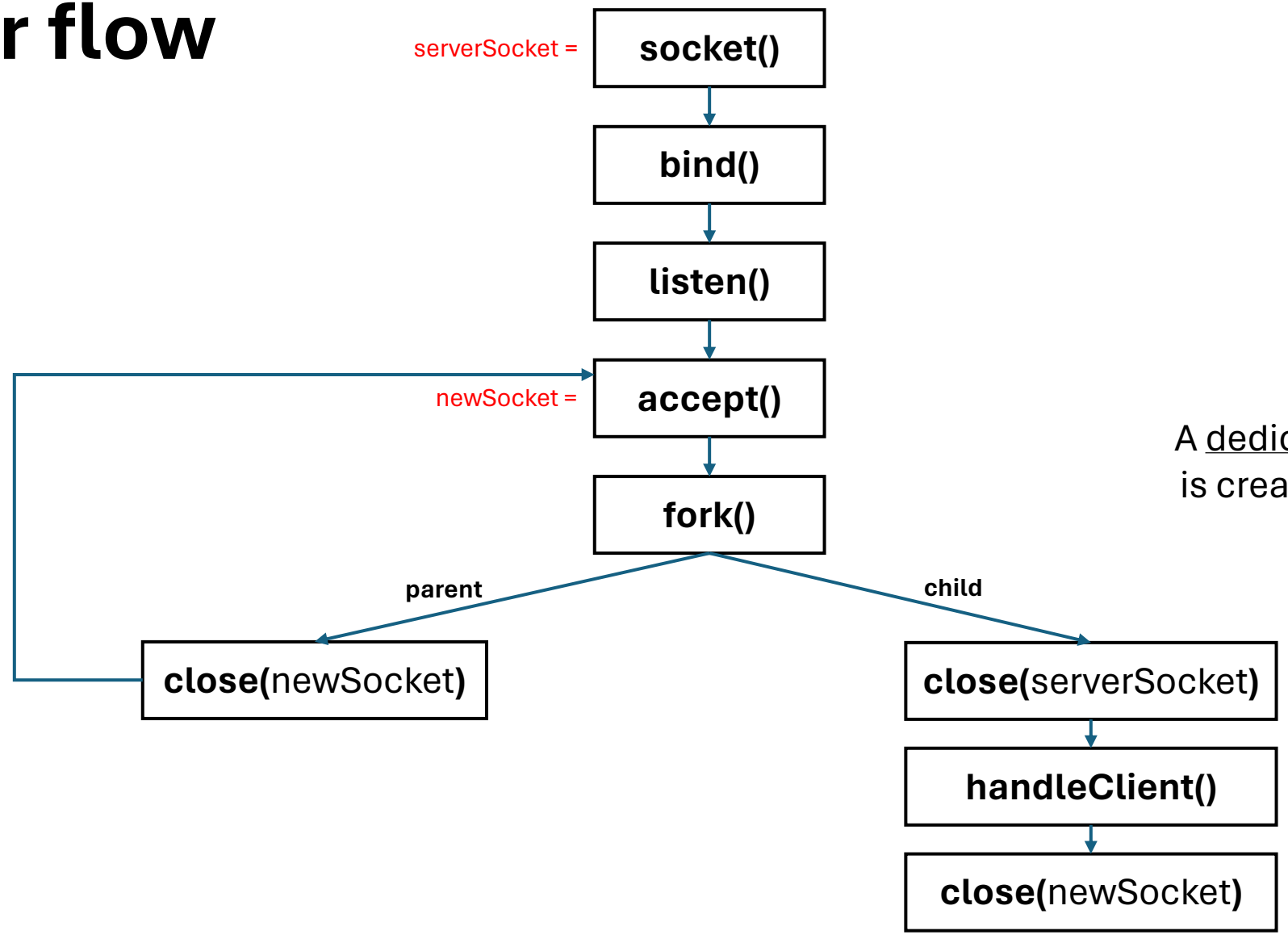
Project: Log Server

Computer Systems & Programming

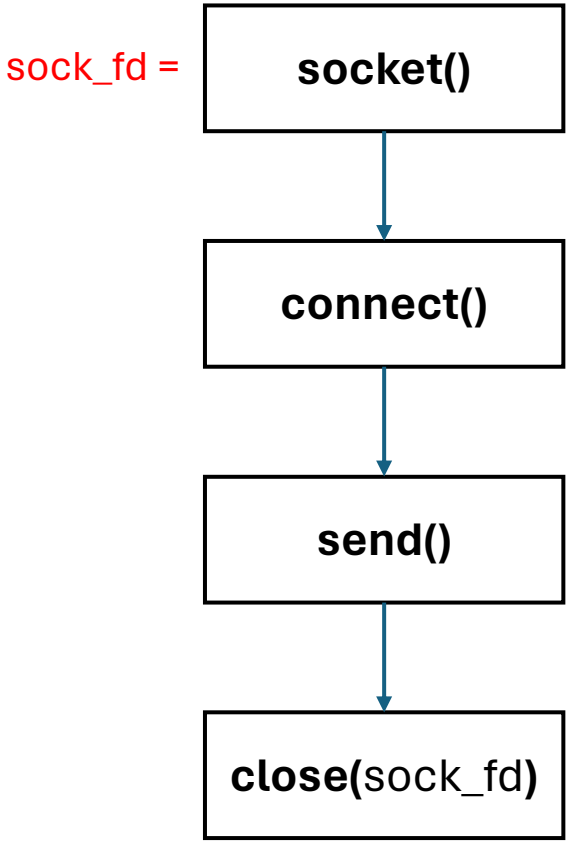
