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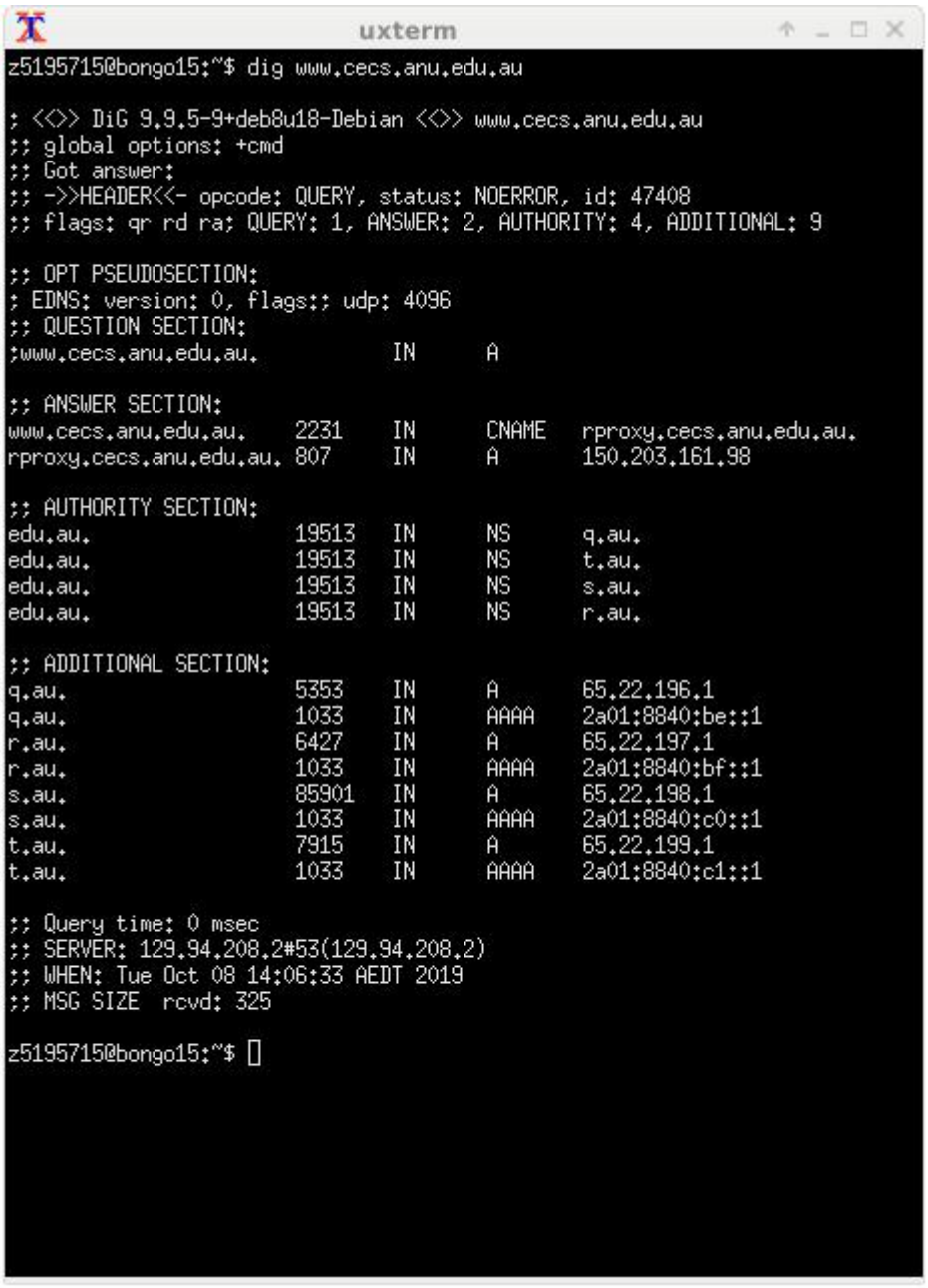
Lab 3

Exercise 3: Digging into DNS



Question 1. What is the IP address of www.cecs.anu.edu.au . What type of DNS query is sent to get this answer?

IP address is 150.203.161.98

A type of DNS query.

Question 2. What is the canonical name for the CECS ANU web server? Suggest a reason for having an alias for this server.

