



ENSC 427: Final Project Presentation

Peer-to-Server-Peer (P2SP) Simulation and Network Load Analysis

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[http://www.sfu.ca/~gheng/427web/427\\_website/main.html](http://www.sfu.ca/~gheng/427web/427_website/main.html)



# Agenda

- Objectives
- Introduction to P2SP Network
- OPNET Implementation
- Simulation Result
- Animation
- Future Improvement



# Objectives

- Implement the amazing but controversial P2SP protocol with OPNET
- Analyze
  - The performance of P2SP network compared with simple P2S and P2P
  - The impact of P2SP on server load



# Introduction to P2SP Network

- Used to acquire desired data from the Internet as well as the peers
- Combining the idea of P2S and P2P
- Sharing information of the servers that contain desired data
- Examples:
  - Bitcomet
  - Thunder

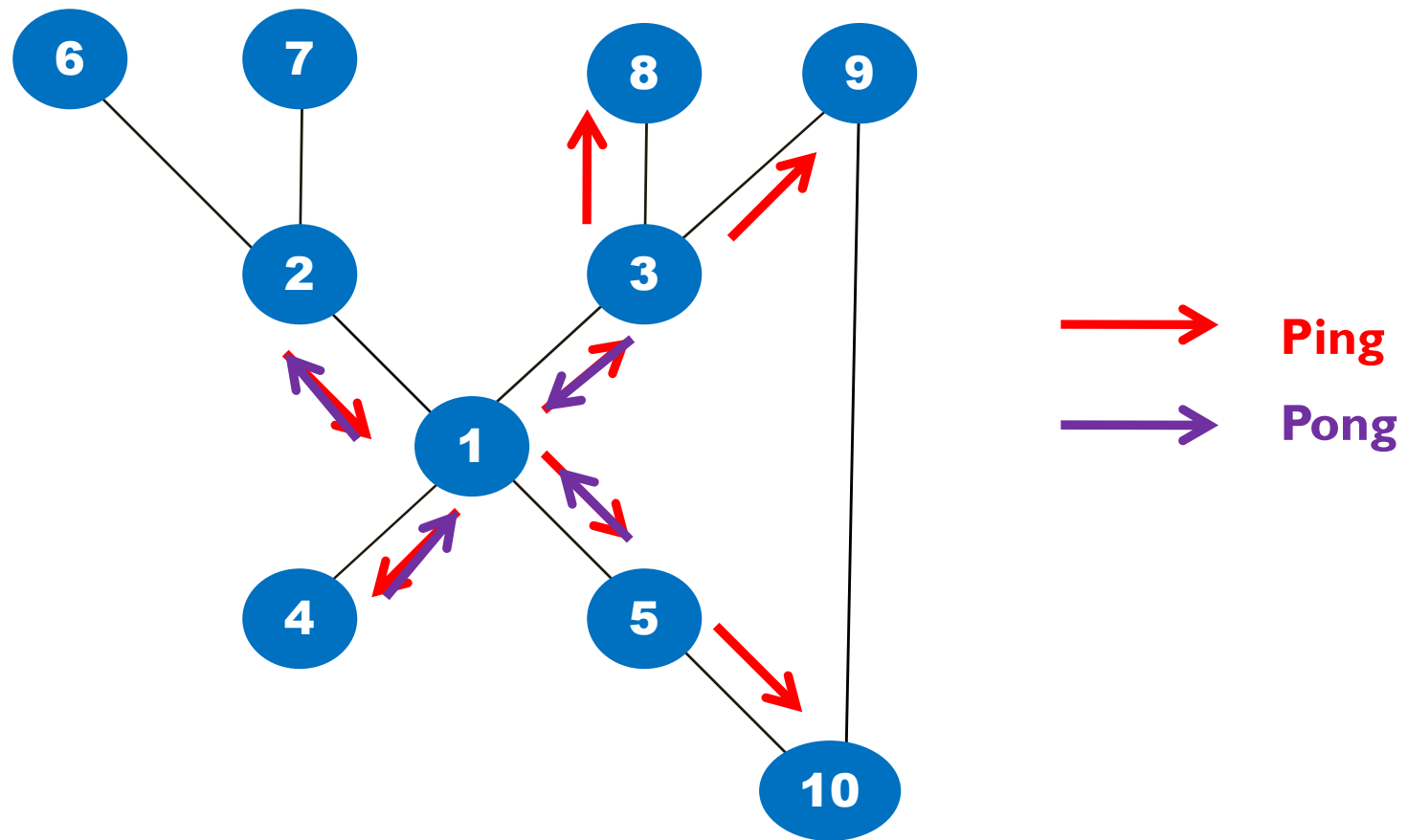


# P2S Protocols

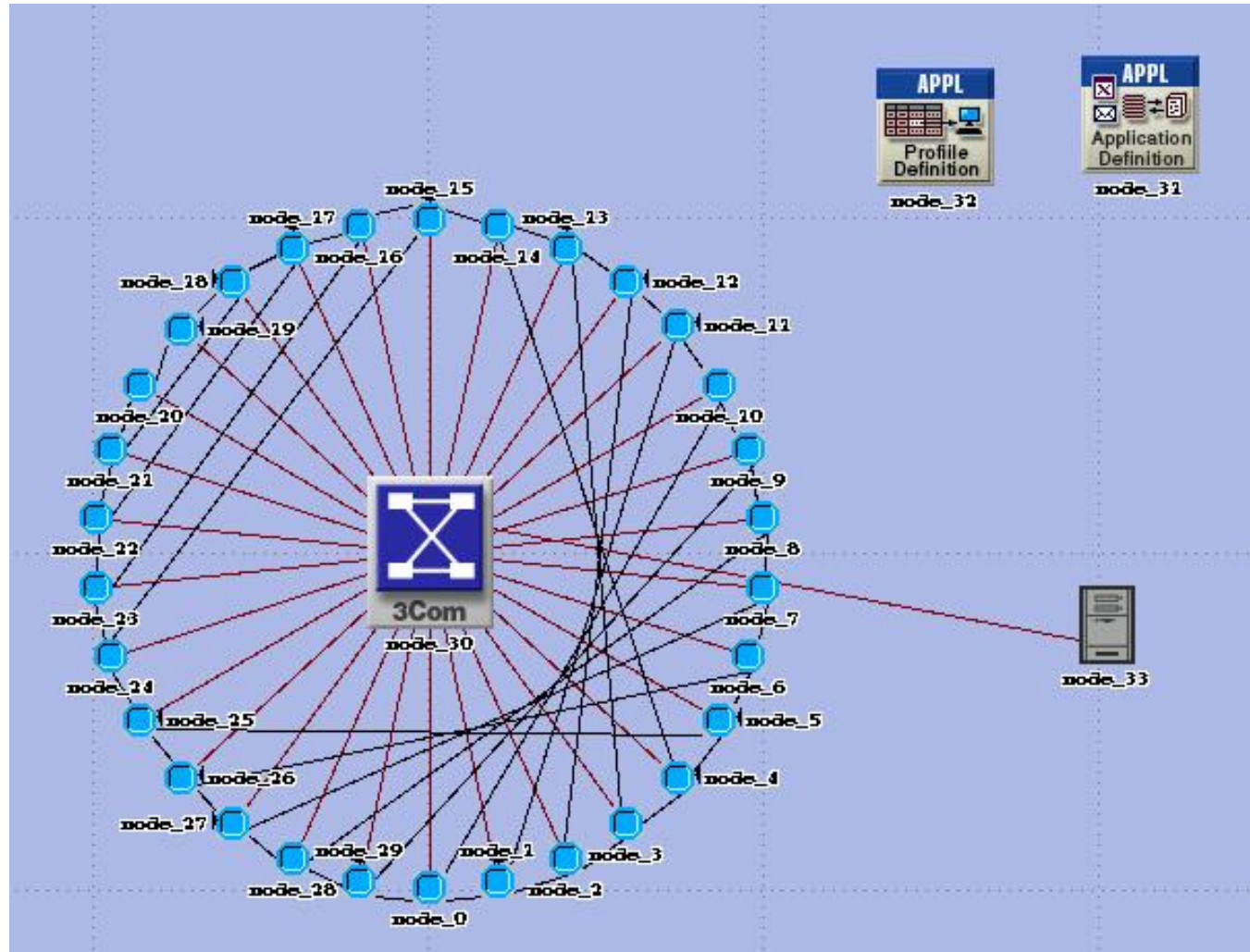
- Common Internet data transfer protocol
  - HyperText Transfer Protocol (HTTP)
  - File Transfer Protocol (FTP)
  - Post Office Protocol version 3 (POP3)
- Example:
  - IE
  - Flashget

