

Lab 12

(a) What are the advantages and disadvantages of the client/server and peer to peer multiplayer game architectures?

Advantages of Client to Server

- + Since with the client to server architecture, the server will be centralized to one area. The security will be of the network will be a lot easier to handle and control.
- + Another positive would-be management. Since all files are stored in the central server, which would make it a lot easier to navigate and located important files.

Disadvantages of Client to Server

- The cost would be rather big for the initial set up of the client and server architecture and the prolonged maintenance of this architecture, as it will need to be monitored non-stop.
- Another Negative would be traffic congestion, where there to many requests that the server can handle, which would result in slow down or in worst cases crashes.

Advantages of Peer to Peer

+ One big aspect would be the cost. Since there is no cost for an initial setup of a computer to be the main server, it reduces the cost of the initial setup and the maintenance of that main server.

+ Another advantage would be the performance. This is because the Peer-to-Peer network performs more efficiently when more networks/clients are connected. This is because in this architecture a network is also a server that contributes to the network.

Disadvantages of Peer to Peer

- One would be security. This is a result of the fact that security for individual files is far less because there is no security apart from assigning permissions to clients.
- Another Negative would be virus attacks, as peer to peer networks are more prone to malware and virus attacks because each computer is independent of each other.

(b) In the peer-to-peer network architecture with authoritative host, how do the peers communicate with each other?

Host 1 would be the authoritative host. Then Host 2 connects to Host 1. Then Host 3 would again connect to Host 1. Host 1 will know all the required information from Host 2 and 3. And therefore will be able to send information about Host 2 to Host 3 and vice versa. This way, the hosts will be able to connect to each other.

(c) In the context of "port restricted" NAT devices, what does the hole-punching technique do?

The hole punching technique is a technique where it allows a packet to be sent out via an outside system by punching a hole in the security of the network.