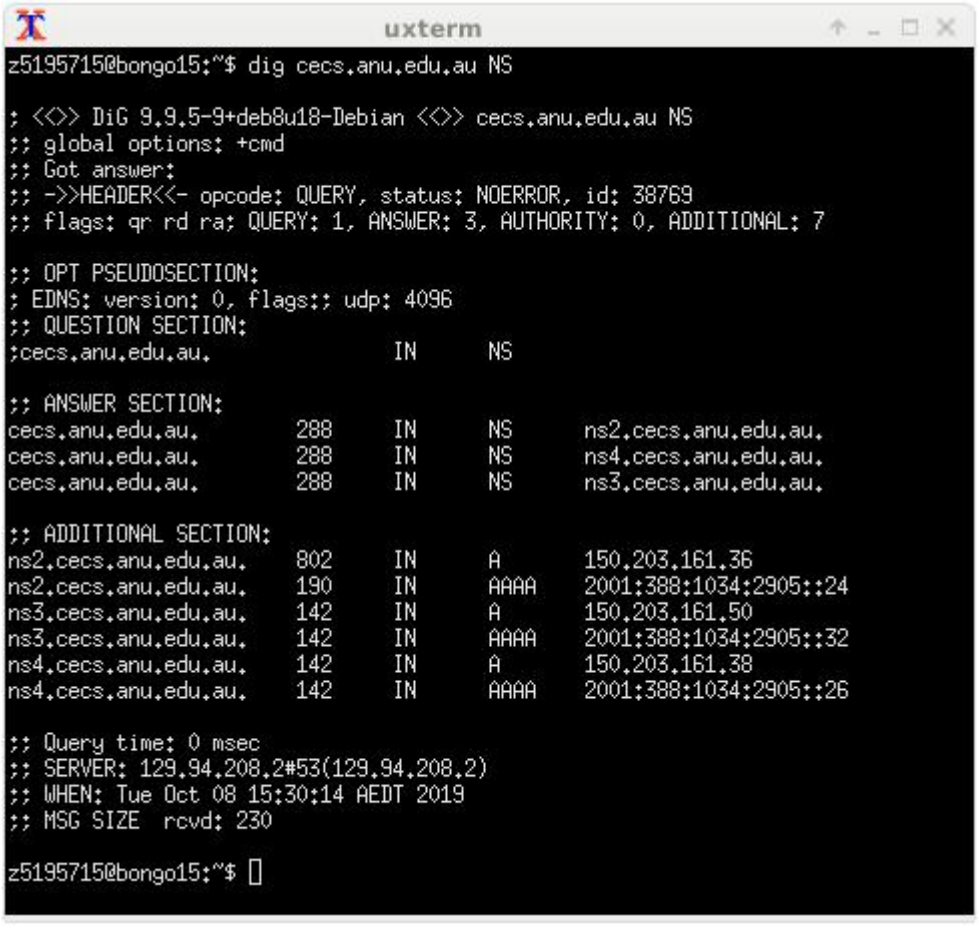
Canonical name is rproxy.cecs.anu.edu.au.
Because canonical name is very long and difficult to remember, an alias makes it easier for users to remember and use.

Question 3. What can you make of the rest of the response (i.e. the details available in the Authority and Additional sections)?

The Authority section includes DNS servers which can provide authoritative answers to the query.In this example,they are q.au,t.au,s.au and r.au.
The Additional section includes the IP addresses of the authoritative DNS servers.An authoritative DNS server has an Ipv4 address and an ipv6 address.

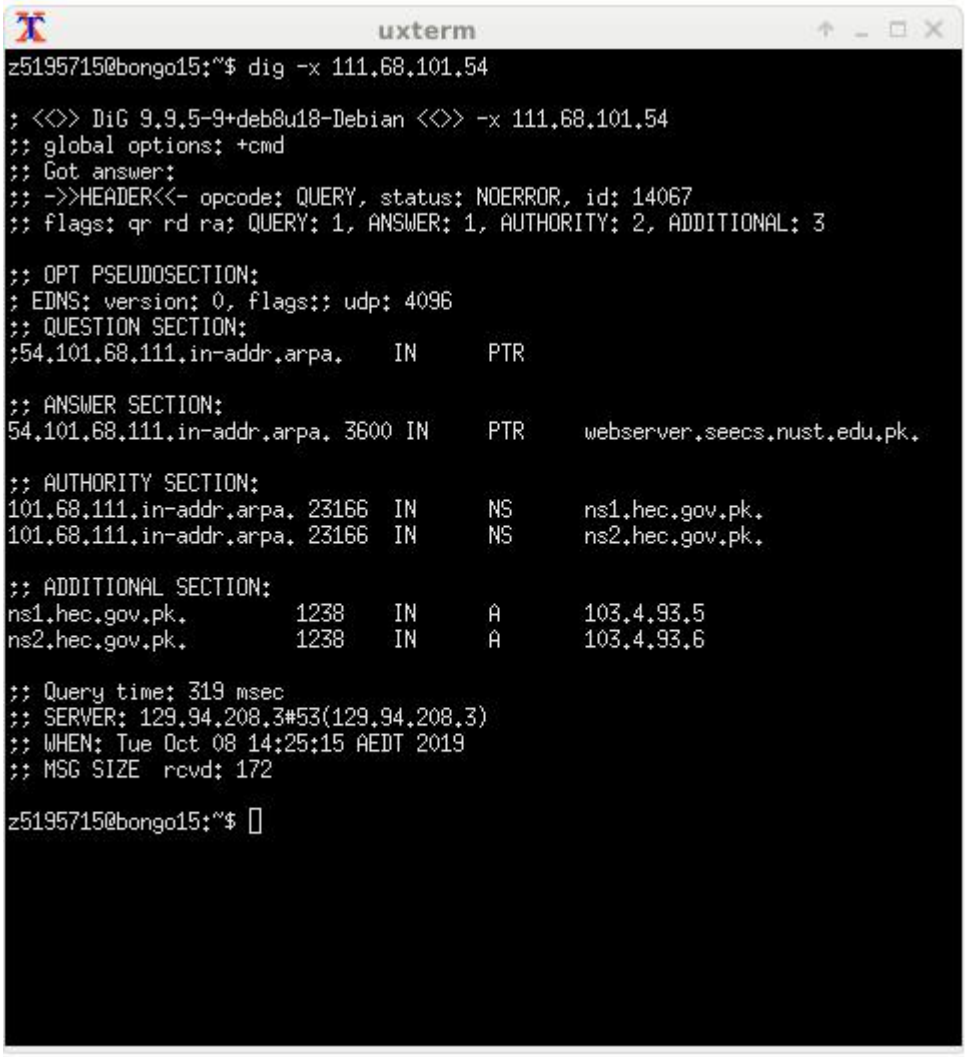
Question 4. What is the IP address of the local nameserver for your machine?
It's 129.94.208.2

Question 5. What are the DNS nameservers for the "cecs.anu.edu.au" domain (note: the domain name is cecs.anu.edu.au and not www.cecs.anu.edu.au)? Find out their IP addresses? What type of DNS query is sent to obtain this information?



