

MSc. Advanced Computer Systems
CM50123 Networking
Assignment 2

This assignment is worth 15% of the total marks for the course. It is due in to the boxes outside 1W 2.11 by **16.00 on Monday 14th. December 2009**. Extensions may only be granted by the Director of Studies (Mr. Hayes).

Learning Outcomes: a successful student will know the `tcpdump` tool and how to interpret its output, and will understand how to interpret TCP/IP packets and their interaction, and to comment on TCP implementations.

1. The BUCS file `/u/i/masjhd/CM50123-2009-10.txt` contains a packet trace generated on `172.16.2.1` with `tcpdump` with the numeric (do not interpret names) flag. Annotate* this file, marking every packet, or group of packets, with its function, and commenting on TCP/IP features you observe, such as slow start, Nagle etc. The trace was generated by running a web browser. However, there may be other, unrelated, packets in the trace — just mark them as unrelated. `172.16.0.3` is the local file server, and `2049` the file service port. `172.16.0.1` is the router/firewall. Note that this browser, like Netscape, can open multiple connections: see pp. 170–1 of Stevens volume 3. [5]
2. *Based on this evidence*, comment on the quality of the TCP implementation as you see it on `172.16.2.1`. If you believe that it breaks any MUST or SHOULD statements in an RFC, say so and give a description, with the appropriate reference to the RFC. [5]
3. *Based on this evidence*, comment on the quality of the TCP implementation as you see it on `128.186.6.14`. If you believe that it breaks any MUST or SHOULD statements in an RFC, say so and give a description, with the appropriate reference to the RFC. [5]

Assignment of Marks

Threshold: evidence of interpreting some `tcpdump` output successfully.

Good: substantially correct interpretation of the data, and some analysis.

Distinction: Correct interpretation of the data, and significant analysis.

JHD 16.11.2009

* You may wish to take a copy of the file and edit it to add your annotations.