ENSC 835: COMMUNICATION NETWORKS
CMPT 885: SPECIAL TOPICS:
COMMUNICATION NETWORKS
PROJECT DEMO
Spring 2008

Deployment of Mobile and Fixed Video Conferencing over an Existing IP Infrastructure

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Roadmap

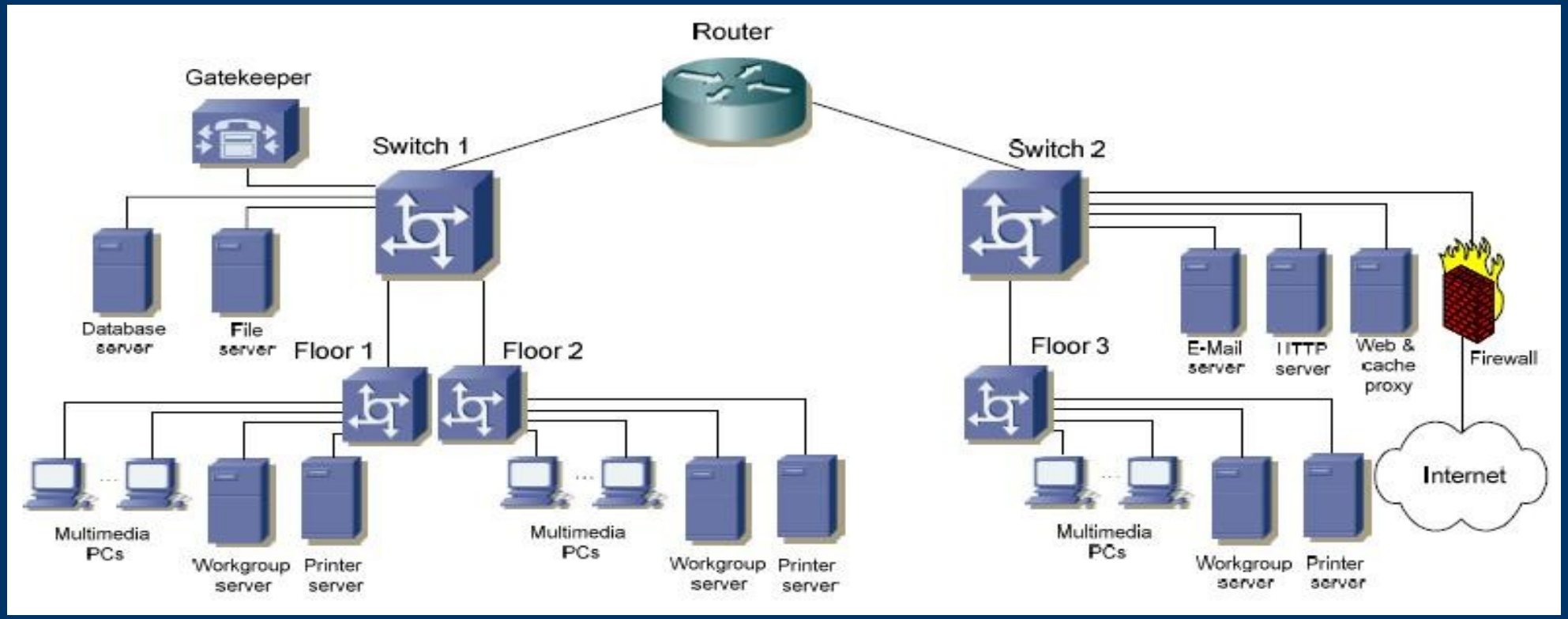
- Introduction
- Motivation and Overview
- Typical Enterprise Office Network
- Applications of the Project
- Scenarios
- Results, Discussions and Conclusions

Motivation and Overview

- Use already existing IP infrastructure
- Minimal deployment cost
- Video conferencing deployment – not yet analysed for WiFi in OPNET
- Commercial interest (simulate before investing time and money into hardware/software setup)
- Research interest (optimization, capacity)

Typical Enterprise Office Network

- [1] K. Salah, "Analytic approach for deploying desktop videoconferencing," *IEE Proceedings Communications*, vol. 153, no. 3, June 2006, pp. 434-444.



Applications of the Project

- Typical scenario: plant/warehouse floor (wireless), and office floor (desktops)
  - Plant maintenance (chemical, power)
    - Personnel with PDAs reporting to office
  - Production environment
    - Warehouse, equipment maintenance, report to office
  - Office with 2 floors
    - Mix of wireless clients and desktops
- Existing standards: 802.11a/b/g, 802.11e, 802.11n
- This project concentrates on the most popular deployed hardware: 802.11b and 802.11g, installed on one floor and wired workstations on the second floor

Scenarios

OPNET Simulations

Scenario	Title	# Calls	Scenario Name
1	802.11b	28	2_wlan_80211b_bg_2_flr
2	802.11g	98	3_wlan_80211g_bg_2_flr1

IT Guru Simulations

Scenario	Title		Scenario Name
3	802.11b	9	7_H323_Cloud_8usr1

- Ex: # Video conferencing calls supported:
  - Traffic Rx/Tx Mismatch at 1m 38s, good at 1m 36s.
  - Started with 2 video packets at 70s
  - Added 2 new calls every 2 seconds
  - Hence:
  - 2calls + 2calls*((1m * 60s/m + 36s – 70s)/2s) = 28 video calls