ASSIGNMENT 2

Simulating networks with ns-2

What do you learn today ?

We will learn the following today:

- Simulation of Hidden node problem and Exposed node problem
- Simulating dynamic networks in NS-2

Problem Statement C1 (Compulsory; Difficulty level *; 100 points)

Construct wireless networks and conduct simulations in NS-2 for following:

1. Let us consider a 3 node topology (A, B and C), where A is the source and C is the destination. The coordinates of A and C are (50, 50) and (400, 50). A and C are out of each others range. B is an intermediate node acting as a router. Use DSDV and AODV as the underlying protocols. Consider CBR traffic at 200 Kbps. Use the following scenarios in your simulation:

(a) when B is a static router at (200, 50)
(b) when B is a dynamic router moving from (0, 50) to (200, 50) in a straight line at a constant speed

Plot throughput at C against time for both scenarios using both AODV and DSDV.

2. Demonstrate hidden node problem and exposed node problem by conducting simulations on suitable topologies.

Problem Statement O1 (Optional; Difficulty level **; 10 bonus marks)

Compare the performance of AODV and DSDV in both the scenarios.

Problem Statement O2 (Optional; Difficulty level ***; 10 bonus marks)

Compare the IEEE 802.11 CSMA/CA protocol performance with and without RTS/CTS.

NOTE:

- The assignment must be uploaded to https://sakai.iitd.ac.in (in certain exceptional cases, the TAs may allow it to be mailed to dslab2013.iitd@gmail.com)
- Submission deadline is 05:30 PM today
- Submit a zip file named assignno_entryno having 2 folders:
  1. CODE: Suitable files associated with the assignment
  2. DOCUMENTATION: .pdf and .tex file of your report

Copying is counter-productive and will be penalized.

Reading instructions for the next week

Next week, we will be doing assignments on socket programming. Please read the tutorial here.