# P2P Protocols

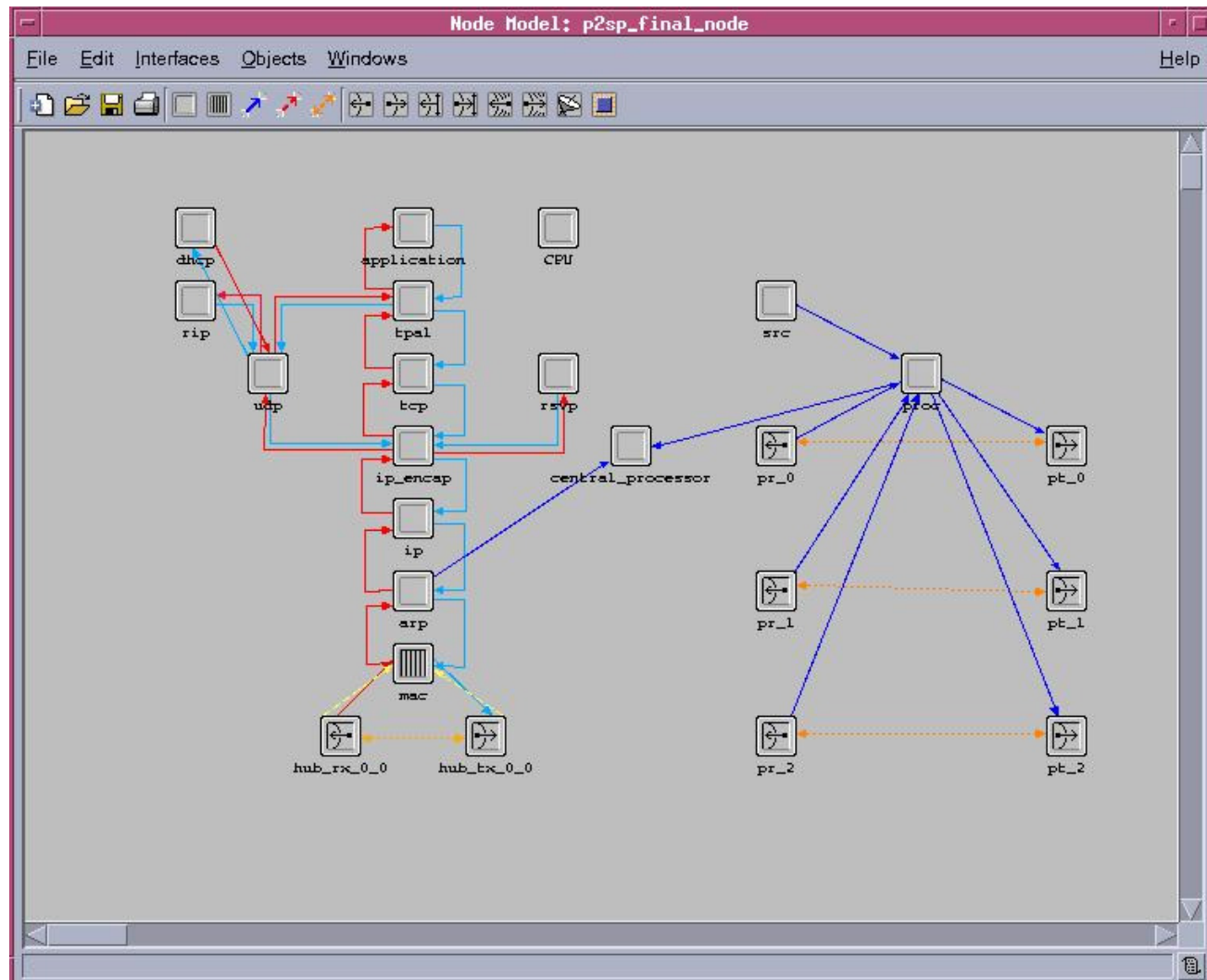
## Gnutella ping/pong routing protocol



# Implementation OPNET

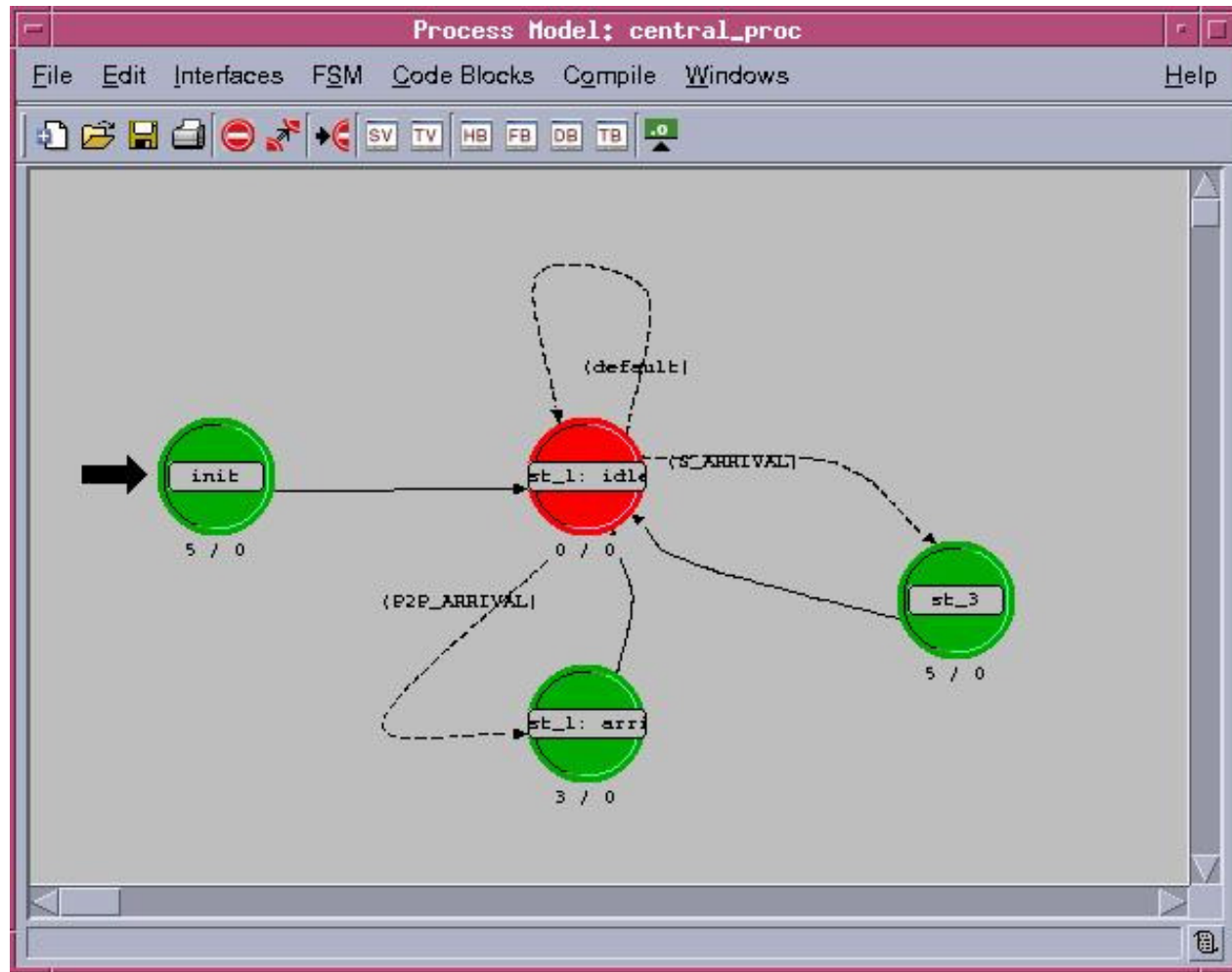


