Introduction to Socket Programing

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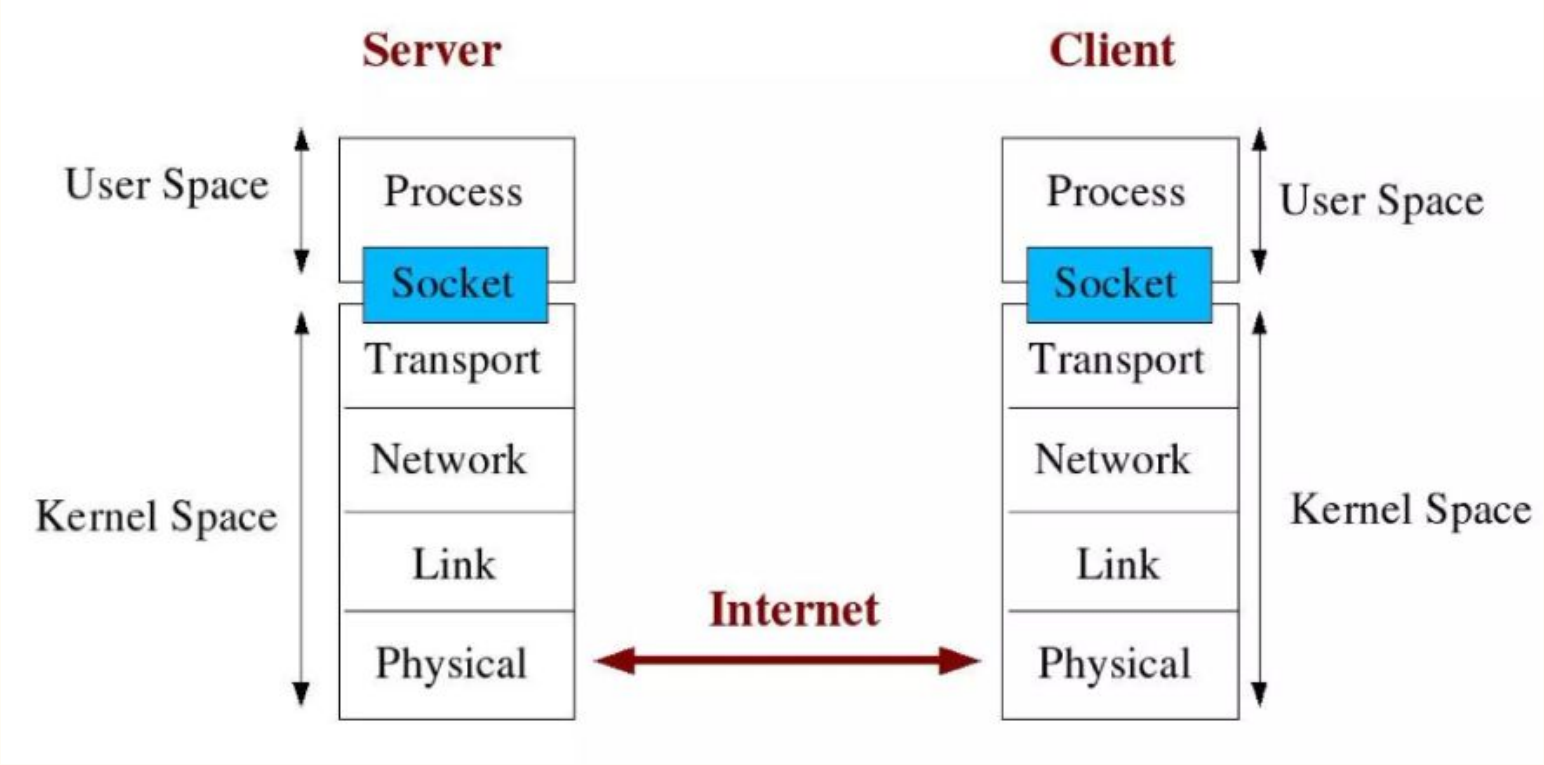
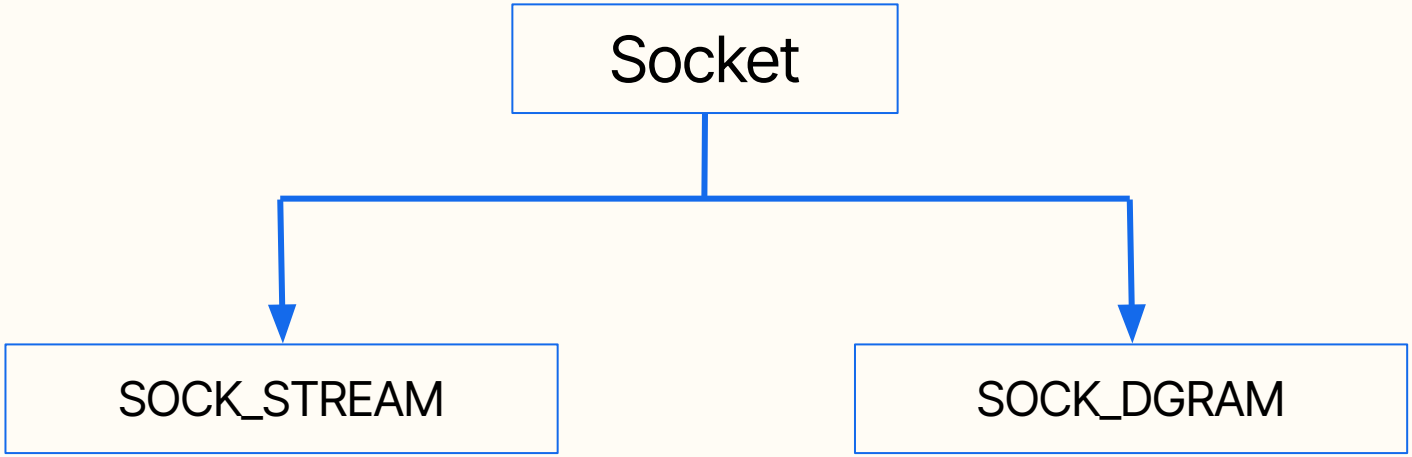
What is Socket?

