

ELEN627 Lecture 1

Multimedia Systems and Networks

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Overview of the course

- Support for Multimedia applications
 - Networking support
 - Systems - processor/disk/memory support
 - Applications support - compression

Course overview

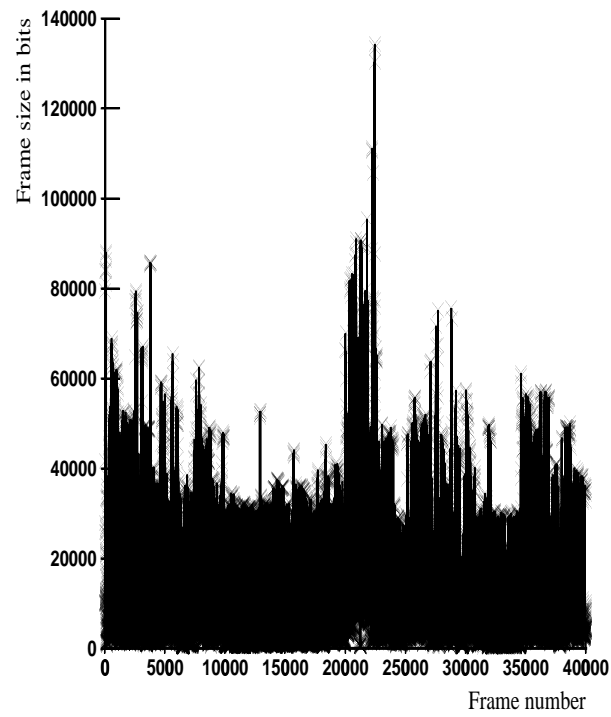
- Brief overview of applications
- Extensive look at
 - Networking
 - Systems
- Some exposure to
 - Compression issues
 - Other Internet/web related problems

What's special about multimedia

- Continuous requirements
- Service needs to be timely
 - Guarantees required
- Guarantees over long periods of time
- Current systems provide best effort service

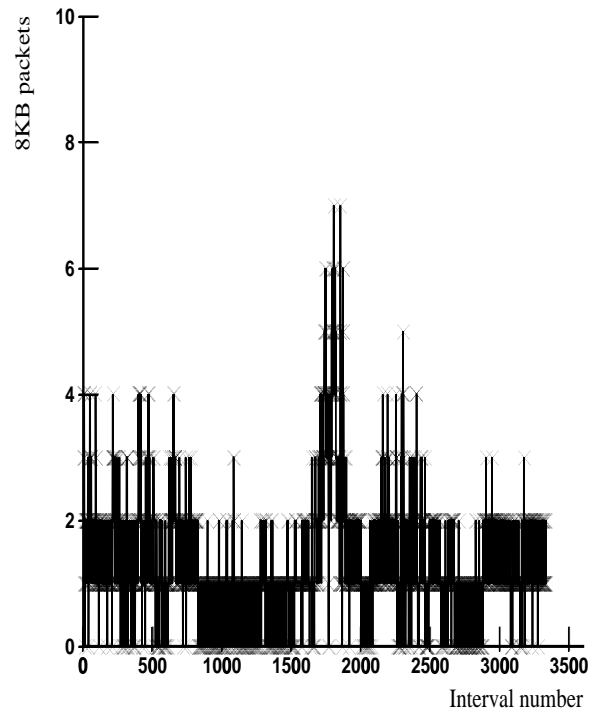
Example applications

- Video servers
 - Video-on-demand
 - Near-Video-on-demand
- Interactive games
- Training/travel videos



Display trace

Video Stream Data



Packetized MPEG stream over 0.5 second intervals

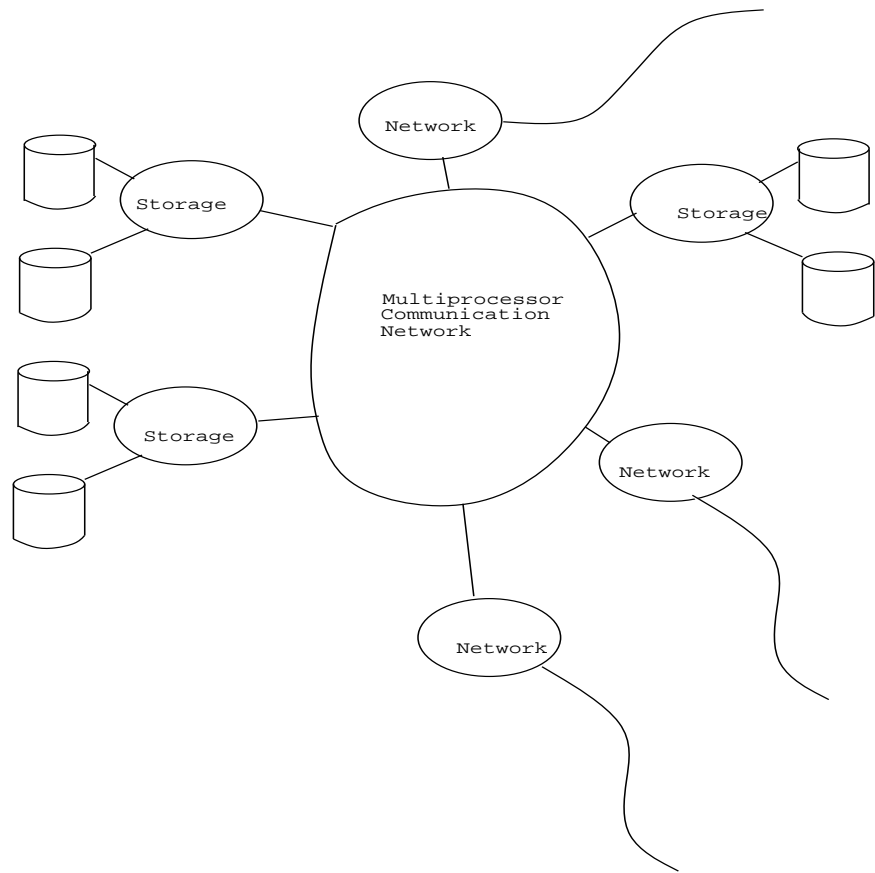
Packetized Video Data

Application requirements

- Periodic service
 - CBR
 - VBR
- Interactive/quick response service
- Regular file service

System level Issues

- Providing Integrated service
- Scheduling and resource allocation
- Adaptability to variations in demand



Typical System

Service components

- Data retrieval from disk
- Transfer of data across system area network
- Processor scheduling for timely response
- Network delivery to user