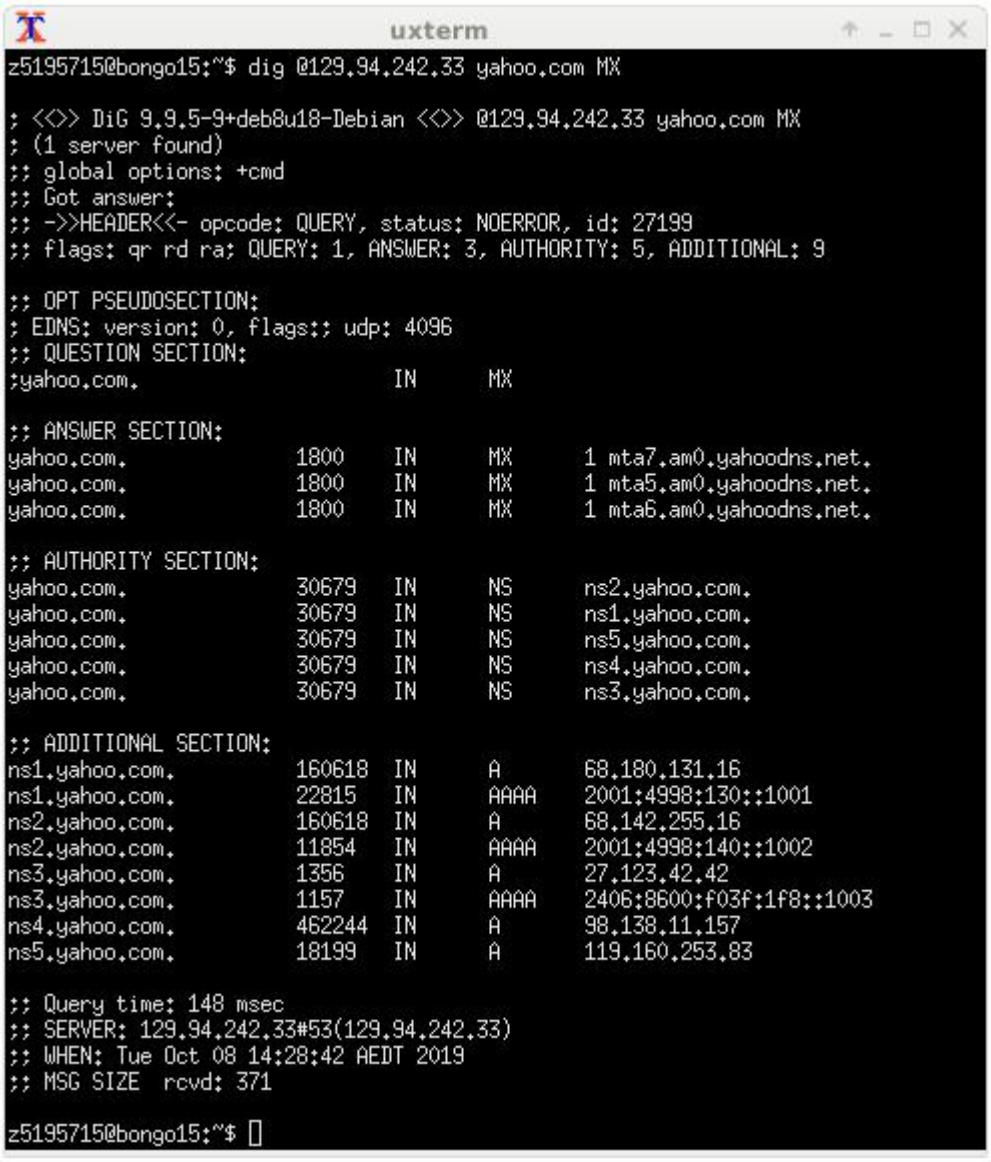
Nameservers are ns2.cecs.anu.edu.au (150.203.161.36), ns3.cecs.anu.edu.au (150.203.161.50) and ns4.cecs.anu.edu.au (150.203.161.38).
NS type of DNS query.

Question 6. What is the DNS name associated with the IP address 111.68.101.54? What type of DNS query is sent to obtain this information?



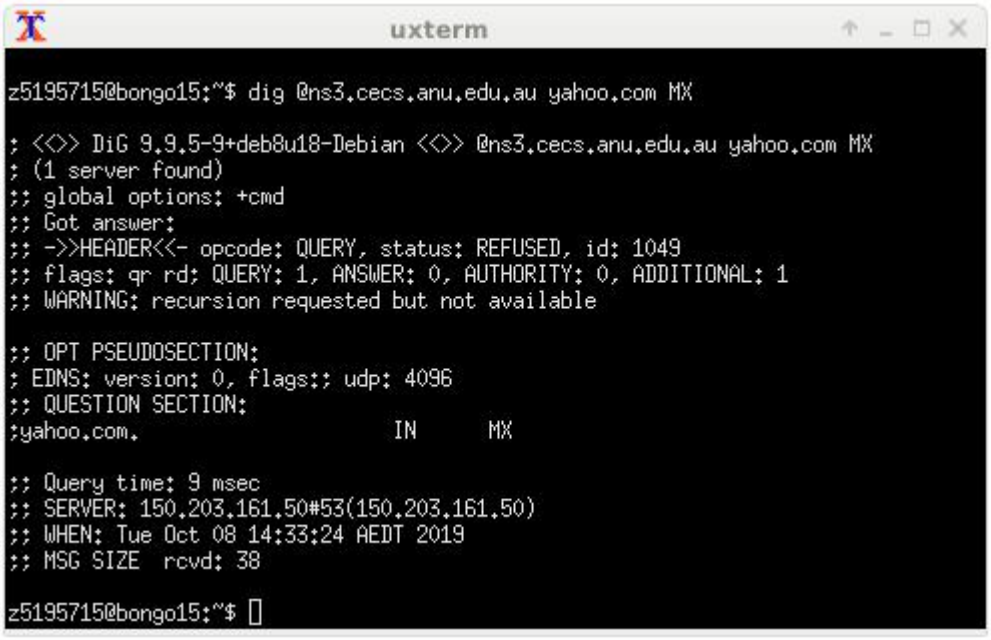
Name is webserver.seecs.nust.edu.pk
PTR type of DNS query.

