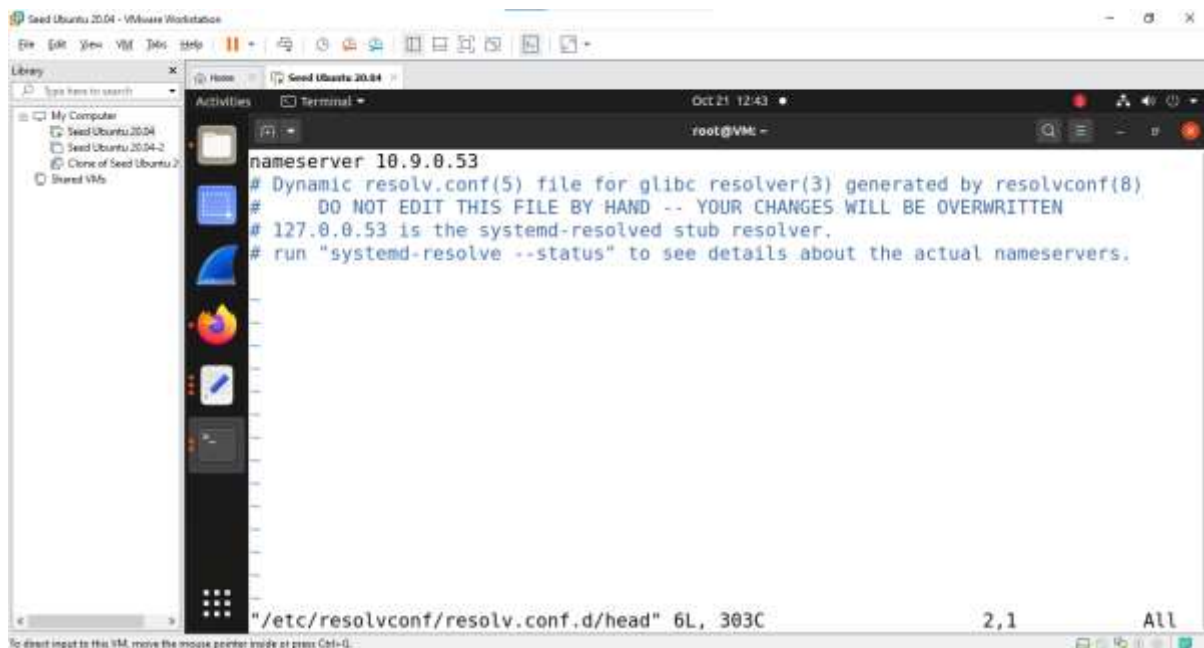
;; <<>> DiG 9.16.1-Ubuntu <<>> @10.9.0.53 www.cnn.in
;; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 65497
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 4096
;; COOKIE: 635f4fd67a21821c0100000061717a12dadeae7fe7790e4a (good)
;; QUESTION SECTION:
;; www.cnn.in.                IN      A