- An interface between a process and transport layer.
- The interface enable the application process to send/receive messages to/form another application process.

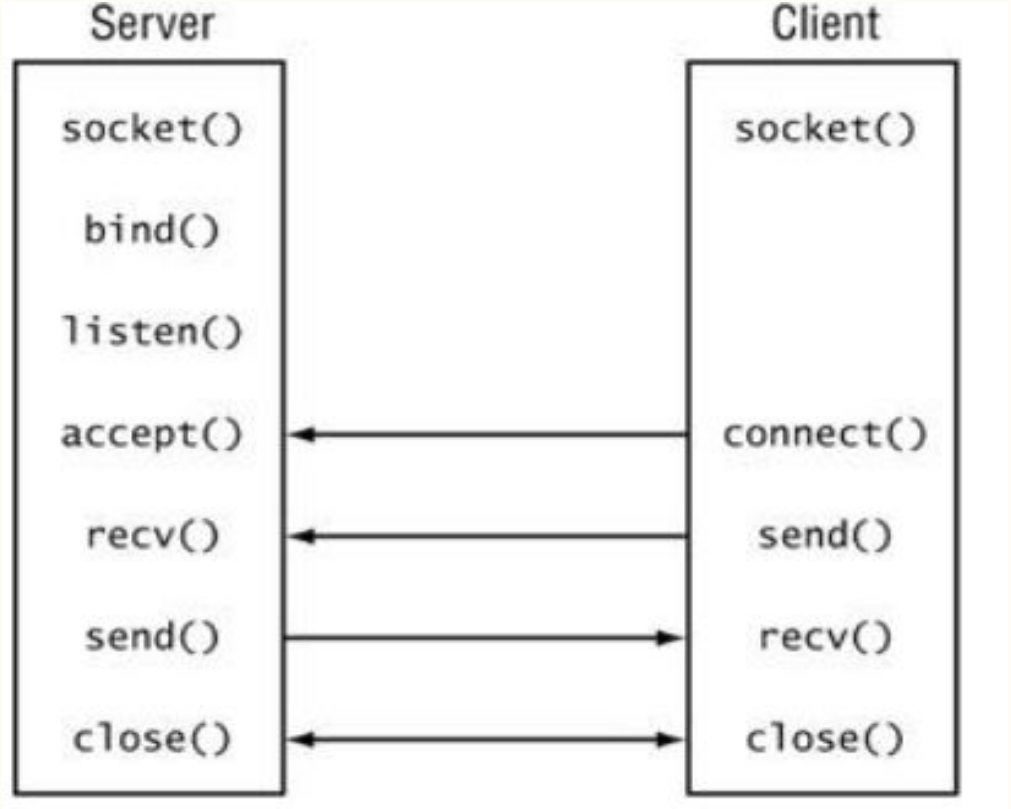
Socket Description



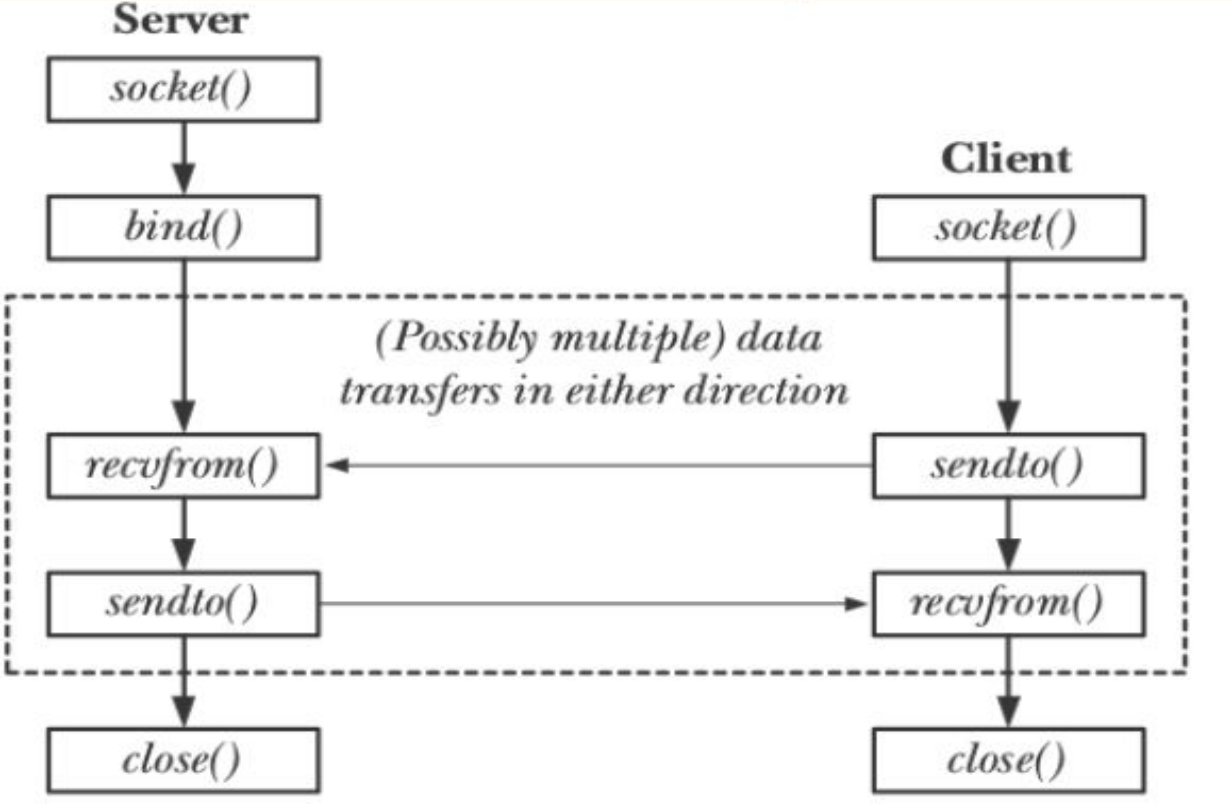
Types of Socket



TCP/IP Socket Framework



UDP Socket Framework



Utility Function

int s= socket(domain, type, protocol)

- domain: Communication domain, set **AF_INET** for IPv4
- type: type of socket, set **SOCK_DGRAM** for UDP
- protocol: set to **0** to use specified domain and type
- Return -1 on failure and socket identifier on success

Utility Function

```
int status= bind(sockid, (struct sockaddr*)&addrport, size);
```

- sockid: Generated on socket call
- addrport: address structure contains IP address and port of machine
- size: Size of sockaddr structure

Structure of sockaddr

1. servaddr.sin_family = AF_INET; //IPv4 protocol
2. servaddr.sin_port = htons(PORT); //to convert port number

   from network byte order to host byte order
3. servaddr.sin_addr.s_addr = INADDR_ANY; //to use local IP

Data Transfer Function

1. sendto(sockfd, message, MAXLINE, 0, (struct sockaddr*)NULL, sizeof(servaddr));
2. recvfrom(sockfd, buffer, sizeof(buffer), 0, (struct sockaddr*)NULL, NULL);