Question 7. Run dig and query the CSE nameserver (129.94.242.33) for the mail servers for Yahoo! Mail (again the domain name is yahoo.com, not www.yahoo.com). Did you get an authoritative answer? Why? (HINT: Just because a response contains information in the authoritative part of the DNS response message does not mean it came from an authoritative name server. You should examine the flags in the response to determine the answer)



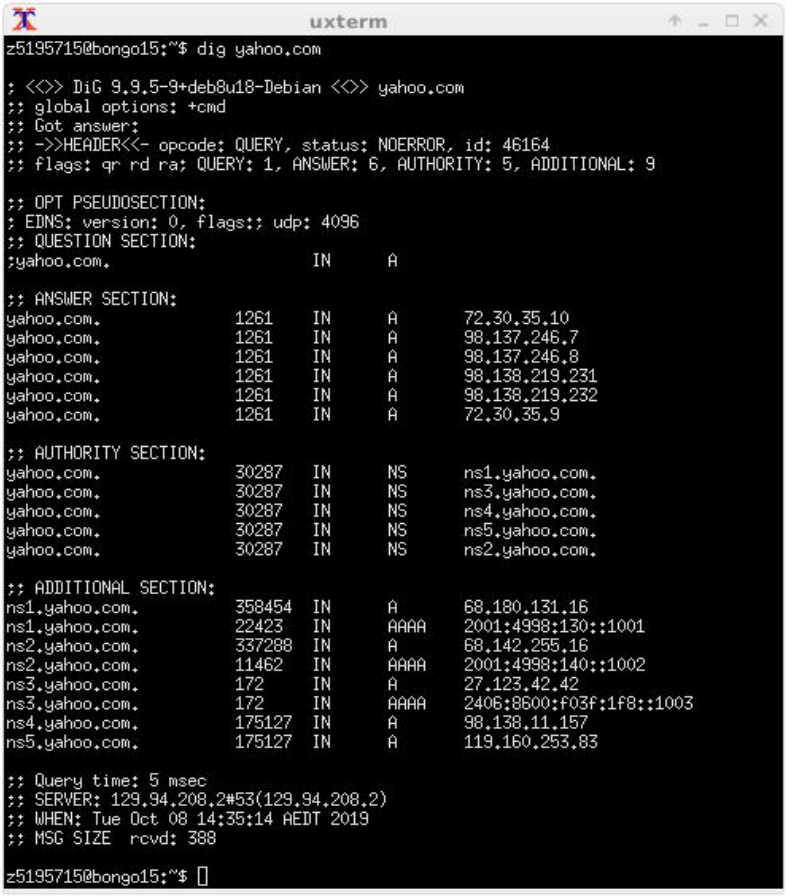
I can't get an authoritative answer because 'aa' cannot be found in flags.

Question 8. Repeat the above (i.e. Question 7) but use one of the nameservers obtained in Question 5. What is the result?