# Node model



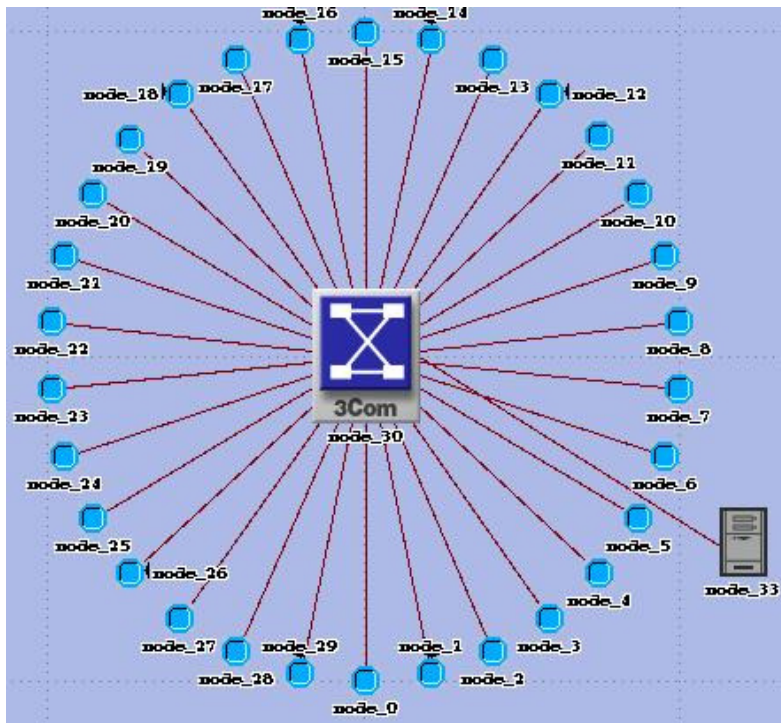


# Process model

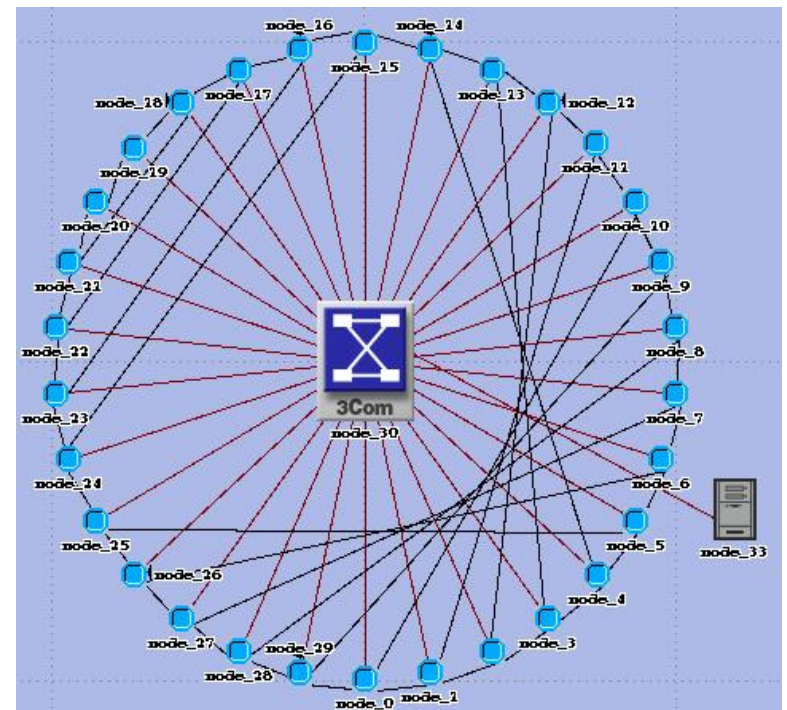


# P2SP Network Configuration

Server based network



P2SP network

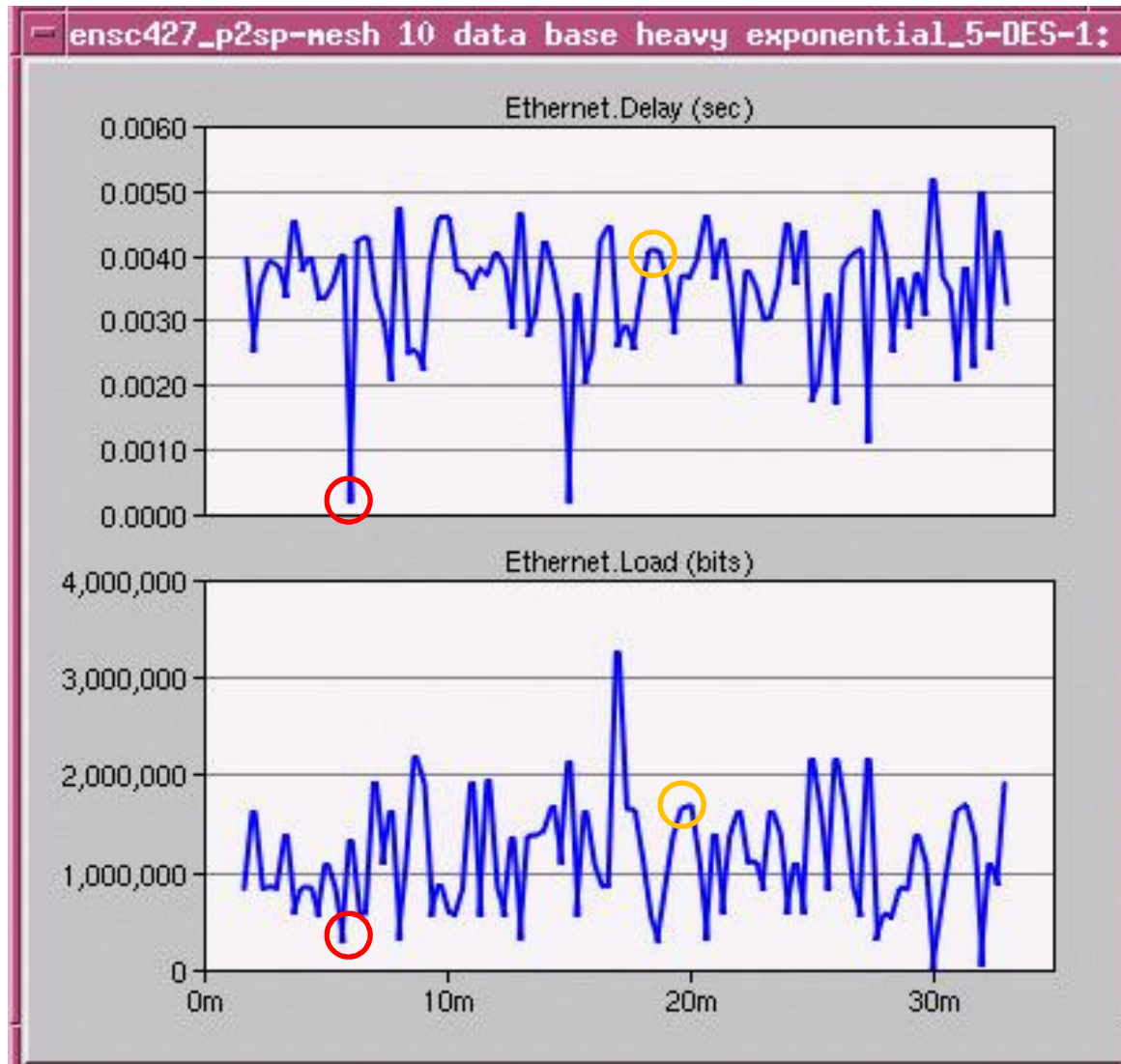