;; AUTHORITY SECTION:
                10800    IN      SOA     root.seed.net. admin.see.net. 2088
111001 28800 7200 2419200 86400
```

Task 6

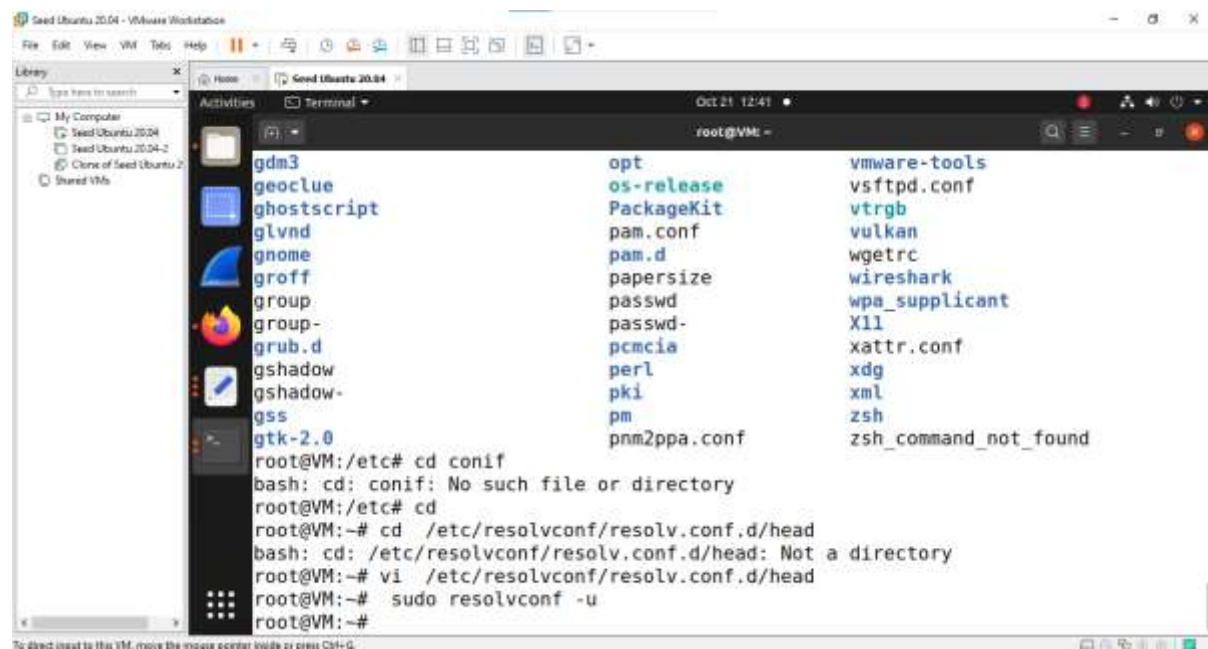
Task 6: Configure our VM to use this local DNS server



```
nameserver 10.9.0.53
# Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolvconf(8)
#     DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OVERWRITTEN
# 127.0.0.53 is the systemd-resolved stub resolver.
# run "systemd-resolve --status" to see details about the actual nameservers.

"/etc/resolvconf/resolv.conf.d/head" 6L, 303C      2,1      All
```

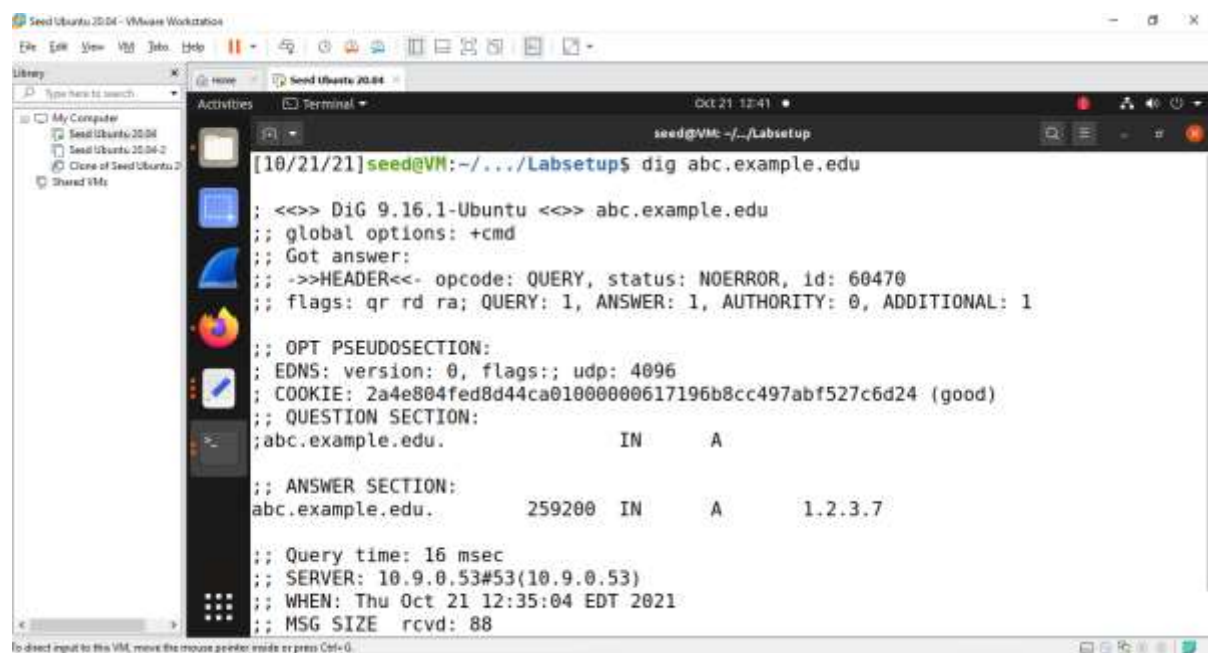
Executing resolvconf -u