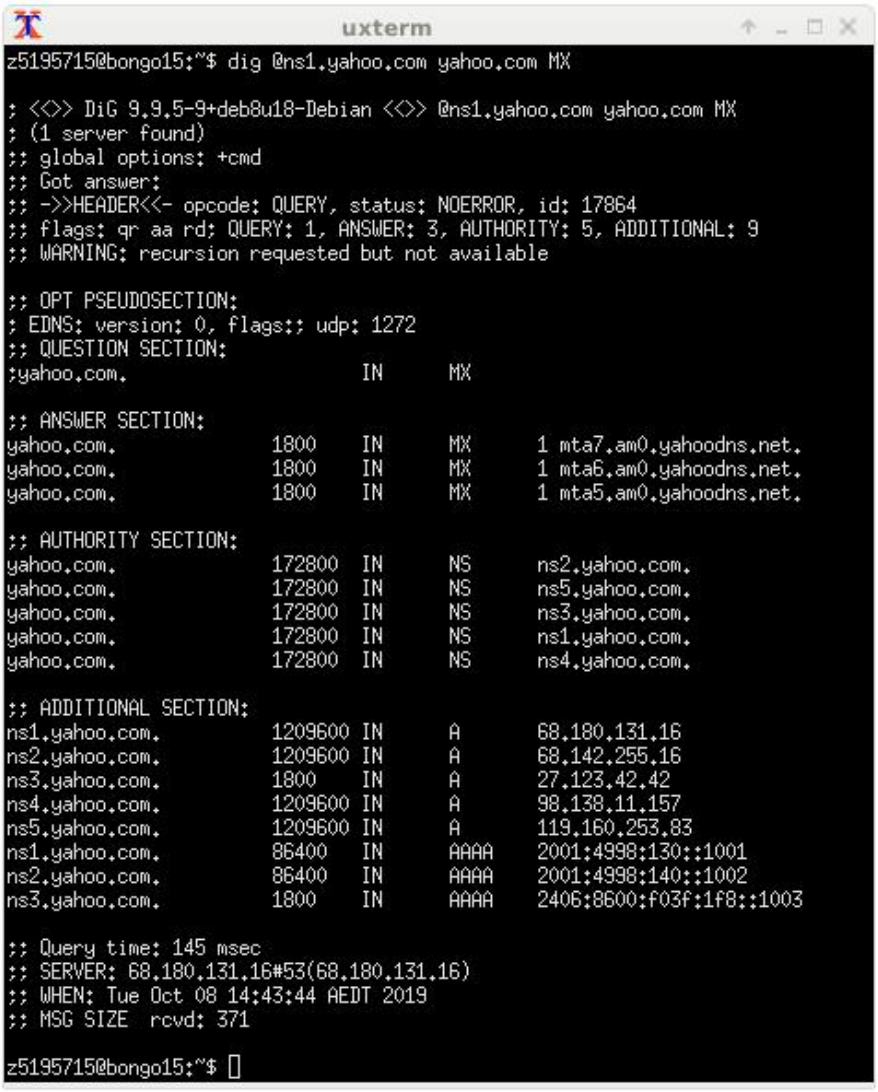


I choose ns3.cecs.anu.edu.au. I can't get a response from yahoo.The status is refused.There is a warning that recursion requested but not available.

Question 9. Obtain the authoritative answer for the mail servers for Yahoo! mail. What type of DNS query is sent to obtain this information?



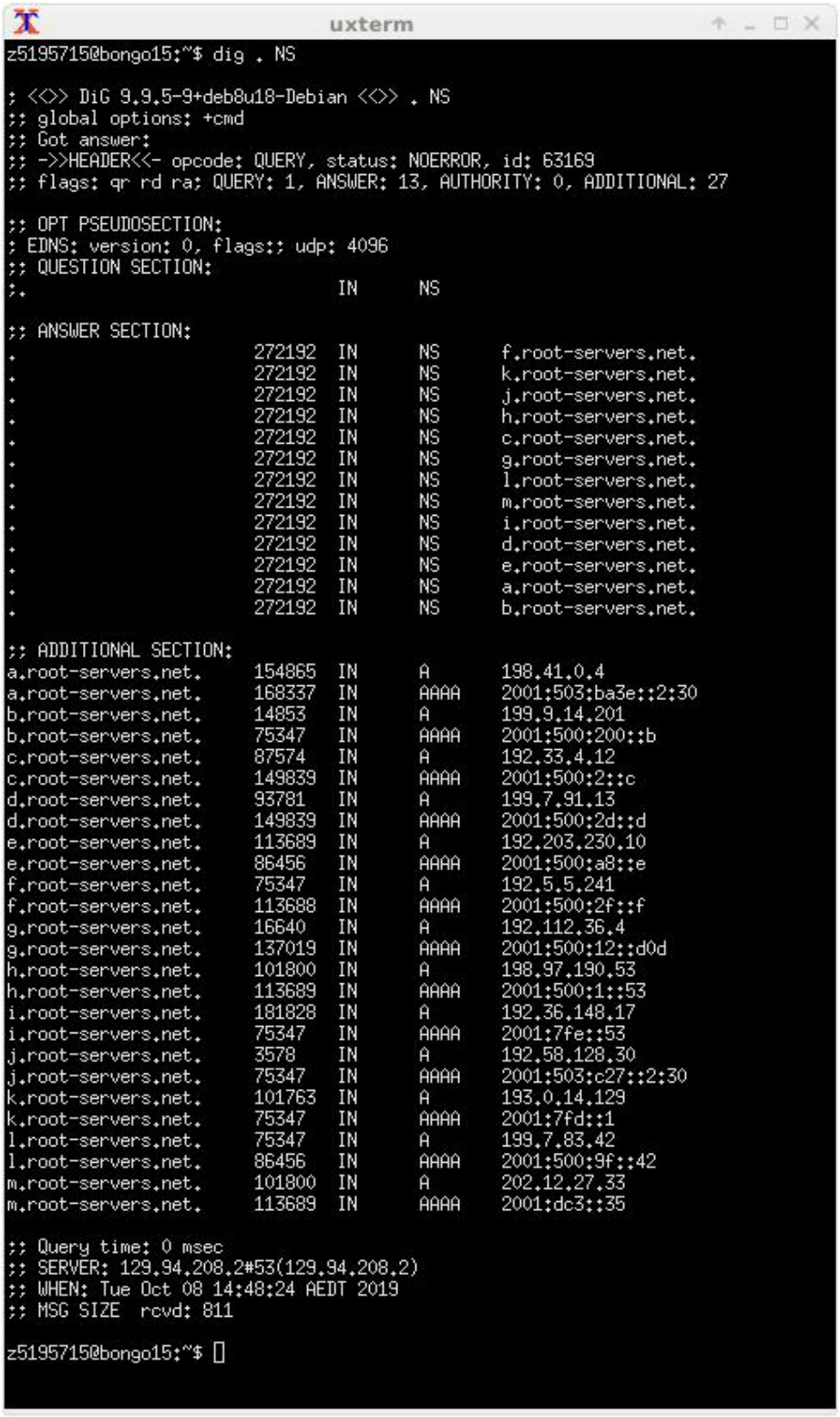
I choose ns1.yahoo.com.