Academic Year 2023/2024

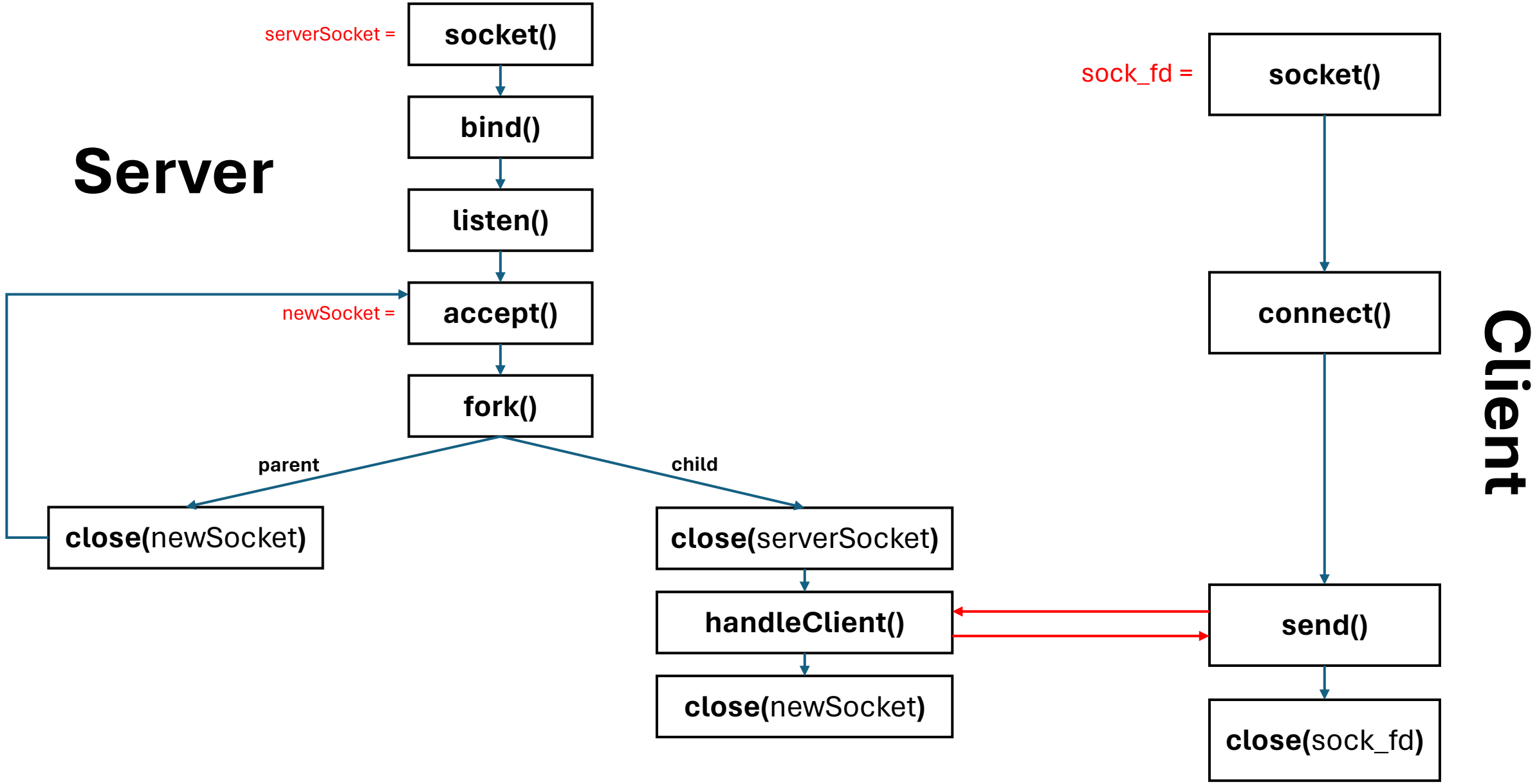
Server flow



A dedicated child process is created for each client!