```
gdm3
geoclue
ghostscript
glvnd
gnome
groff
group
group-
grub.d
gshadow
gshadow-
gss
gtk-2.0
opt
os-release
PackageKit
pam.conf
pam.d
papersize
passwd
passwd-
pcmcia
perl
pki
pm
pnm2ppa.conf
vmware-tools
vsftpd.conf
vtrgb
vulkan
wgetrc
wireshark
wpa_supplicant
X11
xattr.conf
xdg
xml
zsh
zsh_command_not_found

root@VM:~# cd /etc
bash: cd: /etc: No such file or directory
root@VM:~# cd /etc
root@VM:~# cd /etc/resolvconf/resolv.conf.d/head
bash: cd: /etc/resolvconf/resolv.conf.d/head: Not a directory
root@VM:~# vi /etc/resolvconf/resolv.conf.d/head
root@VM:~# sudo resolvconf -u
root@VM:~#
```

Successfully removed the ip address and checked using dig



```
[10/21/21]seed@VM:~/Labsetup$ dig abc.example.edu

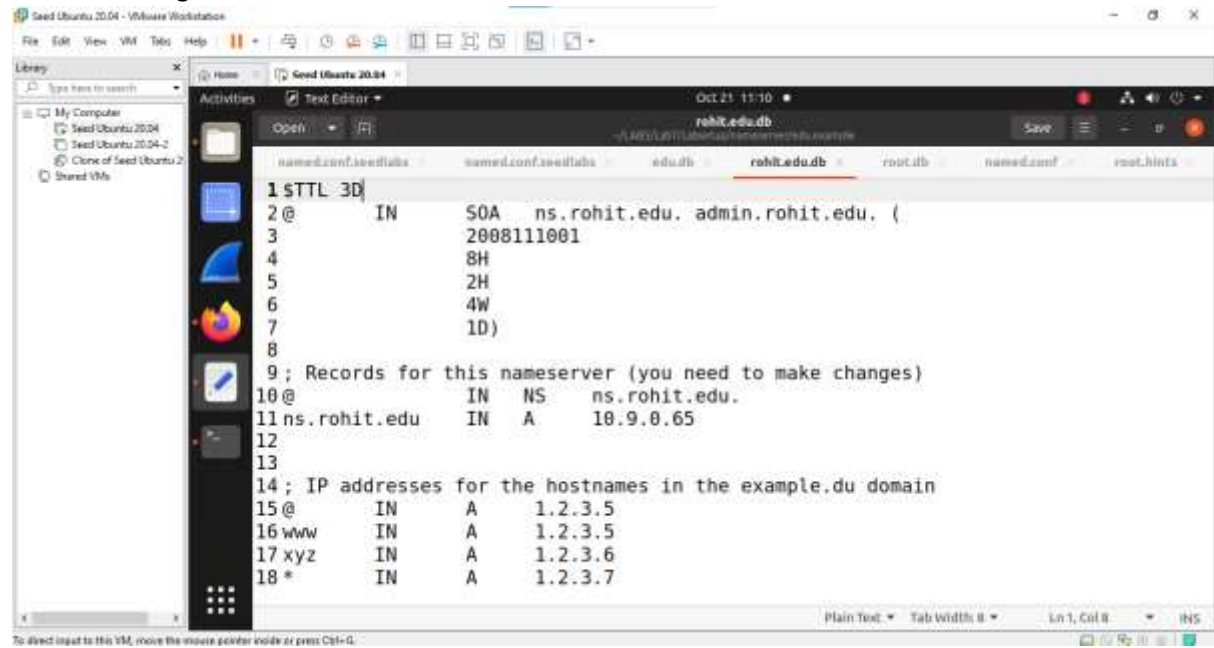
;; <<>> DiG 9.16.1-Ubuntu <<>> abc.example.edu
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 60470
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 4096
;; COOKIE: 2a4e804fed8d44ca01000000617196b8cc497abf527c6d24 (good)
;; QUESTION SECTION:
;abc.example.edu.                IN      A

