

SESSION : Application Servers and Platforms for  
Multimedia and Collaboration

- Platforms for Multimedia
- Platforms for Groupware
- Distributed operating system
- Application Servers
- Next Generation Middleware

Amjad Umar

---

---

---

---

---

---

---

Multimedia Over the Internet

- Internet, especially web designed for documents
- Multimedia has different requirements:
  - Realtime
  - QoS
  - Synchronization voice with pictures
  - Others
- Initial attempts to send multimedia over http
- At present, http is used for initial contact (browser locates multimedia server).
- The actual multimedia delivered over different protocols

Copyright (A. Umar) 2002

---

---

---

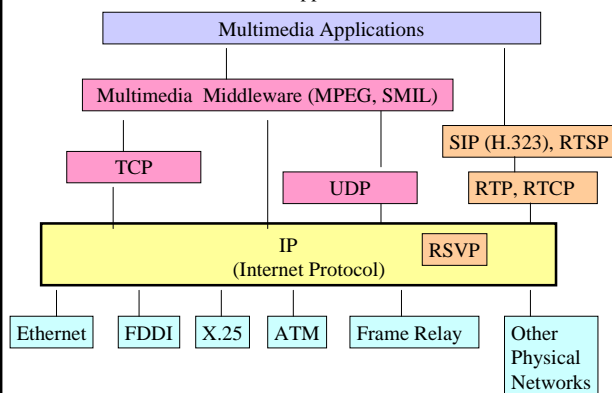
---

---

---

---

Multimedia Applications



Copyright (A. Umar) 2002

---

---

---

---

---

---

---

**RSVP (ReSerVation Protocol)** is the protocol that deals with lower layers that have direct control over network resources to reserve resources for real-time applications at the routers on the path. It does not deliver the data.

**RTP (Real Time Protocol)** is the transport protocol for real-time data. It provides timestamp, sequence number and other means to handle the timing issues in real-time data transport. It relies on RVSP for resource reservation to provide quality of service.

**RTCP (Real Time Control Protocol)** is the control part of RTP that helps with quality of service and membership management (feedback) .

**RTSP (real Time Streaming Protocol)** is a control protocol that initiates and directs delivery of streaming multimedia data from media servers. It is the "Internet VCR remote control protocol".

**SIP (Session Initiation Protocol)** - For VOIP, competes with H.323

**SAP (Session Announcement Protocol):** for Internet Radio

SMIL, MPEG: for presentation

Copyright (A. Umar) 2002

---

---

---

---

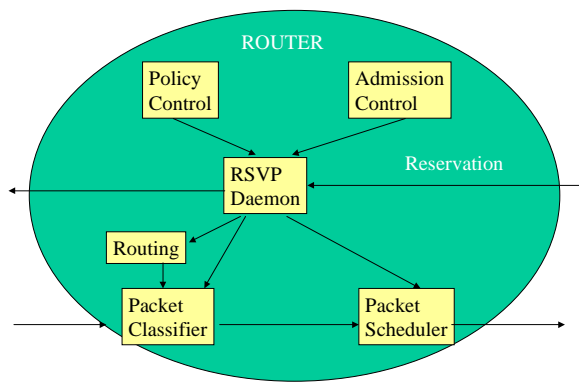
---

---

---

---

## RSVP



Copyright (A. Umar) 2002

---

---

---

---

---

---

---

---

## Middleware for Multimedia

### Moving Picture Experts Group (MPEG).

- MPEG is a working group of ISO
- produced a family of standards used for coding audio-visual information (e.g., movies, video, music) in a digital compressed format.
- MPEG-1 to MPEG-21
- On the Web, MPEG Video files have the extension .mpg and MPEG Audio files generally have the extension .mp2 or .mp3.
- To play MPEG files, you may need to install the MPEG Video Player and an MPEG Audio Player on your system.
- See website [www.mpeg.org](http://www.mpeg.org) for info

### Synchronized Multimedia Integration Language (SMIL) .

- XML type language for choreographing multimedia presentations where audio, video, text and graphics are combined in real-time.
- It enables authors to specify what should be presented when

