

Assignment B4

31332

TITLE:-

To understand UDP socket.

PROBLEM STATEMENT:-

Write a program using UDP sockets for wired network to implement

a) Peer to Peer chat

b) Multituser chat

Demonstrate the packets captured traces using Wireshark packet analyser tool for peer to peer mode.

THEORY:-

Client/Server Communication

Client:

A computer running a program that makes a request for services is called client machine.

Server:

A computer running program that offers requested services from one or more clients is called server machine.

The media for communication between the two can be wired or wireless network.

The client server involve networking services provided by the transport layer, which is a part of the internet software stack, often called as TCP/IP (Transport Control Protocol / Internet Protocol)

The transport layer comprises of 2 types of protocol

1. TCP

2. UDP.

- TCP is a connection oriented protocol that provides a reliable flow of data
- UDP is a connectionless protocol that provides independent packets of data, called datagrams, from one computer to another with no guarantee about arrival & sequencing.
- They use ports to map a data to a particular process running in computer.
- Port is represented by positive integer value.

* Sockets and Socket Based Communication.

They provide an interface for programming networks at transport layer.

Sockets based communication is independent of a programming language used for implementing it.

That means socket program written in java language can communicate with client program written in any other language eg c/c++

Server listens to the socket for a client to make a connection request.

Server accepts the connection. Upon acceptance, the server gets a new socket bound to different port, so that it can continue to listen to the original socket for connection request while serving the connected client.

UDP Socket Programming.

- Datagram packets are used to implement a connectionless packet delivery service supported by UDP protocol.
- Each message is transferred from source to destination based on info contained.
- That means, each packet needs to have destination address & each packet might be routed differently.

Format of Datagram :-

|Msg| length | Host | serverPort |

Java supports datagram communication with following classes

- Datagram Packet
- Datagram Socket

The packet object is created as.

Datagram Socket supports various methods that can be used for transmitting or receiving data a datagram over the network.

CONCLUSION

Thus we have studied UDP & TCP sockets using peer to peer & multiuser chat.