Client flow

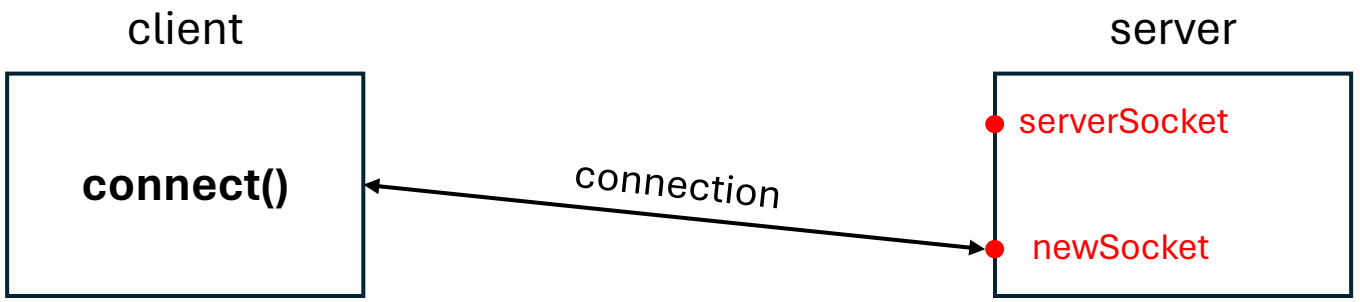



Server
serverSocket =
socket()
bind()
listen()
newSocket =
accept()
fork()
parent
child
close(newSocket)
close(serverSocket)
handleClient()
close(newSocket)
sock_fd =
socket()
connect()
send()
close(sock_fd)
Client

Status of client/server before call to accept() returns

The server is blocked in the call to accept() and the connection request arrives from the client.

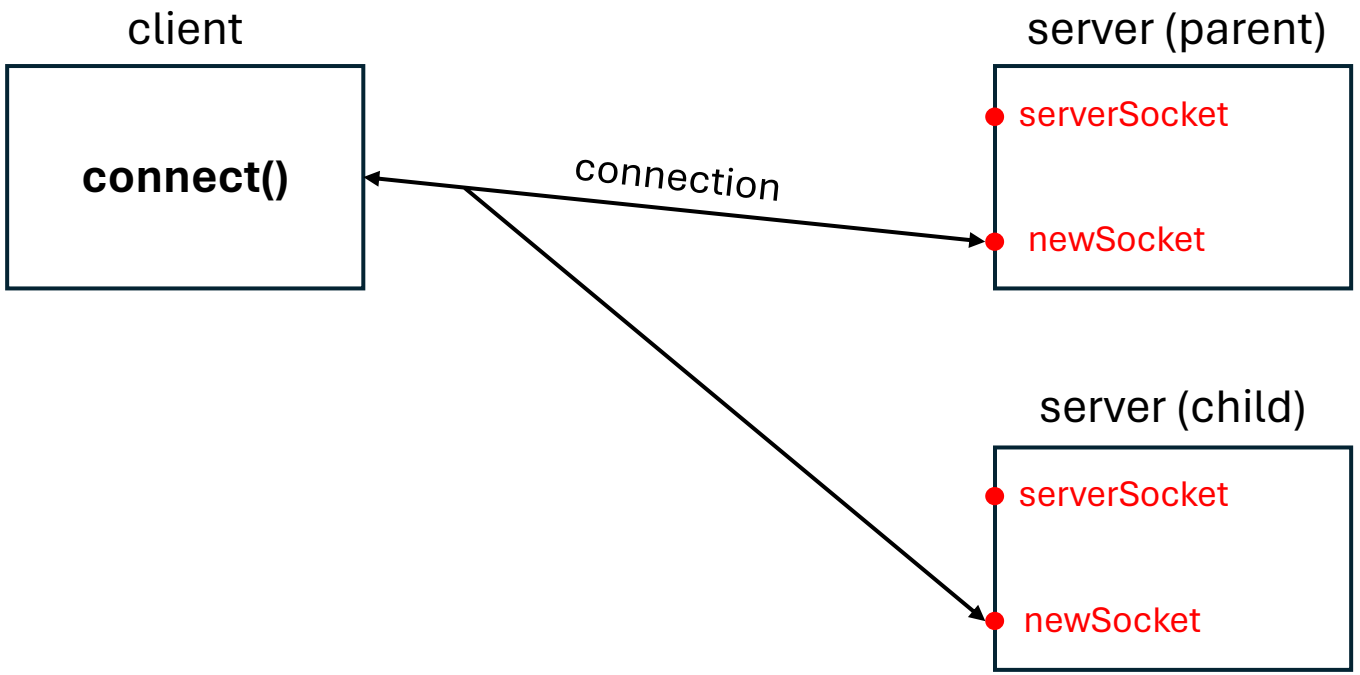
Status of client/server after return from accept()