# Simulation Results & Discussion

- Server Load

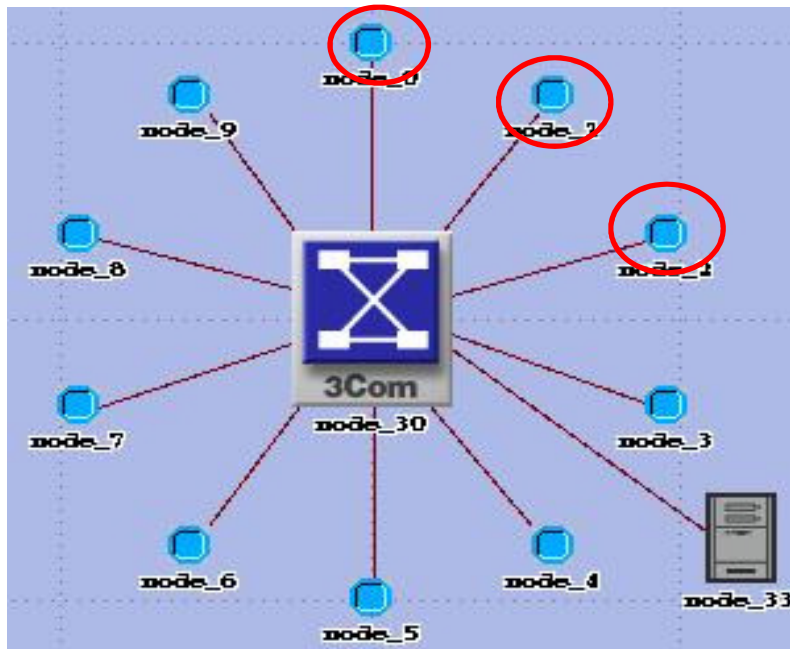


# Ethernet Delay Vs Load

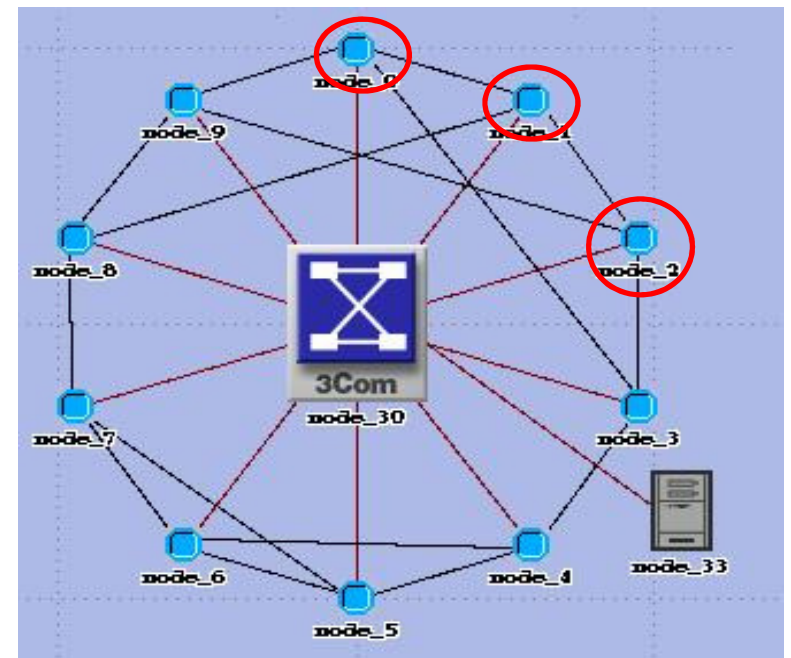


