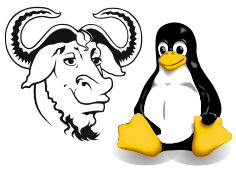

Practical Assignment: Using Cricket to Monitor Broadcast and Multicast Network Traffic

Report Submission Deadline: Thursday 8 August 2002

Your task is to create a web-based system that monitors broadcast and multicast network traffic using Cricket and SNMP. You are required to provide monitoring of the following:

- monitor incoming and outgoing network traffic on *all network interfaces* of your computer;
- monitor incoming and outgoing traffic which is *not unicast* on *all network interfaces* of your computer.

All network traffic is to be monitored in units of *bits per second*. Kilobits or megabits per second are okay. One kilobit per second is 2^{10} bits per second; one megabit per second is 2^{20} bits per second.

You are required to submit a report showing screenshots of your work, including a hard copy of the Cricket setup that you wrote to achieve this, and a written description of how it works. At least one of your screenshots should show a short-term graph with at least six hours of data collected by your system.

To do this, you will need to have the agent running on your machine, configured with access to the Mib-2 tree. You should have done this already; the process is described in the handout entitled *SNMP Agent and the Set Operation*.

For each of the two variables you monitor, you should provide:

- at least one set of graphs, monitoring the data over a daily, weekly, monthly and annual basis;
- meaningful labels to the graphs; for example, the graph for Internet network traffic should be labelled something like: "Internet network traffic" rather than as "`3`" or "`ppp0`". The axes of the graphs should also be labelled properly.
- meaningful names on the links to the graphs.

For each network interface, there should be one set of graphs for the broadcast and multicast data, and another set for the total network traffic.

Note that the Net-SNMP agent does not implement the deprecated `ifInNUcastPkts` or `ifOutNUcastPkts` managed objects in the `mib-2 ifTable`. To implement the requirement for monitoring non-unicast network traffic, you will need Cricket to perform some arithmetic with the data from the available managed objects in the `mib-2 ifTable`.

Please note that I have revised the first Cricket document quite a lot, with some useful description of the way that Cricket works, and its configuration. It is available at `http://nicku.org/snm/lab/cricket/cricket.pdf` and `http://nicku.org/snm/lab/cricket/cricket.pdf`.

You should be able to explain what you did and why. Your work must be original.