Running the mosquitto\_pub/sub clients on the lab machines turned out to be a little fiddlier than planned, but is not too difficult:

- 1. Download version 1.5 of the mosquitto package from <a href="http://mosquitto.org/downloads">http://mosquitto.org/downloads</a>
  - a. Open a terminal and find the downloaded file
  - b. Untar/unzip the download ('tar xvf ...')
  - c. Change into the mosquitto directory just created
- 2. Edit the 'config.mk' file, and comment out three options (relating to TLS/UUID support) lines 24, 29 and 69
- 3. Run 'make' in that directory
- 4. Copy the new library somewhere useful: 'sudo cp lib/libmosquitto-1.5.so.1 /usr/lib'
- 5. You can now run the command line clients. Change into the 'client' directory and invoke './mosquitto\_pub --help' and './mosquitto\_sub --help' to get the command line arguments you need.
- 6. Easiest way to invoke them is with
  - a. -L mqtt://<username>:<password>@3310exp.hopto.org/topic (careful to escape/quote it all when reading the topic \$SYS/# )
  - b. -i 3310-<uni.id> gives your client a unique index, otherwise you will kick off your other clients.
  - c. -v for verbose prints the topic name before the value; otherwise you just get just the messages, which is almost never helpful.