Copyright (A. Umar) 2002

---

---

---

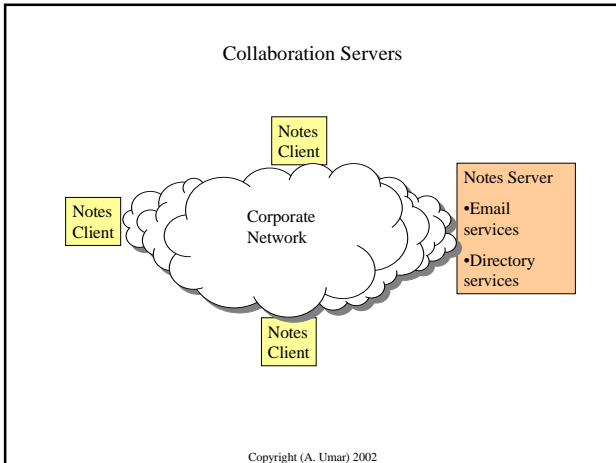
---

---

---

---

---



---

---

---

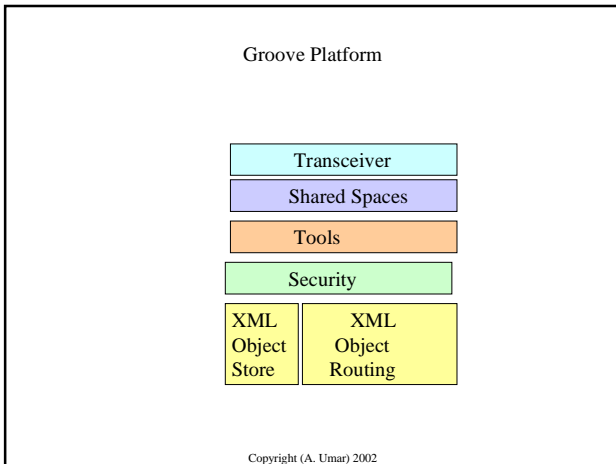
---

---

---

---

---



---

---

---

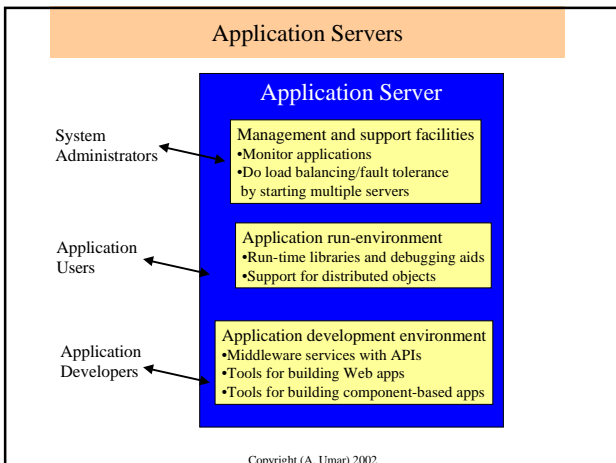
---

---

---

---

---



---

---

---

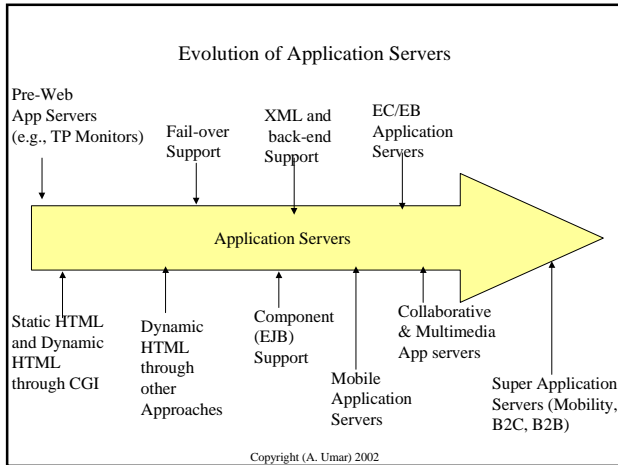
---

---

---

---

---