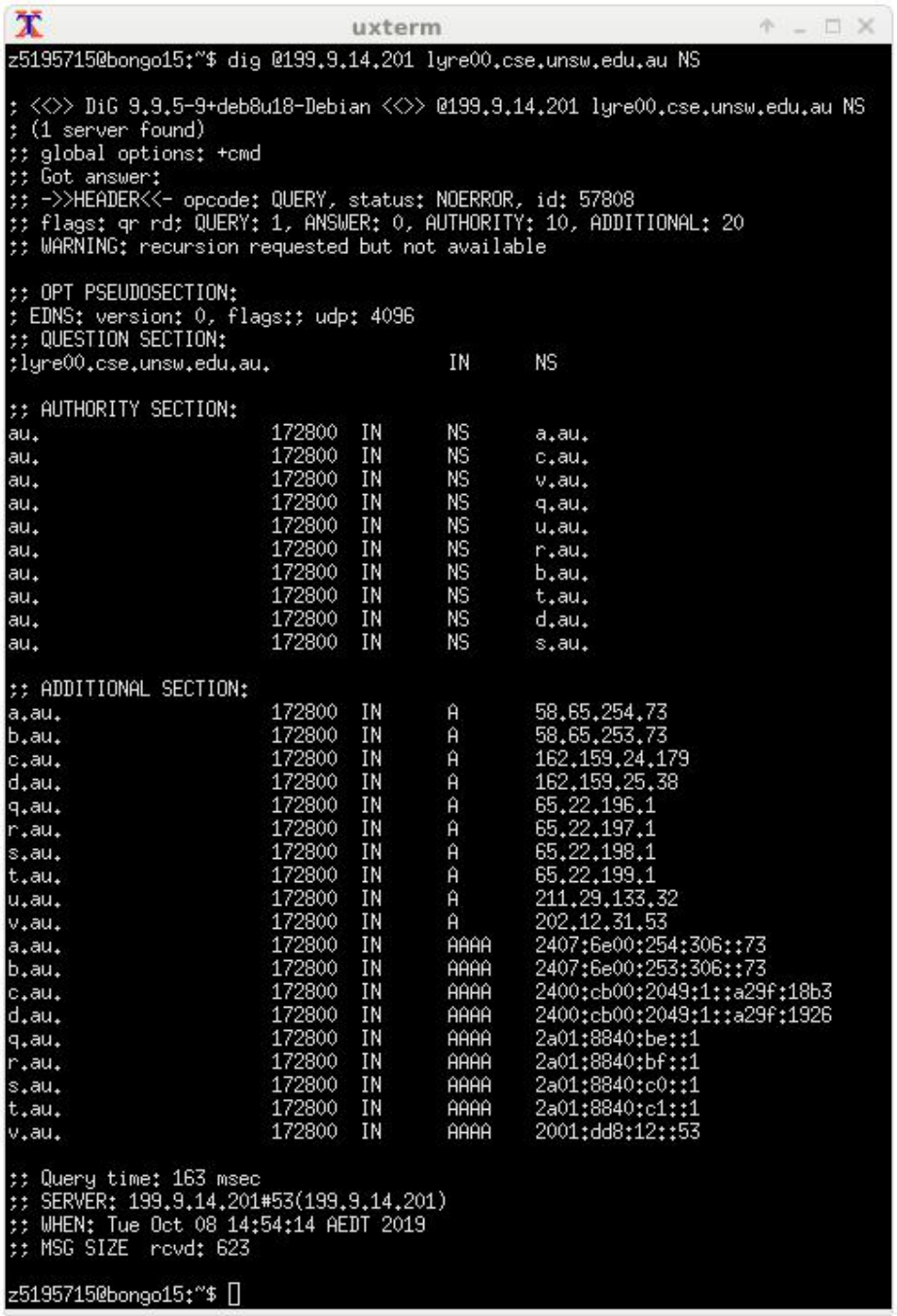
MX type of DNS query is sent.

Question 10. In this exercise you simulate the iterative DNS query process to find the IP address of your machine (e.g. lyre00.cse.unsw.edu.au). First, find the name server (query type NS) of the "." domain (root domain). Query this nameserver to find the authoritative name server for the "au." domain. Query this second server to find the authoritative nameserver for the "edu.au." domain. Now query this nameserver to find the authoritative nameserver for "unsw.edu.au". Next query the nameserver of unsw.edu.au to find the authoritative name server of cse.unsw.edu.au. Now query the nameserver of cse.unsw.edu.au to find the IP address of your host. How many DNS servers do you have to query to get the authoritative answer?

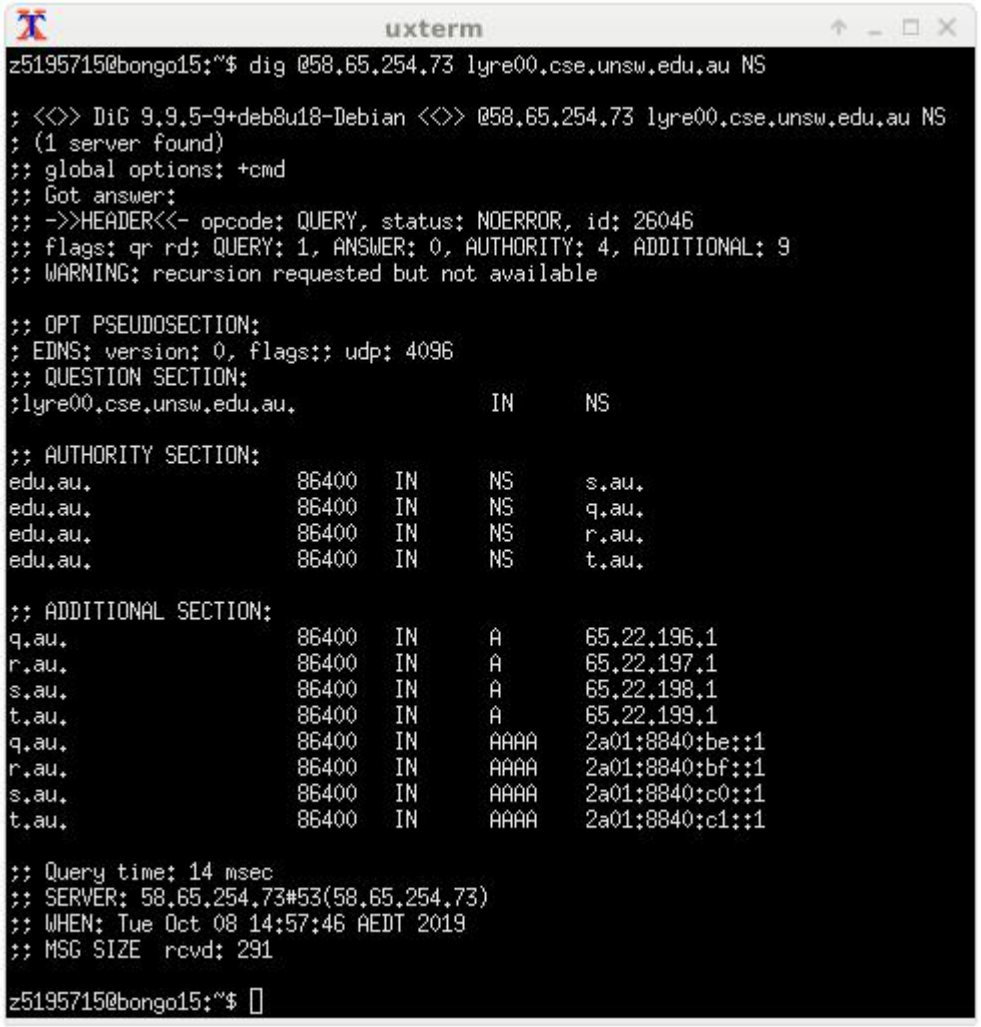
Find the nameserver of . :