# P2S vs. P2SP

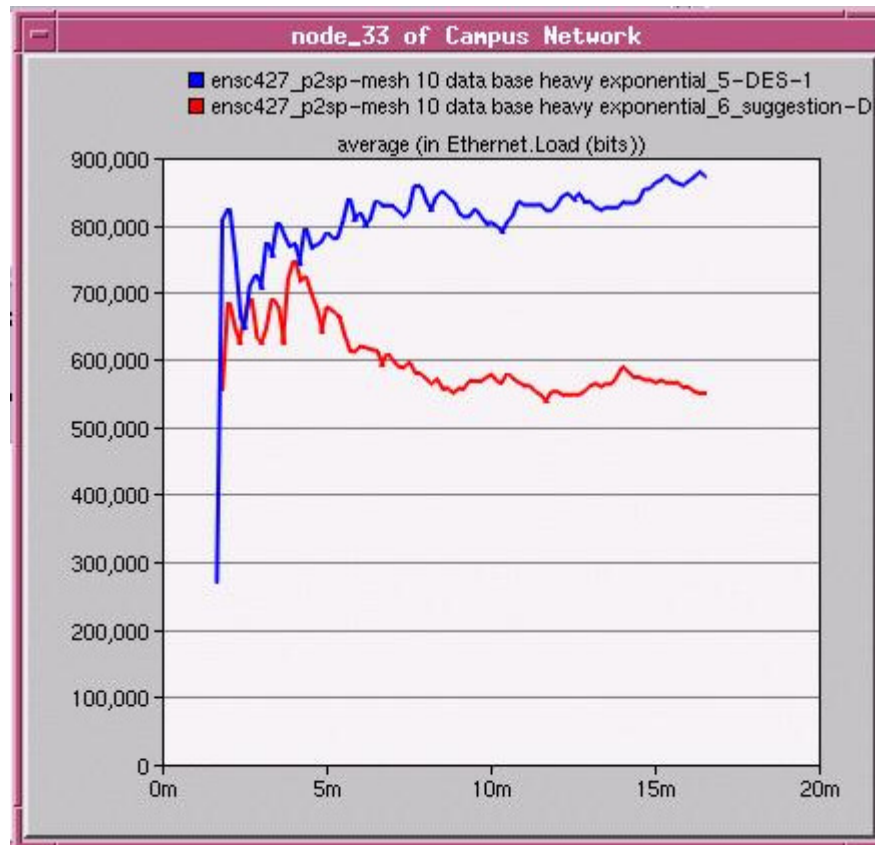
Peer-to-Server



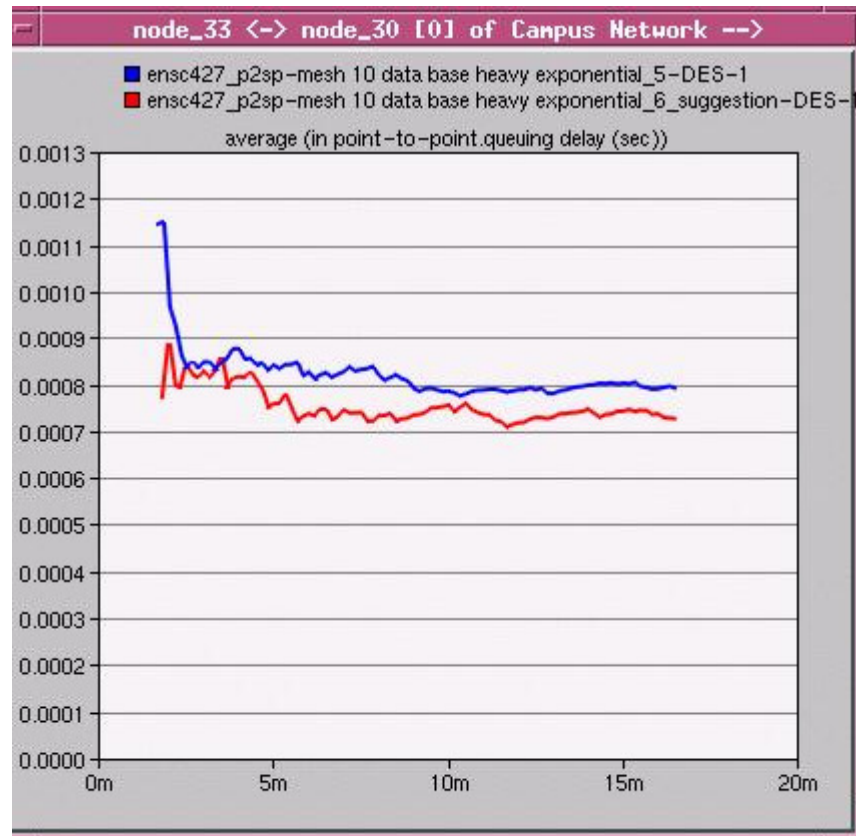
Peer-to-Server-Peer



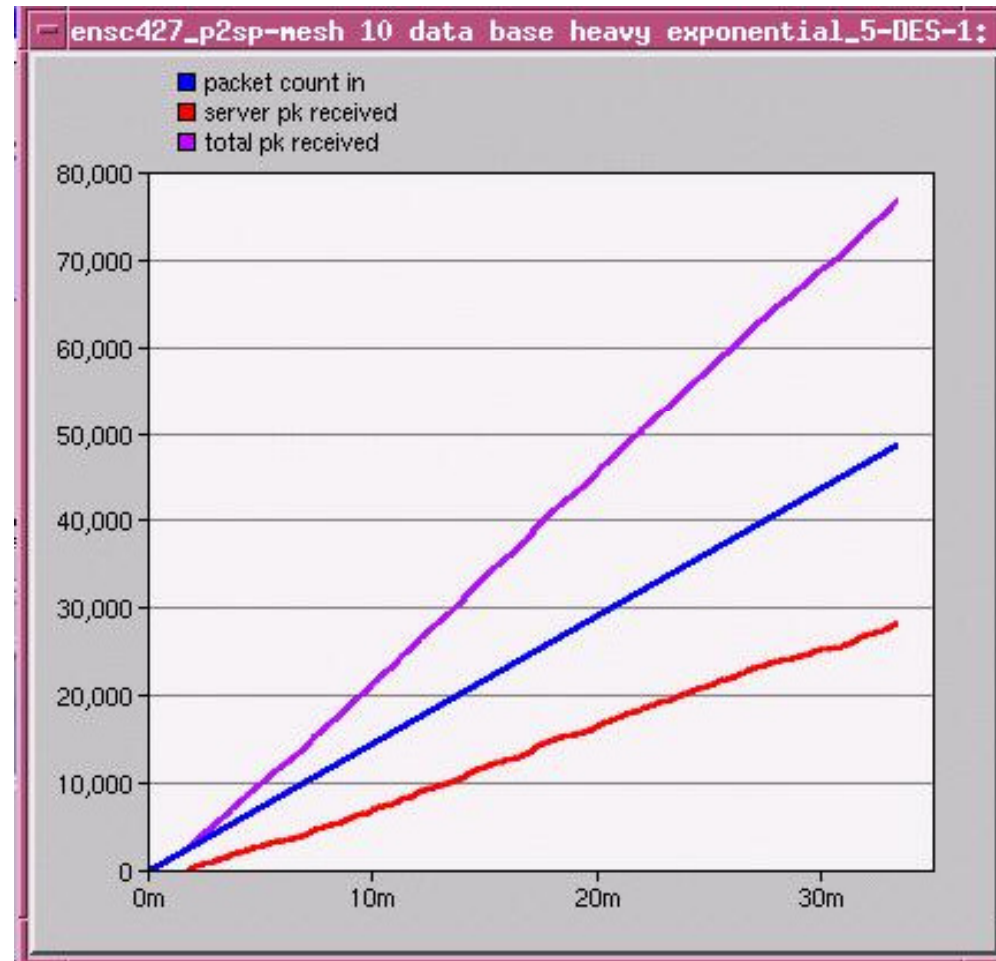
# P2S vs. P2SP Continue



# Queuing Delay