---

---

---

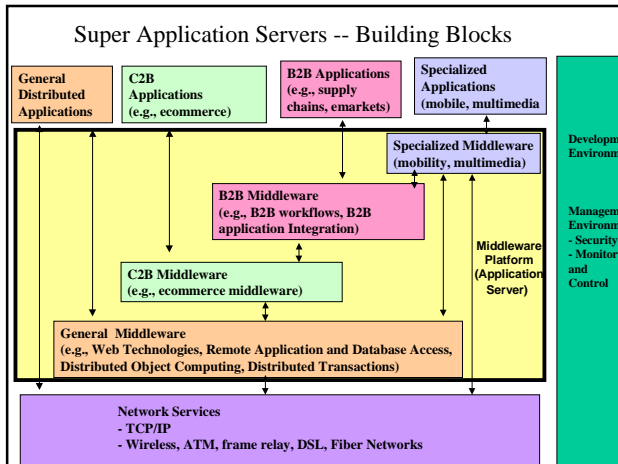
---

---

---

---

---




---

---

---

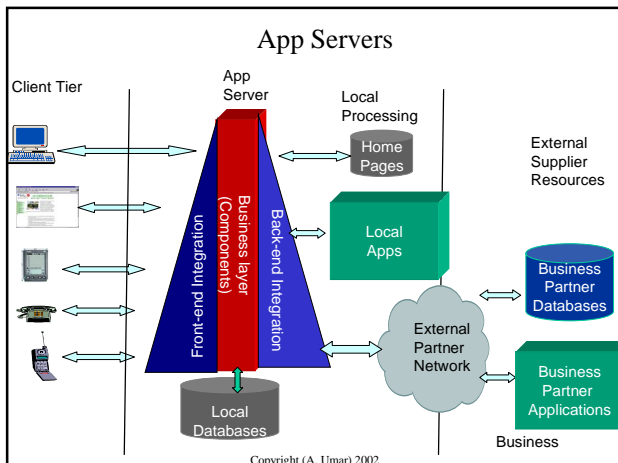
---

---

---

---

---




---

---

---

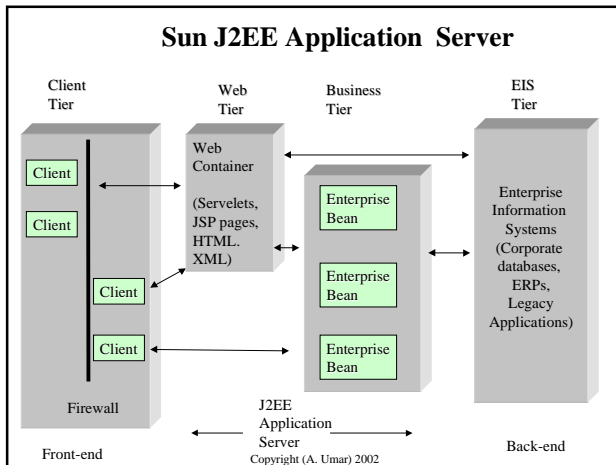
---

---

---

---

---




---

---

---

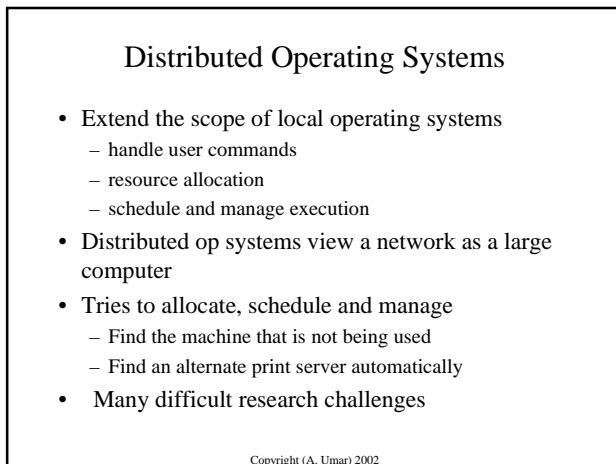
---

---

---

---

---




---

---

---

