MSc. Advanced Computer Systems
CM50123 Networking
Assignment 1

This assignment is worth 10% of the total marks for the course. It is due in to the Boxes outside 1W 2.11 by* **16.00 on Monday 16 November 2009**. The work should be done from the BUCS machine `midge` (note that `ss1` and `amos` have ping blocked to external sites).

Learning Outcomes: a successful student will know the `traceroute` tool and how to interpret its output, and will understand the topology (as seen from the University of Bath) of a substantial portion of the Internet.

Not all routers, especially on JANET, respond very informatively to `traceroute` packets, especially when heavily loaded, so try to do this at relatively quite times (note that "quiet" in the U.S. is not the same as "quiet" in the U.K.), and not all at the same time (because you will all be perceived as coming from the same computer).

1. Use traceroute (`/opt/masjhd/traceroute` on `midge` only) to various U.K. Universities to discover, as far as you reasonably can, how each of the regional networks (see `http://www.ja.net/images/company/network-topology/topology-schematic.pdf`) is connected to JANET *as seen from the University of Bath*, and how Bath reaches JANET for each of them. Note that `topology-schematic` *is* accurate as a schematic, but misleading, especially with respect to the placement of Bristol and Reading. [4]

2. Use traceroute (`/opt/masjhd/traceroute` on `midge` only) to various U.S. Universities to discover as much as you reasonably can of their connectivity to us *as seen at the IP level, and from the University of Bath*. This will tend to be via the LambdaRail
   `http://www.nlr.net/services/map`
   or Internet2
   `http://www.internet2.edu/pubs/networkmap.pdf`
   Note that not all the nodes on these maps are necessarily visible at the IP level. [6]

You should hand in your answers for each part (the answers themselves will fit on one or two pages for each part, possibly a copy of the relevant map with the visible routes coloured and labelled with the number of the justifying evidence), together with any appendices you feel that justify these answers. The answers should be bound/stapled together with an Individual Coursework Submission Cover Sheet.

Assignment of Marks

Threshold: evidence of interpreting some `traceroute` output successfuly.

Good: substantially correct depiction of the relevant topology, as seen from the University of Bath, with supporting evidence.

Distinction: Correct depiction of the relevant topology, as seen from the University of Bath, with complete supporting evidence.

JHD 19.10.2009

Assignment 2 will probably be set towards the middle of November, for completion 14 December 2009.

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* Note that extensions may only be granted by the Director of Studies.