ENSC 427
Communication Network
Final Project Presentation-Spring 2012

Performance evaluation of TDMA Vs 802.11(CSMA)

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Presentation Structure

- Introduction and Background information
- Implementation of the Project
- NS-2 Simulation and Simulation Result
- Future Work,Conclusion and Q&A

Introduction and Background

- TDMA:

  Time division multiple access (TDMA) is a probabilistic Media Access Control (MAC) protocol in which is a channel access method for shared medium network.

Introduction and Background(Cont)

- CSMA:

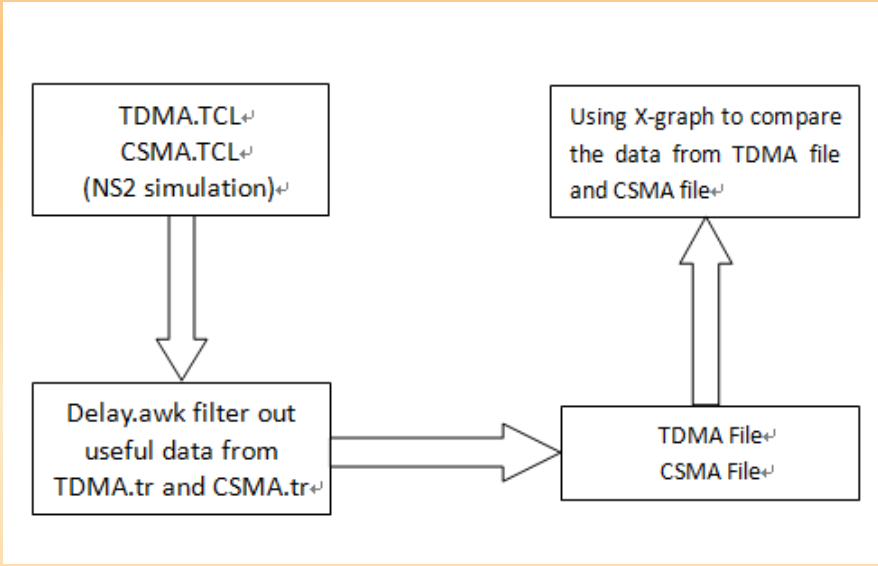
  Carrier Sense Multiple Access (CSMA) is also a probabilistic media Access Control (MAC) in which a node verifies the absence of other traffic before transmitting on a shared transmission medium.

Implementation

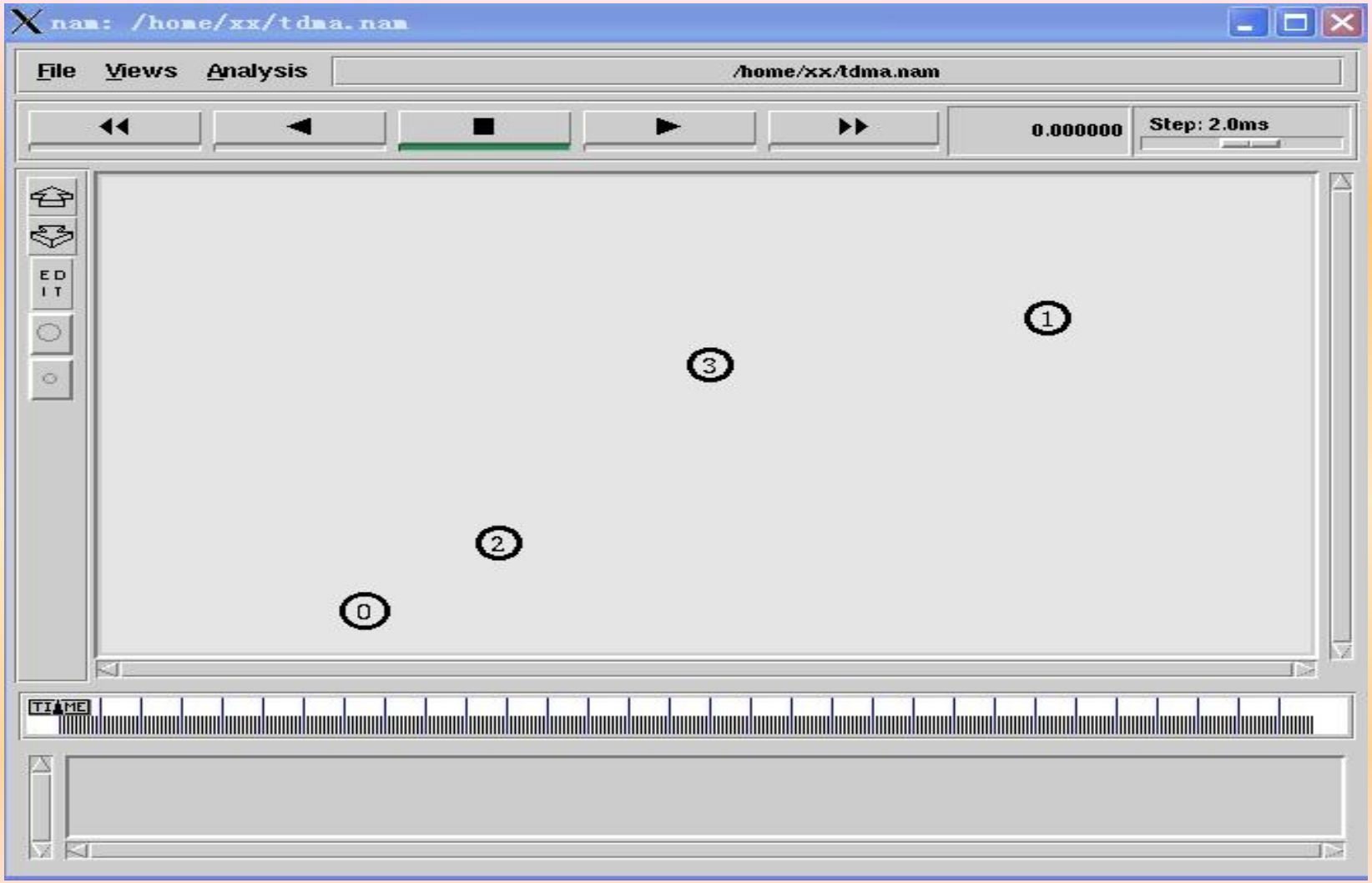
- Create 4 nodes
- Assign node0 is sender, and node1 is receiver ; node1&2 is transporters
- Sending
  - packetSize 48 &4800
  - Rate 6 kb
  - Start at 10s later
  - Every 10 s sent one packet