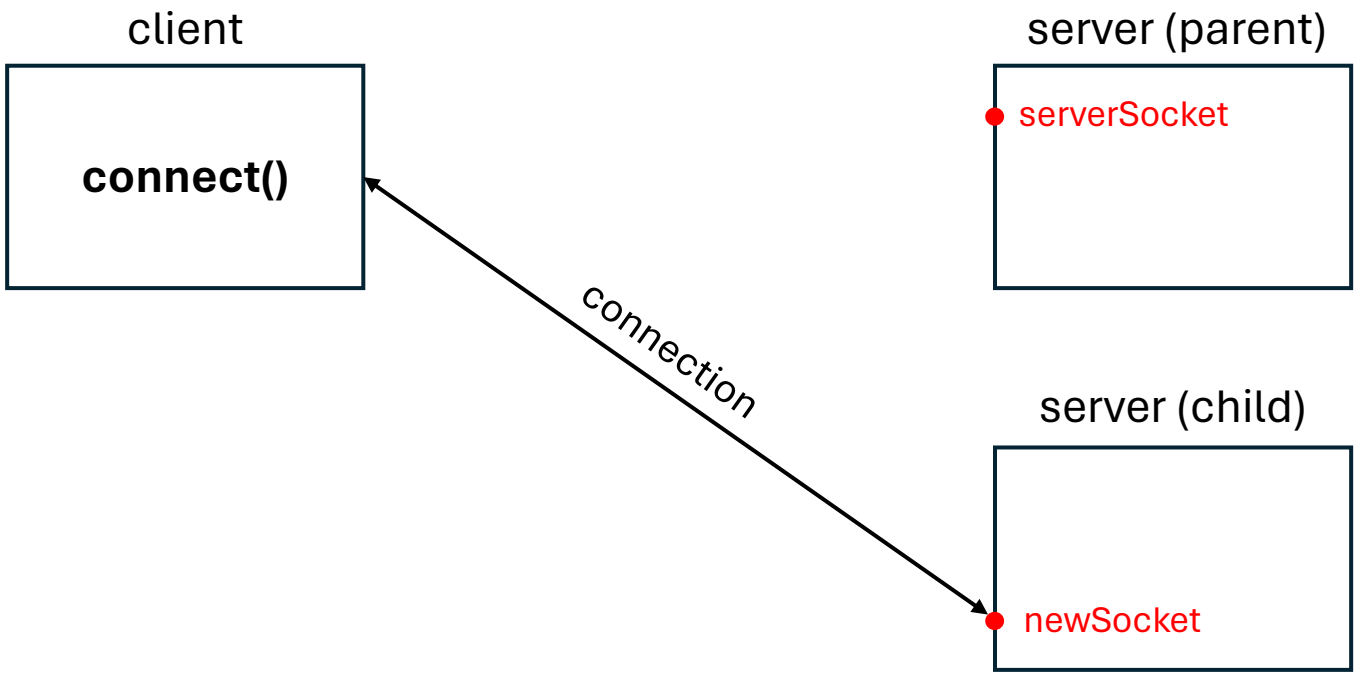
The connection is accepted and a new socket (newSocket) is created.

After **fork()** returns, both descriptors (serverSocket and newSocket) are shared (i.e., duplicated) between the parent and the child, so the file table entries associated with both sockets now have a reference count of 2. The reference count is the number of descriptors that are currently open that refer to a file or socket.

Status of client/server after fork() returns



Status of client/server after parent and child close appropriate sockets



The child is handling the connection with the client and the parent can call accept() again on the listening socket (serverSocket), to handle the next client connection.