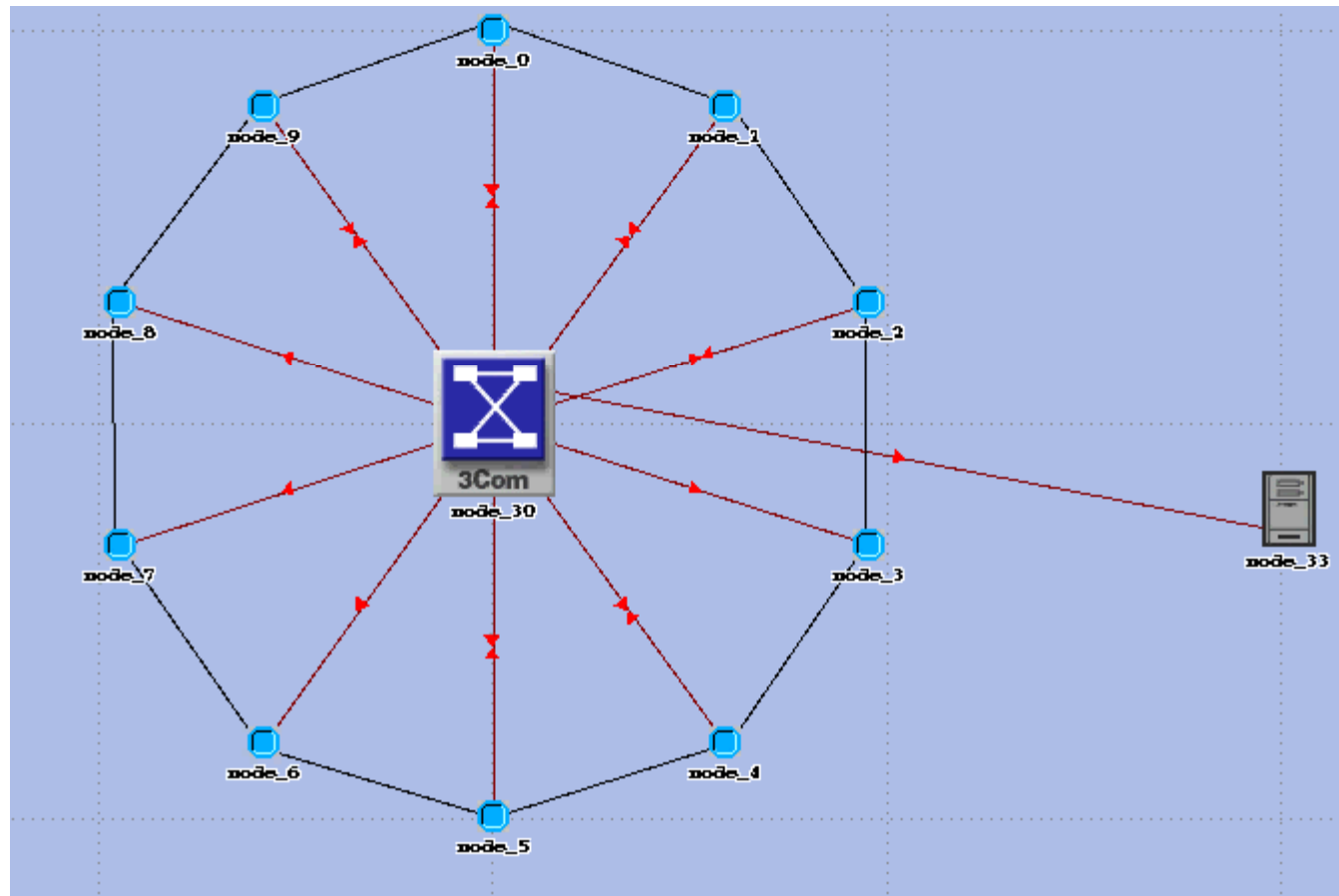


# Performance Evaluation





# OPNET Animation





# Future Improvement

- Add server database in P2SP network model to emulate the real working environment
- Complete the data packet format used in P2SP protocol
- Implement workaround to avoid the load impact on the server

# Reference

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