Implementation(Cont)

- using awk to filter out the useful data
  - When a packet is sent from node0, and when node1 receive the same pactet
  - Receiving time –sending time= delay
- use xgraph to plot two delay into one graph

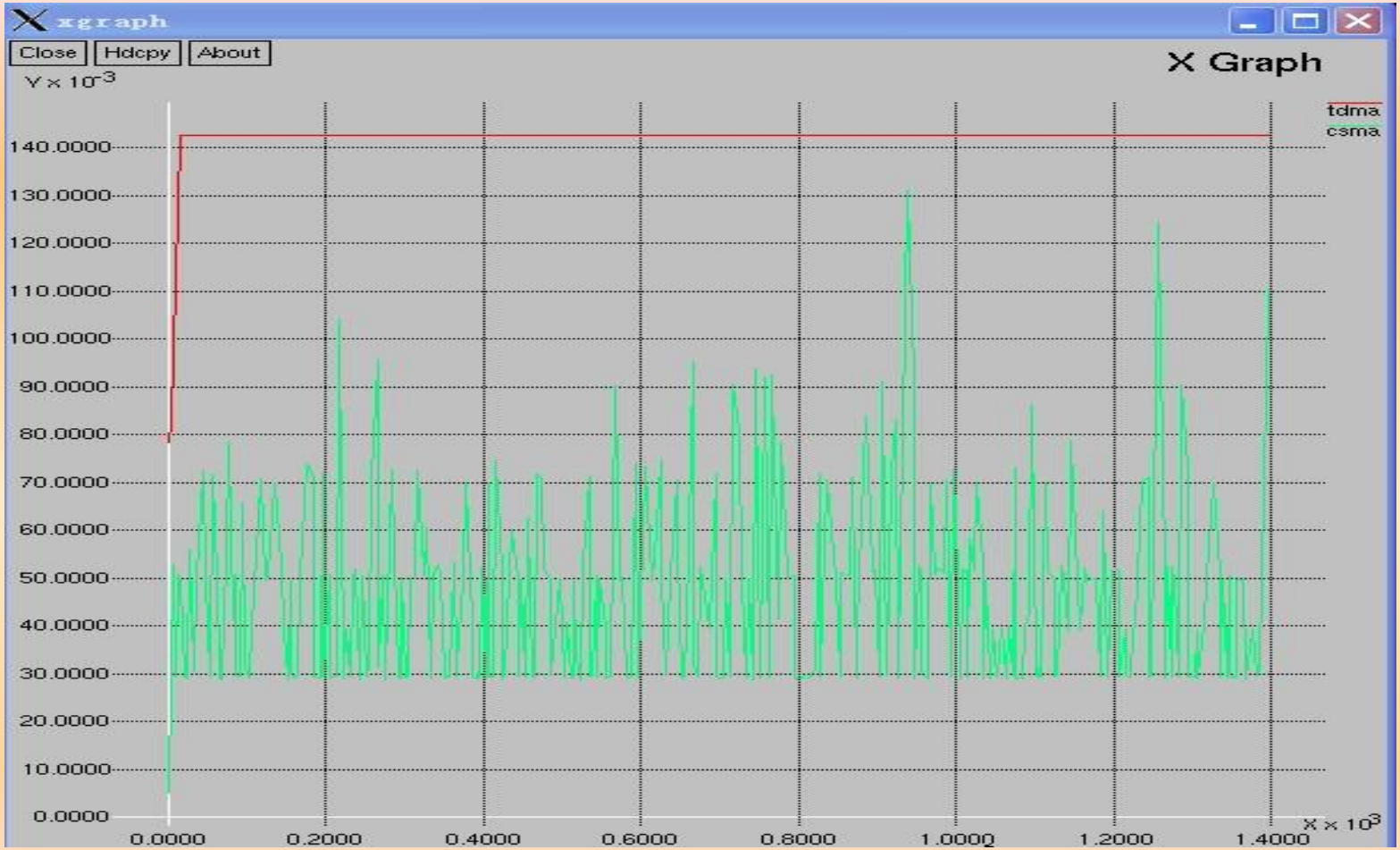


Simulation of result(nam)



Simulation with packet size 48

Simulation with packet size 4800



Conclusion

- Small amount of data
  - TDMA: Stable, Large delay
  - CSMA: Stable, Small delay
- Large amount of data
  - TDMA: Stable, Larger delay
  - CSMA: unstable, smaller delay

Conclusion(Cont)

- Comparing:
  - Huge amount of data transfer required
  - Both CSMA and TDMA have large delay
  - TDMA is much more stable
  - Therefore, TDMA is BETTER

Future Work

- Make the simulation more accurate
  - More packets sizes can be simulated
  - New graph, delay vs. size of packets graph, can be drawn
- Make a better protocol
  - TDMA and CSMA can be combined to a new protocol
  - In small amount of data, the new protocol performs as CSMA
  - In huge amount of data, the new protocol performs as TDMA

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