

Lab3

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Ex1.

Q1. IP address is 150.203.161.98

DNS query type is A.

Q2. Canonical name is rproxy.cecs.anu.edu.au. One possible reason is multiple services is running under the same IP address.

Q3.

```
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 41397
;; flags: qr rd ra; QUERY: 1, ANSWER: 2, AUTHORITY: 4, ADDITIONAL: 8

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;www.cecs.anu.edu.au.      IN      A

;; ANSWER SECTION:
www.cecs.anu.edu.au.      1883    IN      CNAME   rproxy.cecs.anu.edu.au.
rproxy.cecs.anu.edu.au.  1125    IN      A       150.203.161.98

;; AUTHORITY SECTION:
edu.au.                    72062   IN      NS      t.au.
edu.au.                    72062   IN      NS      q.au.
edu.au.                    72062   IN      NS      s.au.
edu.au.                    72062   IN      NS      r.au.

;; ADDITIONAL SECTION:
q.au.                      3081    IN      A       65.22.196.1
q.au.                      7369    IN      AAAA    2a01:8840:be::1
r.au.                      2135    IN      A       65.22.197.1
r.au.                      7       IN      AAAA    2a01:8840:bf::1
s.au.                      6870    IN      A       65.22.198.1
t.au.                      10872   IN      A       65.22.199.1
t.au.                      7       IN      AAAA    2a01:8840:c1::1

;; Query time: 0 msec
;; SERVER: 129.94.242.2#53(129.94.242.2)
;; WHEN: Fri Oct 11 15:18:26 AEDT 2019
;; MSG SIZE rcvd: 297
```

From these record, we can find out addresses for name servers.

Q4. 129.94.242

Q5.

```
z5111593@vx4:/tmp_amd/ravel/export/ravel/3/z5111593$ dig cecs.anu.edu.au

; <<>> DiG 9.9.5-9+deb8u18-Debian <<>> cecs.anu.edu.au
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 4567
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 3, ADDITIONAL: 7

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:;, udp: 4096
;; QUESTION SECTION:
;cecs.anu.edu.au.                IN      A

;; ANSWER SECTION:
cecs.anu.edu.au.                3448    IN      A      150.203.161.98

;; AUTHORITY SECTION:
cecs.anu.edu.au.                148     IN      NS      ns3.cecs.anu.edu.au.
cecs.anu.edu.au.                148     IN      NS      ns2.cecs.anu.edu.au.
cecs.anu.edu.au.                148     IN      NS      ns4.cecs.anu.edu.au.

;; ADDITIONAL SECTION:
ns2.cecs.anu.edu.au.            2930    IN      A      150.203.161.36
ns2.cecs.anu.edu.au.            2938    IN      AAAA    2001:388:1034:2905::24
ns3.cecs.anu.edu.au.            148     IN      A      150.203.161.50
ns3.cecs.anu.edu.au.            3448    IN      AAAA    2001:388:1034:2905::32
ns4.cecs.anu.edu.au.            655     IN      A      150.203.161.38
ns4.cecs.anu.edu.au.            47      IN      AAAA    2001:388:1034:2905::26

;; Query time: 0 msec
;; SERVER: 129.94.242.2#53(129.94.242.2)
;; WHEN: Fri Oct 11 20:20:17 AEDT 2019
;; MSG SIZE rcvd: 246
```

DNS name servers are: ns3.cecs.anu.edu.au

ns2.cecs.anu.edu.au

ns4.cecs.anu.edu.au

Type A.

Q6.DNS name: ns2.hec.gov.pk

ns1.hec.gov.pk

Type is A.

Q7. No. The answer of query changes every time I run dig command. Because yahoo cannot fit in one point. Answer of the same domain name may have multiple source.

Q8. No answer for my query.

Q9.

```
z5111593@vx4:/tmp_amd/ravel/export/ravel/3/z5111593$ dig yahoo.com

; <<>> DiG 9.9.5-9+deb8u18-Debian <<>> yahoo.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 32731
;; flags: qr rd ra; QUERY: 1, ANSWER: 6, AUTHORITY: 5, ADDITIONAL: 9

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags::; udp: 4096
;; QUESTION SECTION:
;yahoo.com.                IN      A

;; ANSWER SECTION:
yahoo.com.                 529     IN      A      98.137.246.8
yahoo.com.                 529     IN      A      98.138.219.231
yahoo.com.                 529     IN      A      98.138.219.232
yahoo.com.                 529     IN      A      72.30.35.9
yahoo.com.                 529     IN      A      72.30.35.10
yahoo.com.                 529     IN      A      98.137.246.7

;; AUTHORITY SECTION:
yahoo.com.                 65939   IN      NS      ns4.yahoo.com.
yahoo.com.                 65939   IN      NS      ns2.yahoo.com.
yahoo.com.                 65939   IN      NS      ns1.yahoo.com.
yahoo.com.                 65939   IN      NS      ns3.yahoo.com.
yahoo.com.                 65939   IN      NS      ns5.yahoo.com.

;; ADDITIONAL SECTION:
ns1.yahoo.com.             227965  IN      A      68.180.131.16
ns1.yahoo.com.             54841   IN      AAAA   2001:4998:130::1001
ns2.yahoo.com.             227774  IN      A      68.142.255.16
ns2.yahoo.com.             57378   IN      AAAA   2001:4998:140::1002
ns3.yahoo.com.             277     IN      A      27.123.42.42
ns3.yahoo.com.             277     IN      AAAA   2406:8600:f03f:1f8::1003
ns4.yahoo.com.             52041   IN      A      98.138.11.157
ns5.yahoo.com.             55239   IN      A      119.160.253.83

;; Query time: 0 msec
;; SERVER: 129.94.242.2#53(129.94.242.2)
;; WHEN: Mon Oct 14 19:49:36 AEDT 2019
;; MSG SIZE rcvd: 388
```

Authority answer appears in “authority section”. Query type is NS.

Q10.

```
; <<>> DiG 9.9.5-9+deb8u18-Debian <<>> -x 129.94.209.125 -t NS
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 53631
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags::; udp: 4096
;; QUESTION SECTION:
;129.94.209.129.in-addr.arpa. IN      NS

;; AUTHORITY SECTION:
129.94.209.129.in-addr.arpa. 86400   IN      SOA     maestro.orchestra.cse.unsw.EDU.AU. hostmaster.cse.unsw.EDU.AU. 2019101401 2000 300 1209600 86400

;; Query time: 0 msec
;; SERVER: 129.94.242.2#53(129.94.242.2)
;; WHEN: Mon Oct 14 20:06:24 AEDT 2019
;; MSG SIZE rcvd: 136
```

5 DNS servers.

Q11. Yes. One physical machine can have multiple IP address on it.

