Data Communications Laboratory

Domain Name System

**Jai Carey**

**45188416**

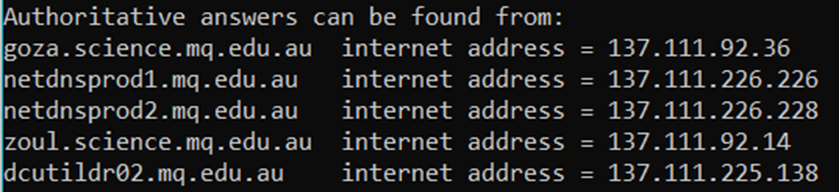
Exercise 1: nslookup

1. Run nslookup to obtain the IP address of the Macquarie University Web server. What is the IP address of that server?

Text

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1. Run nslookup to determine the authoritative DNS servers for Macquarie University.



1. Run nslookup so that one of the DNS servers obtained in Question 2 is queried for the IP address of the Macquarie University Web server. Is there any difference in the output when compared to the first time you did the query in task 1 above?

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Exercise 3: Tracing DNS with Wireshark

1. Locate the DNS query and response messages. Are these sent over UDP or TCP?

**The DNS packets are sent over UDP (User Datagram Protocol).**

Text

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1. What is the destination port for the DNS query message? What is the source port of DNS response message?

**The destination port for the DNS QUERY message is 53.  
The source port for the DNS RESPONSE message is 53.**

1. To what IP address is the DNS query message sent? Use ipconfig to determine the IP address of your local DNS server. Are these two IP addresses the same?

**The DNS QUERY destination address is 128.238.29.23.  
The local DNS server is also 128.238.29.23.**

1. Examine the DNS query message. What “Type” of DNS query is it? Does the query message contain any “answers”?

**The DNS QUERY message is of Type A.  
The query message does not contain any answers.**

1. Examine the DNS response message. How many “answers” are provided? What do each of these answers contain?

**In the DNS RESPONSE message, there are 2 answers provided. Each answer contains a different IP address that is linked to the same requested DNS.**  
  
Text

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1. What is the destination port for the DNS query message? What is the source port of DNS response message?

**The destination port for the DNS QUERY message is 53.  
The source port for the DNS RESPONSE message is 53.**

1. To what IP address is the DNS query message sent? Is this the IP address of your default local DNS server?

**The DNS QUERY destination address is 10.127.5.17  
The local DNS server is also 10.127.5.17**

1. Examine the DNS query message. What “Type” of DNS query is it? Does the query message contain any “answers”?

**The DNS QUERY message is of Type A.  
The query message does not contain any answers.**

1. Examine the DNS response message. How many “answers” are provided? What do each of these answers contain?

**1 Answer and 1 address. The answers contain the address.**

1. To what IP address is the DNS query message sent? Is this the IP address of your default local DNS server?

**The DNS QUERY destination address is 10.127.5.17  
The local DNS server is also 10.127.5.17**

1. Examine the DNS query message. What “Type” of DNS query is it? Does the query message contain any “answers”?

**The DNS QUERY message is of Type NS.  
The query message does not contain any answers.**

1. Examine the DNS response message. What MIT nameservers does the response message provide? Does this response message also provide the IP addresses of the MIT nameservers?

**The IP Addresses are provided of the MIT servers.**

1. How many different types of DNS records can you see?

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1. Looking at your Wireshark window, what is the most significant difference between a normal DNS query and a zone transfer?

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