

# CM50123 Networking

## Assignment 2 of 2

Set: Thursday 17 November 2022  
Due: 8pm, Friday 9 December 2022  
Marks: 15% of unit total  
Set by: Russell Bradford

The purpose of this coursework is to learn how to interpret the output of the `tcpdump` tool, to understand how to interpret TCP/IP packets and their interaction, and to comment on TCP implementations. This will require reading and understanding the relevant RFCs.

1. <http://www.bath.ac.uk/~masrjb/CourseNotes/Assign.bpo/cm50123-tcpdump.txt> is a file containing 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.

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.
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.

You should hand in, via Moodle, your answers for each part, together with any extra information that you feel will clarify your answers.

You should hand in a PDF, **not** DOC or DOCX or other variant

### Notes

- 172.16.0.3 is a local file server
- 172.16.2.1 is on a private NATed network with 172.16.0.1 the gateway/NAT firewall
- Note this browser can open multiple simultaneous connections
- You may find it convenient to take copy of the trace and edit it to add annotations. Make sure your annotations are easy to see

### Assessment Criteria

- A good solution will have correct interpretation of the data, with thorough annotation of the TCP/IP features present; and strong analysis of the compliance of the TCP implementations
- A passing solution will substantially correct interpretation of the data, and some analysis
- A poor to failing solution will have substantially incorrect interpretation of the data, or weak analysis

## Marking and Feedback

Feedback on this assignment will be given via Moodle, normally within three semester weeks.

This unit will be marked anonymously, so you may wish not to put your name on your submission.

This is individual coursework. Plagiarism is not acceptable: all work must be your own.

<https://library.bath.ac.uk/referencing/plagiarism>

If you have a good reason for an extension to the deadline for this coursework, please apply to the Director of Studies, Marina De Vos: forms to apply for an extension are on Moodle (on the Student Zone page, not the Unit page).