Assignment III
Ad Hoc Networks - Mobile Ad Hoc Networks
Winter 2007/2008

Prerequisite

- libpcap-format readable packet analyzer (e.g. *Wireshark* or *Ethereal*, *Kismet*) is installed on the host

- two Wi-Fi capabled nodes (Gumstix(-es) or laptops)

- *tcpdump* module is installed on your Gumstix or/and laptop

- get two libpcap-format files (staticLog and mobileLog) from our repository
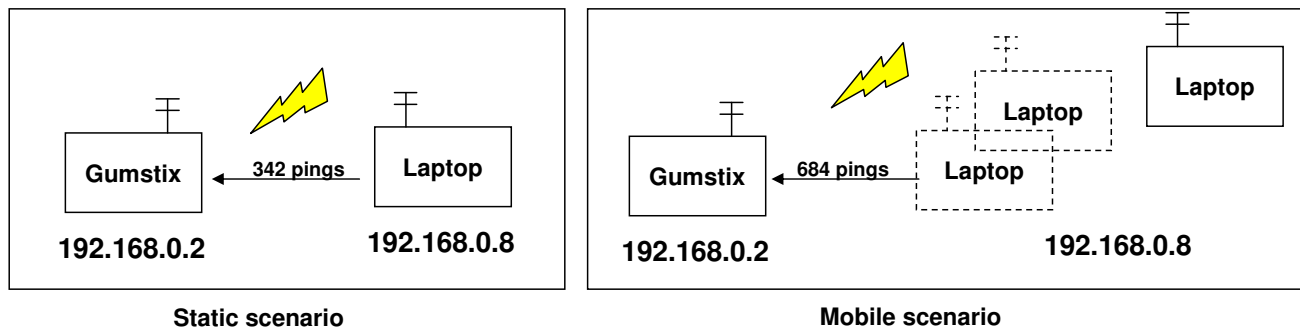
Section I: Packet and Traffic Analysis

Figure 1: Testbed Setup

Task

Based on the testbed shown in Fig. 1, the two log files: *staticLog* and *mobileLog* were generated by *tcpdump* running on Gumstix.

- Examine the logs using the packet analyzer installed on the host.

- Select one packet from the log and explain the packet encapsulation and decapsulation process while the packet crosses layer by layer over OSI. You can attach/draw a packet diagram to support your answer.

- Compute the packet loss in both static and mobile scenarios. Discuss if the value obtained represents the overall packet loss between two nodes. Explain the factors that cause the packet loss difference in both scenarios.

- Set up the test bed shown in Fig. 1 (*or you can use 2 gumstixes*) and generate two log files in static and mobile scenarios. Draw the link layer header of the packet if IEEE802.11 header presents in the packet.

NOTES

- You can attach any file to support your answers.

- Submit your answers by 27th November 2007.

- You should make sure that every team member understands all the tasks done, and is able to explain them.

- A gentle reminder *(again)*: you are encouraged to start thinking about your project topic.