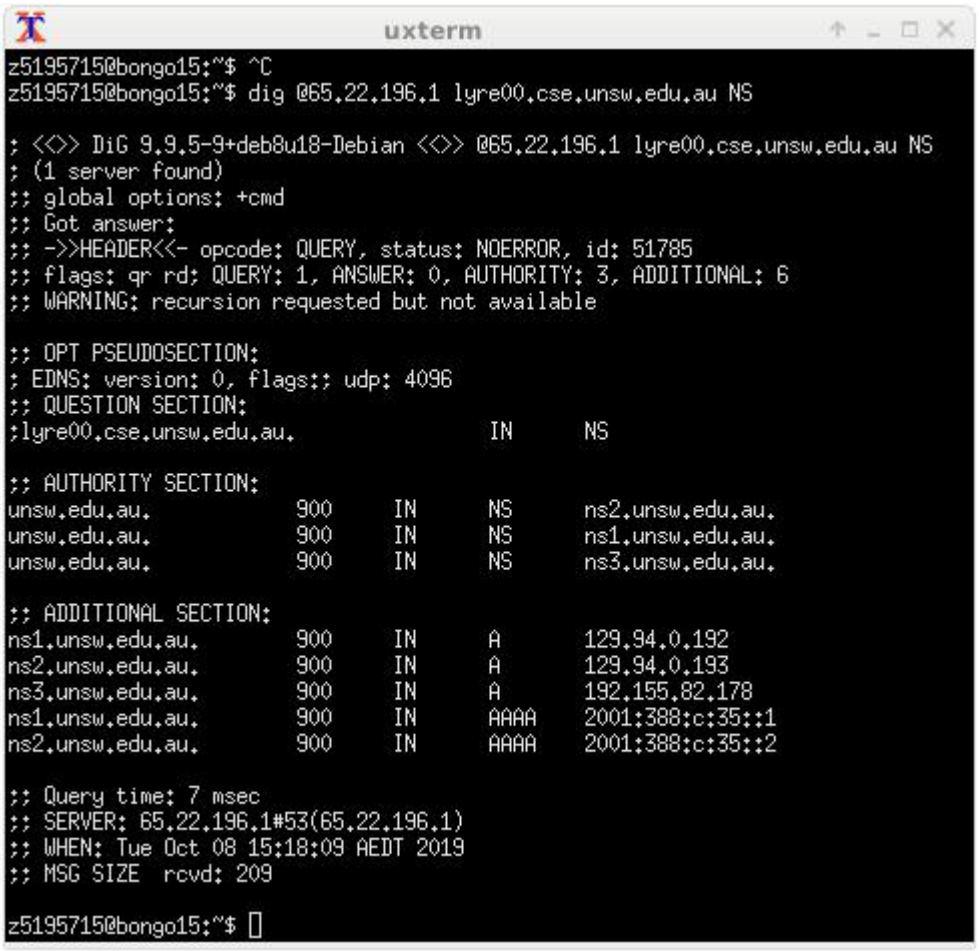
Find authoritative nameserver for au domain:



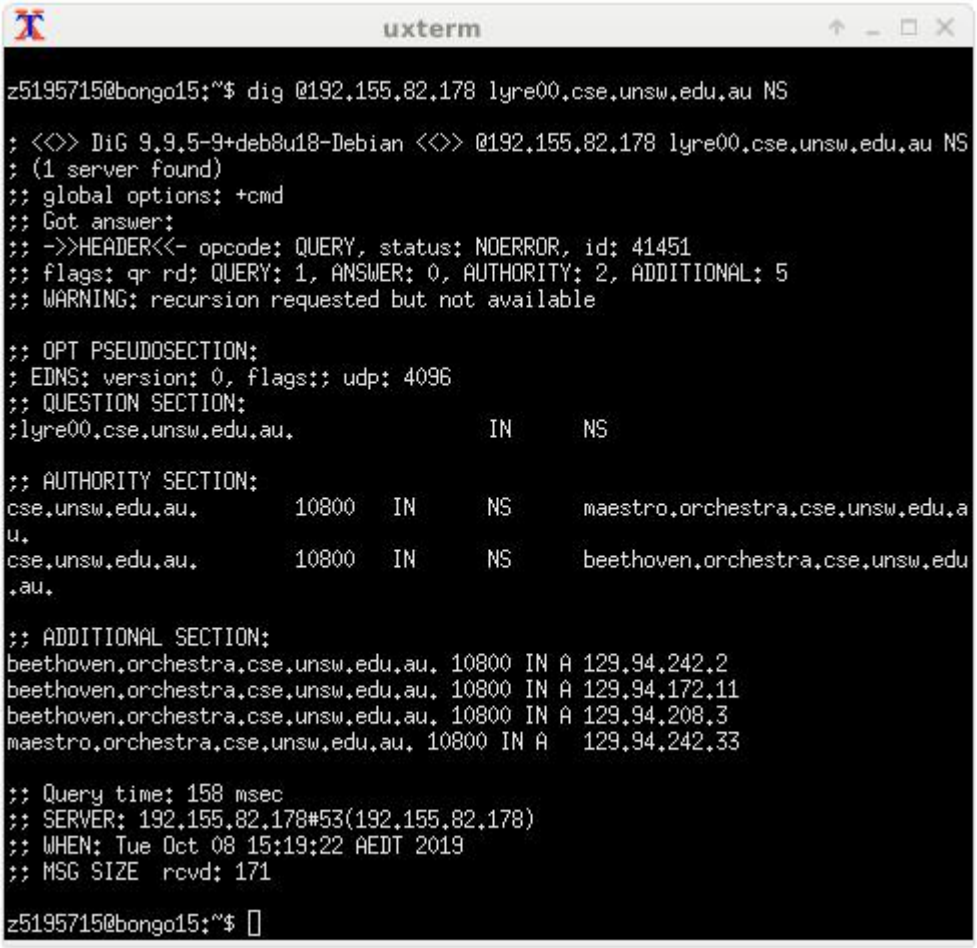
Find the authoritative nameserver for the "edu.au.":



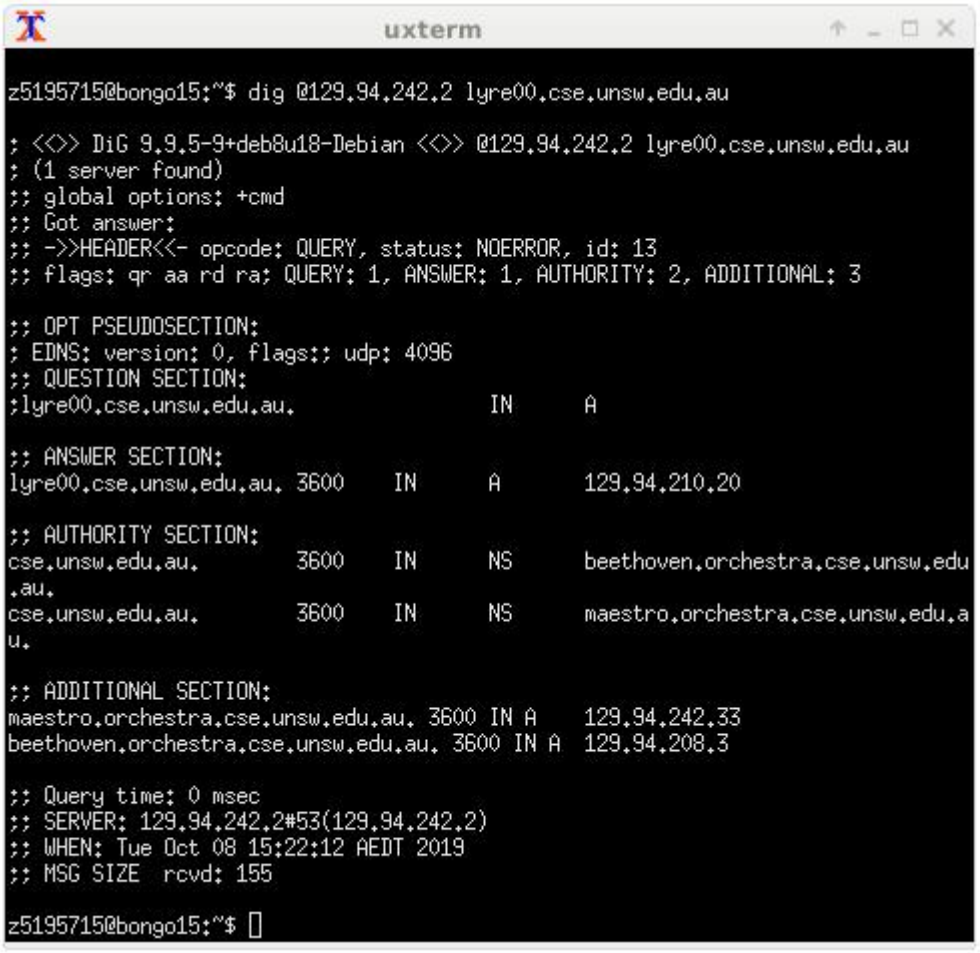
Find the authoritative nameserver for "unsw.edu.au":



Find the authoritative name server of cse.unsw.edu.au:



Find the IP address of lyre00.cse.unsw.edu.au:



IP address of lyre00 is 129.94.210.20
6 DNS servers are queried.

Question 11. Can one physical machine have several names and/or IP addresses associated with it?

Yes, a machine can have several different names and/or IPs.The different names of a particular machine are called aliases, which helps users to remember and use easily. The reason for a machine to have several IP addresses is that it can work on several networks with different interfaces.

Exercise 4: A Simple Web Server

See WebServer.py