

Goal:

For this Lab, you must write a simple Android UDP client that will send a query to a DNS server (turing.cs.pacificu.edu, **64.59.233.200, port 53**) to determine the IP address of a user supplied host name. Your application should allow the user to enter a fully qualified domain name (FQDN) and query the DNS server for that computer's IP address. The DNS server to use should be configurable, but only use Turing until you get your appicate well debugged. You will need your application to build a DNS packet containing a single question and your application will need to be able to parse the resulting response which should contain one or more resource records. The response may contain CNAME or A Resource Record types, you only need to be able to display the A Resource Record. You should be able to display up to 5 IP addresses received as A Resource Records in a response.

The DNS Packet:

The DNS packet is most clearly outlined in section 4 of RFC 1035 and section 7.1 of your book. Unfortunately, you will need to deal with packet compression (section 4.1.4 of RFC 1035). The class schedule web page has links to these RFCs as well as an online map of a DNS packet.

Wireshark:

If you run Wireshark while your client is sending packets to the server you should be able to see the contents of your DNS packet. If your packet is well formed, Wireshark will be able to parse the DNS packet inside the UDP packet. The packet filter "port 53" will show only DNS packets.

Package Names:

All of your labs for this course must be in the package:
edu.pacificu.cs.cs360.PUNetID.Lab (Pick one team member's PUNetID to use).

All of your projects for this assignment must be in:
edu.pacificu.cs.cs360.PUNetID.Lab.DNSLab

Grading:

Demonstrate your running code to me before 2:15pm on Feb 20, 2012. Ideally, demonstrate the running code before you leave the lab today or Friday.

Suggested Chain of Events:

1. Build the packet class
2. Build the Android Interface
3. Send the packet across the wire, look at the packet and any response through Wireshark.
4. Debug
5. Parse the response packet and display the results in the Android interface.
 1. Be sure you can display A Resource Records and ignore other record types.

Sample Interface:

Hello World, CS360_DNSAppActivity!
DNS Server (IP Address)

Fully Qualified Domain Name

Query

Results

IP Addresses