Network socket programming

Network communication require creation of a communication endpoint called a socket. Socket will have a port number to be able to receive and send packets to the remote side. Two main types of socket are stream socket (TCP) or datagram socket (UDP). Socket is a interprocess communication endpoint used for full duplex network communiction.

Objective: To create a UDP based Ipv6 server and client program for data logging and multicast status communication. Write the program in modular fashion to be able to operate also with Ipv4 addressing. Ipv4 and Ipv6 dual stack operation are required on server side.

Program structure:

Common Data structure used

      sockaddr
      sockaddr_storage
      sockaddr_in6
      in6_addr

Server program: It will follow the standard UDP server program structure

The program will take command line parameter of address and port number. The sequence of network library calls will be :

      getaddrinfo
      socket
      bind
      setsockopt

      [recvfrom
      sendto]

      close

Client program: It will follow standard UDP client program structure.

The program will take command line parameter of server address and port number, multicast address and port number. Client will join multicast group to receive group commincation and status from server. The sequence of network library calls will be:

getaddrinfo
socket
bind
[setsockopt]

[sendto
recvfrom]

close