



ENCS 427: COMMUNICATION NETWORKS FINAL PROJECT PRESENTATION SPRING 2009

WI-FI NETWORK SIMULATION



Ricky Chau (lyc4@sfu.ca)

Wenqi Sun (wsa1@sfu.ca)

Cathy Zhang (cathyz@sfu.ca)

Project Webpage: <http://www.sfu.ca/~wsa1/>

INTRODUCTION

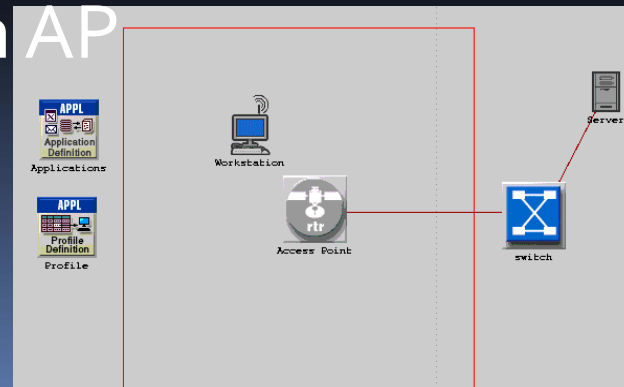
- Wi-Fi (Wireless Fidelity) as a trademark of the Wi-Fi alliance
- Wi-Fi (Wireless Fidelity) is a generic term that refers to the IEEE 802.11 communications standard for Wireless Local Area Networks (WLANs).
- Wi-Fi is referred as the 802.11 communications standard for WLAN (Wireless Local Area Networks).
- Four standards IEEE 802.11b, IEEE 802.11a, IEEE 802.11g and IEEE 802.11n

Description of project

- Analyze AP delay in three different cases
 - 1 AP 1 workstation with multiple applications running
 - 1 AP multiple workstation (File Transfer Heavy)
 - Multiple AP with multiple workstation (File Transfer Heavy)

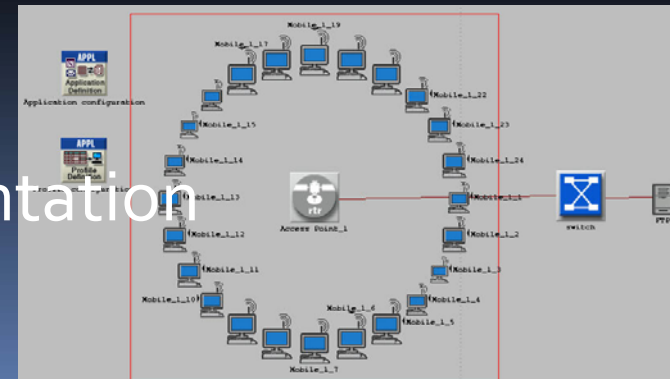
1 AP with 1 Workstation

- 1 workstation connect to 1 AP
- Optimization of throughput while applications add/drop from
- Power Optimization of 1 moving workstation
- Received power increases as the workstation moves closer to AP, and decreases as the workstation moves away from AP



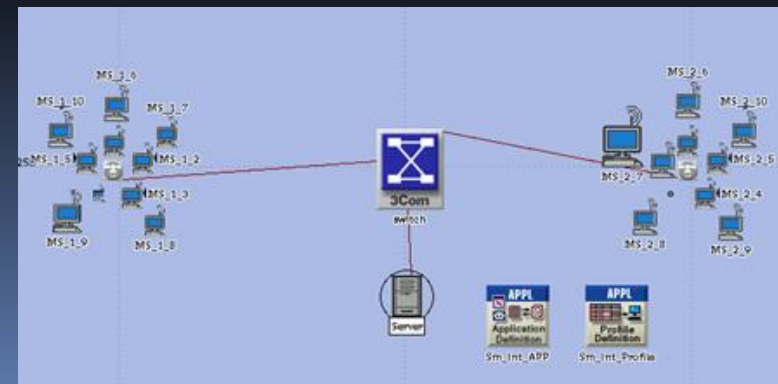
1 AP with Multi-workstations

- 2, 10, 50 workstations with same application AP delay comparison
- 24 workstations joined 1 by 1
- 2 workstations 1 close 1 far compare transmit throughput
- 2 workstations 1 with extreme load affect on other workstation in network
- 1 moving workstation analyze
- Performance Optimization by applying RTS and Fragmentation



2 AP with Multi-Workstation

- 10 workstation on each AP
- More Access Points can reduce the load on each router, hence reduce the delay that a router would create.
- In turn enhances the service quality for each user in the network.





- The End