CLIENT SERVER ARCHITECTURE

- Distributed Processing Environment
- Distributed Database Environment
- Comprehensive Communications Networks
- Open Systems for information sharing
- Friendly User Interfaces
- Standardized communications protocols
- Shared responsibility
CLIENT SERVER ARCHITECTURE

- Client Processes request services
- Server Processes provide services
- Client and server processes execute on different systems
- Clients and servers can negotiate the terms and conditions of service
Three approaches to organizational information sharing:

- Mainframe Centric:
- PC Server-Centric:
- Client Server:
Mainframe Centric:

- Use terminal emulators or hardwired terminals.
- Non GUI proprietary interface.
- Asynchronous (all cursor positions and key positions are transmitted to and from the mainframe).
- Tight administrative control.
CLIENT SERVER COMPUTING

PC-Server-Centric:

- PCs share common applications.
- PCs share data (files).
- PCs share resources (printer, etc.).
- Each application presents its own user interface.
- Commands and queries processed by PC.
- Downloading of files (high volume network traffic).
CLIENT SERVE COMPUTING

Client Server:

- Desktop intelligence.
- Client responsible for User Interface.
- Better sharing of server resources.
- Optimal network utilization.
- Separation of communication and operating system processes from the user (easy maintenance).
CLIENT SERVER COMPUTING

Client:

- Presents User Interface
  - GUI (Windows: Presentation manager; X-Windows)
- Forms Queries or Commands
  - SQL
  - Integrity check
  - Security
- Communicates with Server
  - IPC hidden from user
- Analysis
  - Data (information) received from server
    (Processing normally done by the server)
CLIENT SERVER COMPUTING

Server:

- Provides Service
  - Data retrieval
  - Printing
  - Remote communication
  - Intensive computation

- Responds to Queries or Commands
  - Hides the architecture from the client or the user
CLIENT SERVER COMPUTING

Technology of Client Server Applications:

- LAN
- Servers
- WAN (mainframe connectivity)
- GUI
- Connectivity Support
KEY ISSUES

For Clients:

- Workstation operating system
- Hardware constraints
- Connectivity constraints
- Object-oriented design
- Graphical user interface
- Division of responsibility (between Client and Server)
KEY ISSUES

For Server:

- Scalability (scope, growth)
- Server interface (SQL; X-windows)
- Gateway to mainframe
- Disk space
- Access control and security
- Backup, recover and logging
- Fault tolerance
- Uninterrupted power supply
- Performance
- System management
- Internetworking