;; ANSWER SECTION:
abc.example.edu.                259200  IN      A      1.2.3.7

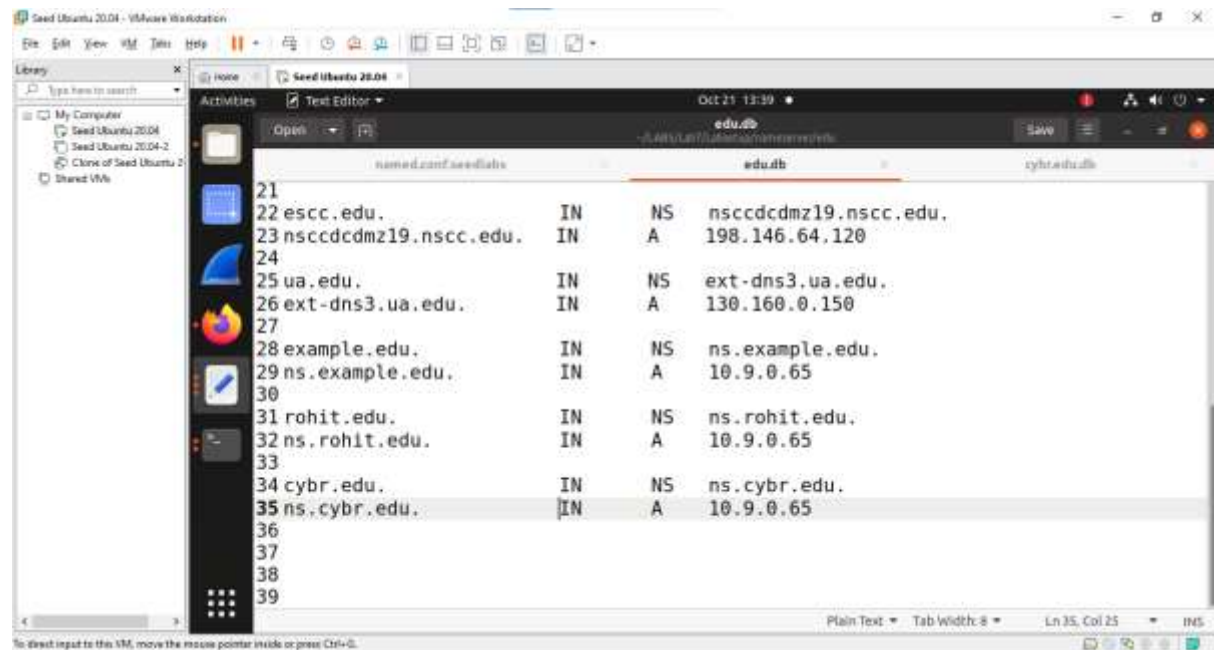
;; Query time: 16 msec
;; SERVER: 10.9.0.53#53(10.9.0.53)
;; WHEN: Thu Oct 21 12:35:04 EDT 2021
;; MSG SIZE rcvd: 88
```

Task 7: Making It More Realistic



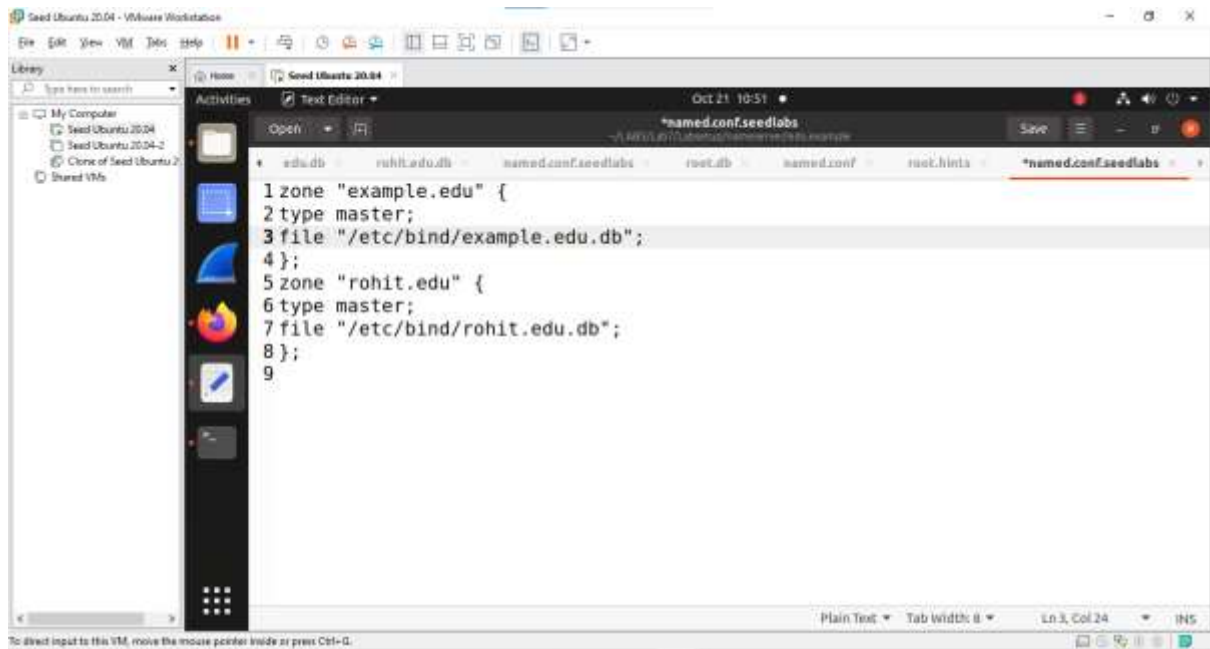
The screenshot shows a VMware Workstation window titled "Seed Ubuntu 20.04 - VMware Workstation". Inside the VM, a text editor is open with the file "rohit.edu.db". The file contains DNS configuration for the "rohit.edu" domain. The configuration includes a SOA record, an NS record for the nameserver, and A records for hostnames. The text is as follows:

```
1 $TTL 30
2 @      IN      SOA  ns.rohit.edu. admin.rohit.edu. (
3         2008111001
4         8H
5         2H
6         4W
7         1D)
8
9 ; Records for this nameserver (you need to make changes)
10 @      IN      NS   ns.rohit.edu.
11 ns.rohit.edu  IN  A    10.9.0.65
12
13
14 ; IP addresses for the hostnames in the example.du domain
15 @      IN      A    1.2.3.5
16 www    IN      A    1.2.3.5
17 xyz    IN      A    1.2.3.6
18 *      IN      A    1.2.3.7
```

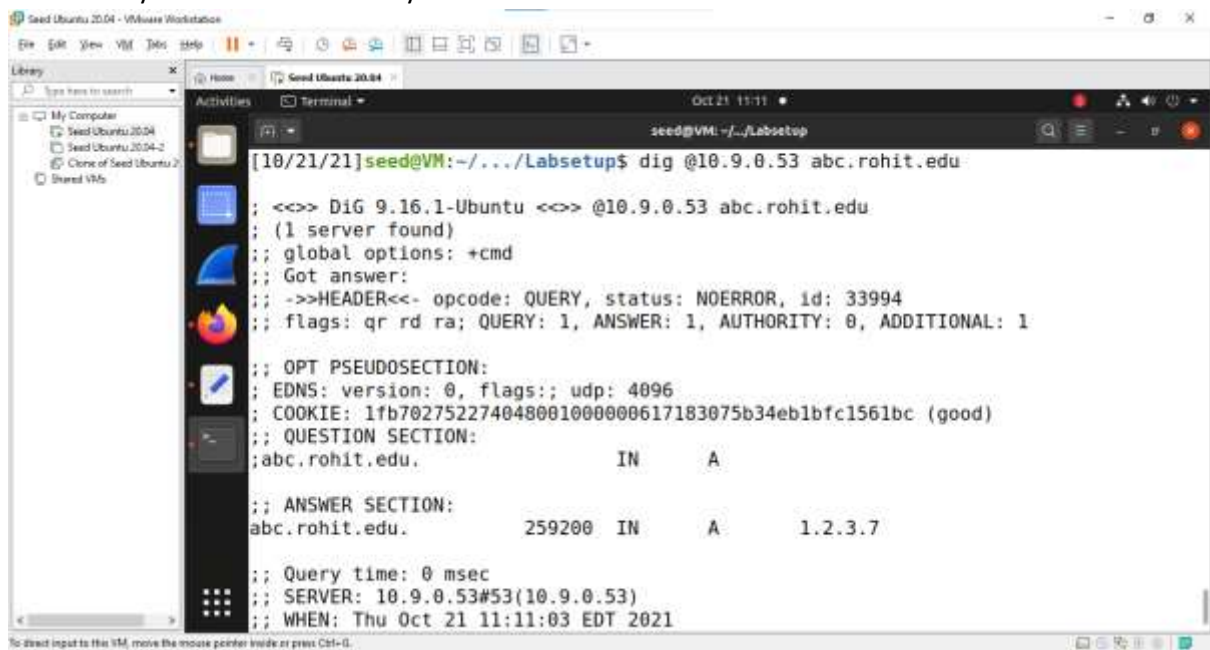


The screenshot shows the same VMware Workstation window, but now the text editor is open with the file "edu.db". This file contains DNS configuration for the "edu" domain. The configuration includes NS and A records for various subdomains. The text is as follows:

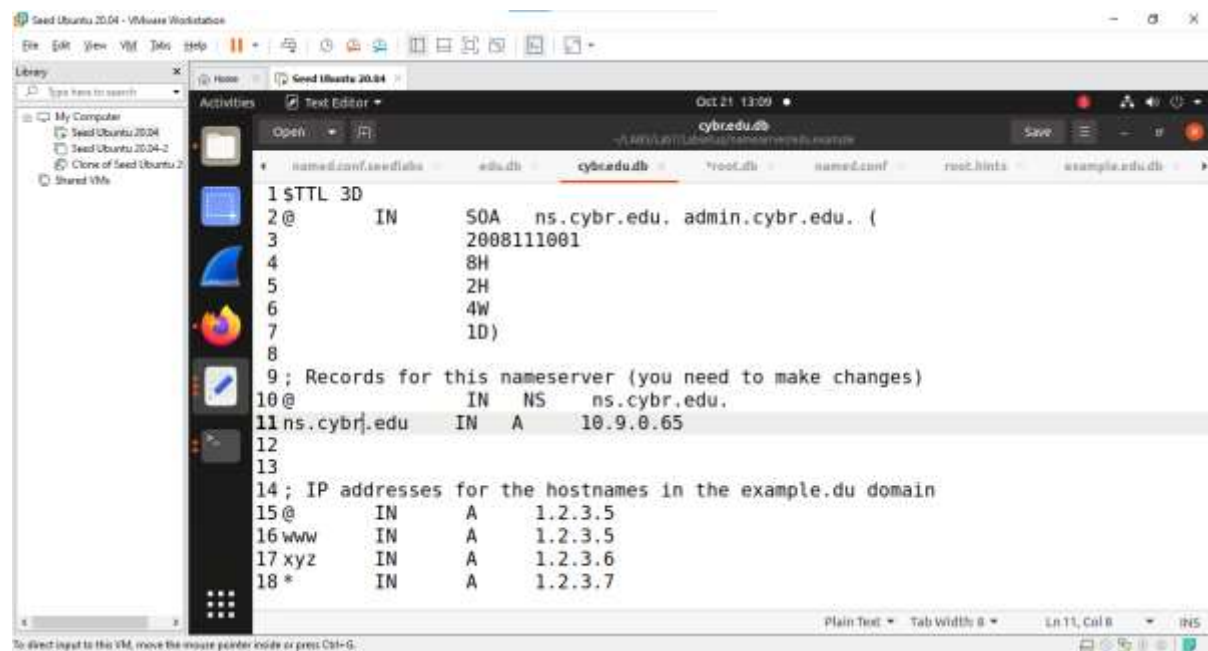