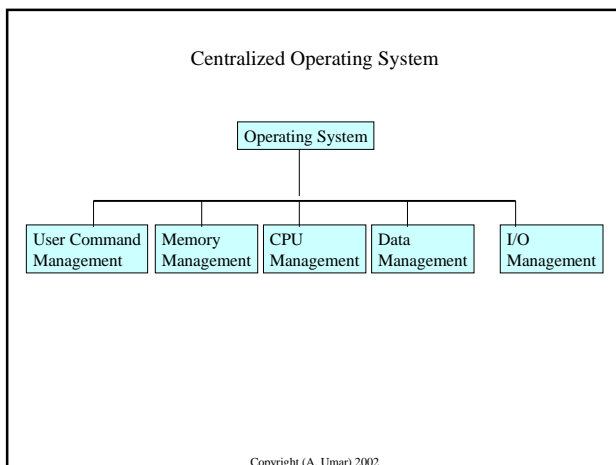
---

---

---

---

---




---

---

---

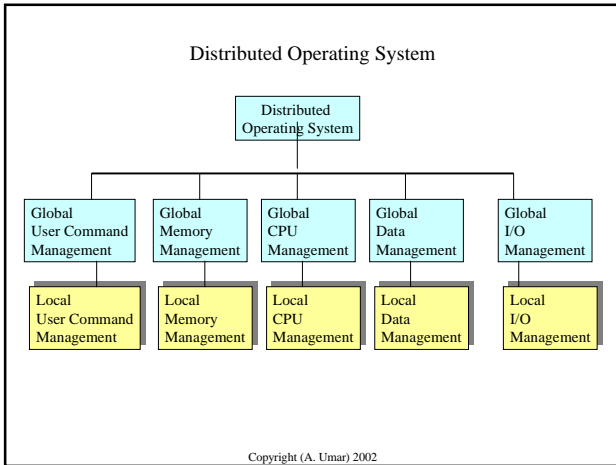
---

---

---

---

---




---

---

---

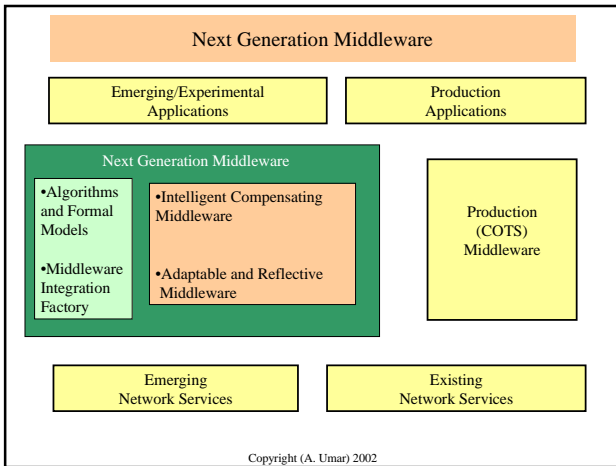
---

---

---

---

---




---

---

---

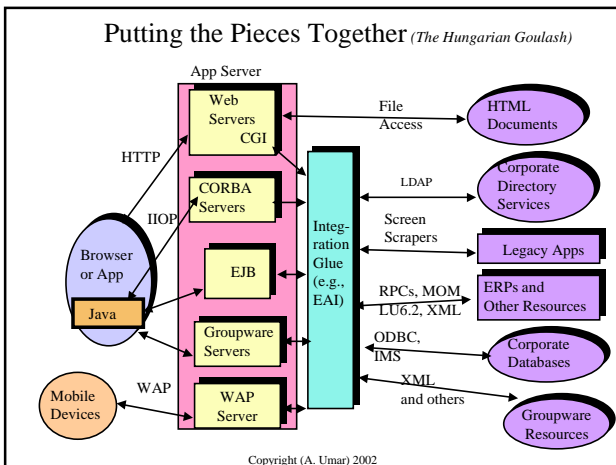
---

---

---

---

---




---

---

---

---

---

---

---

---