```
21
22 escc.edu.      IN      NS   nsccdcdmz19.nsc.edu.
23 nsccdcdmz19.nsc.edu.  IN  A    198.146.64.120
24
25 ua.edu.        IN      NS   ext-dns3.ua.edu.
26 ext-dns3.ua.edu.  IN  A    130.160.0.150
27
28 example.edu.   IN      NS   ns.example.edu.
29 ns.example.edu. IN  A    10.9.0.65
30
31 rohit.edu.     IN      NS   ns.rohit.edu.
32 ns.rohit.edu.  IN  A    10.9.0.65
33
34 cybr.edu.      IN      NS   ns.cybr.edu.
35 ns.cybr.edu.   IN  A    10.9.0.65
36
37
38
39
```



Successfully zone is created on my name



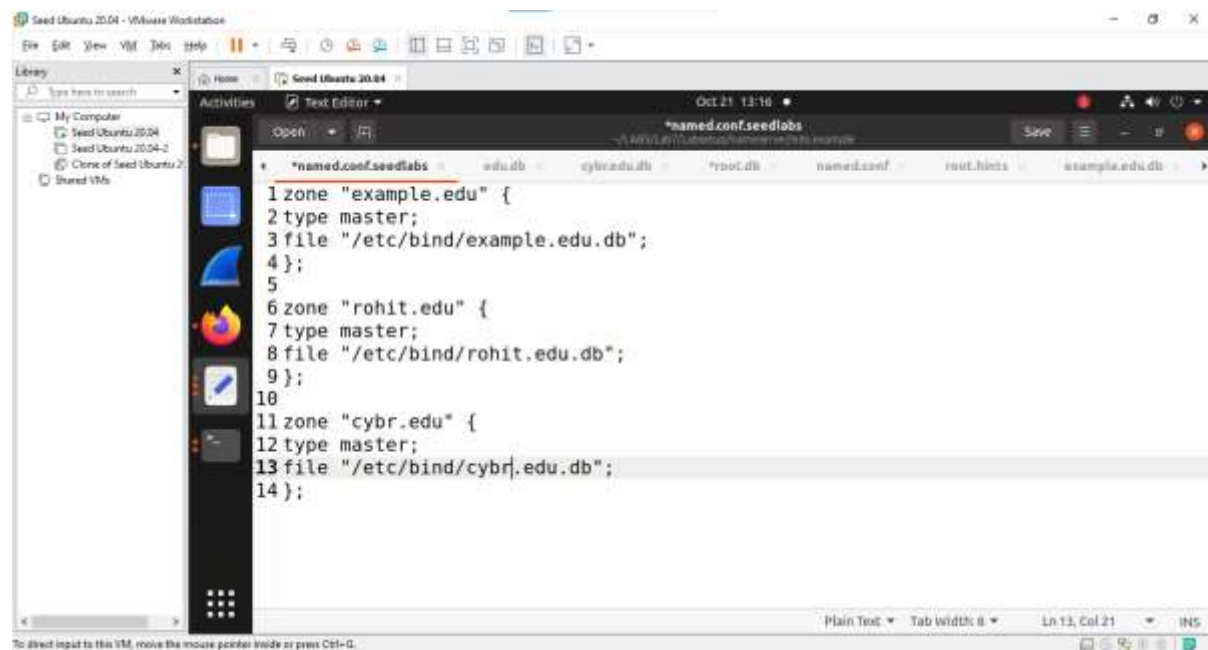
Creating one more zone



The screenshot shows a VMware Workstation window titled "Seed Ubuntu 20.04 - VMware Workstation". Inside the VM, a text editor is open with the file "cybr.edu.db". The content of the file is as follows:

```
1 $TTL 3D
2 @      IN      SOA  ns.cybr.edu, admin.cybr.edu. (
3         2008111001
4         8H
5         2H
6         4W
7         1D)
8
9 ; Records for this nameserver (you need to make changes)
10 @      IN      NS   ns.cybr.edu.
11 ns.cybr.edu  IN  A    10.9.0.65
12
13
14 ; IP addresses for the hostnames in the example.edu domain
15 @      IN      A    1.2.3.5
16 www    IN      A    1.2.3.5
17 xyz    IN      A    1.2.3.6
18 *      IN      A    1.2.3.7
```

The status bar at the bottom indicates "Plain Text", "Tab Width: 8", "Ln 11, Col 8", and "INS".

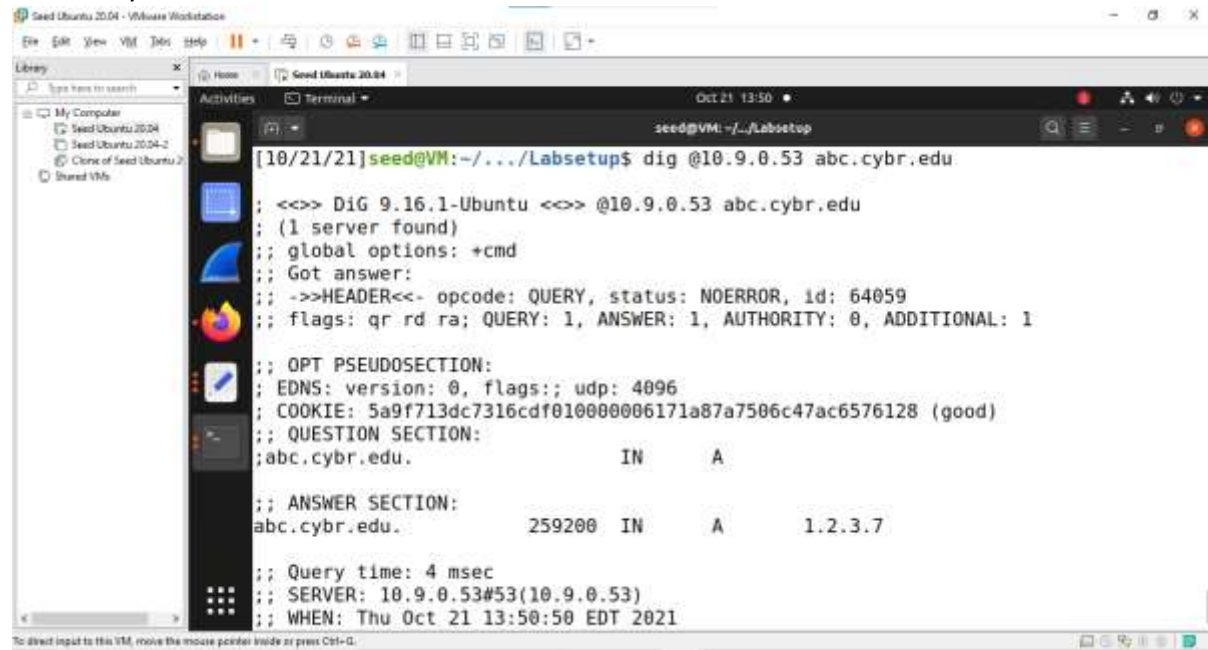


The screenshot shows the same VMware Workstation window. The text editor now displays the content of the "named.conf.seedlabs" file. The content is as follows:

```
1 zone "example.edu" {
2 type master;
3 file "/etc/bind/example.edu.db";
4 };
5
6 zone "rohit.edu" {
7 type master;
8 file "/etc/bind/rohit.edu.db";
9 };
10
11 zone "cybr.edu" {
12 type master;
13 file "/etc/bind/cybr.edu.db";
14 };
```

The status bar at the bottom indicates "Plain Text", "Tab Width: 8", "Ln 13, Col 21", and "INS".

Succesfully checked with another zone too



```
[10/21/21]seed@VM:~/../Labsetup$ dig @10.9.0.53 abc.cybr.edu

;; <<>> DiG 9.16.1-Ubuntu <<>> @10.9.0.53 abc.cybr.edu
;; (1 server found)
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 64059
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:; udp: 4096
;; COOKIE: 5a9f713dc7316cdf010000006171a87a7506c47ac6576128 (good)
;; QUESTION SECTION:
;abc.cybr.edu.                IN      A

;; ANSWER SECTION:
abc.cybr.edu.                259200  IN      A      1.2.3.7

;; Query time: 4 msec
;; SERVER: 10.9.0.53#53(10.9.0.53)
;; WHEN: Thu Oct 21 13:50:50 EDT 2021
```