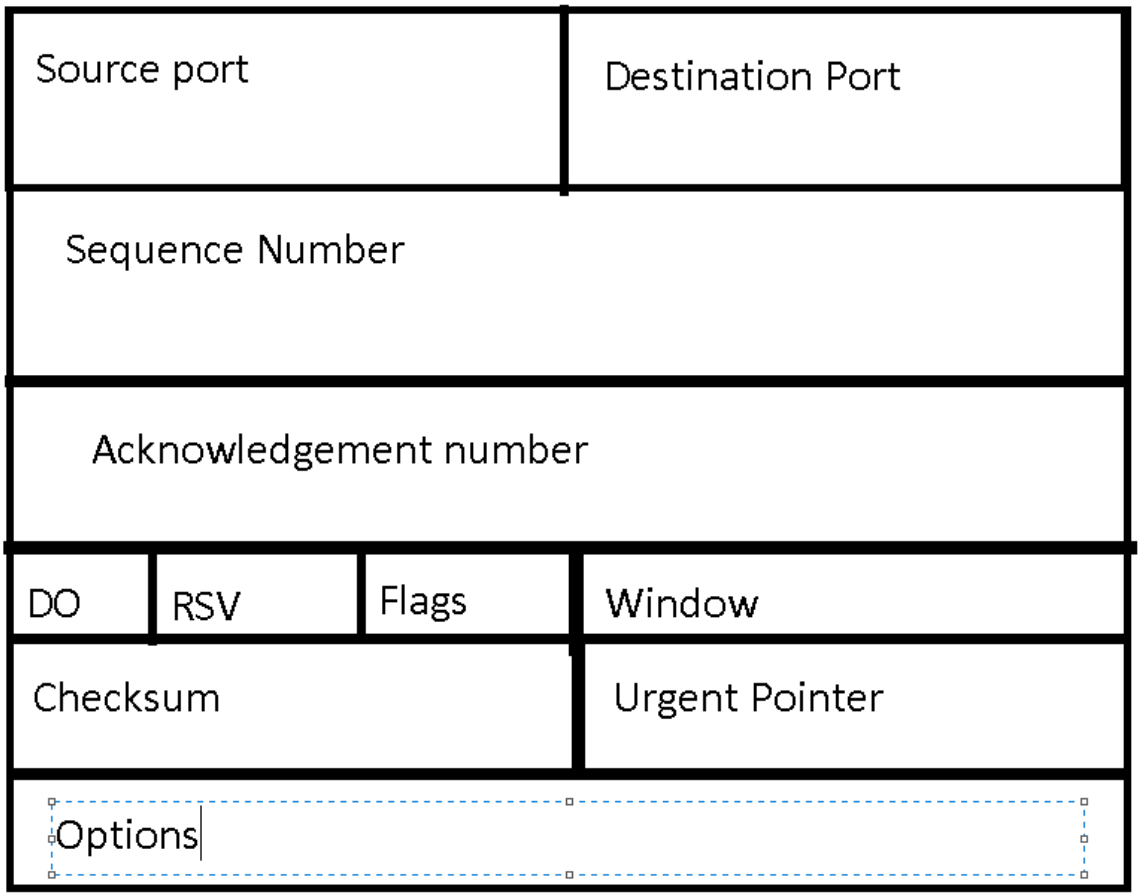
TCP HEADER DIAGRAM



Source Port – number used by computer sending TCP segment usually above 1024 not always though. 16 bits.

Destination Port – Destination of the TCP segment usually below 1024 but not always. 16 bits

Sequence number - Used for segmentation of application data into TCP segments and reassembling them on the receivers' side. 32 bits

Data Offset (DO) -Indicates number of bytes into TCP packet data can be found. Allows reciver to jump straight to data. 4 bits.

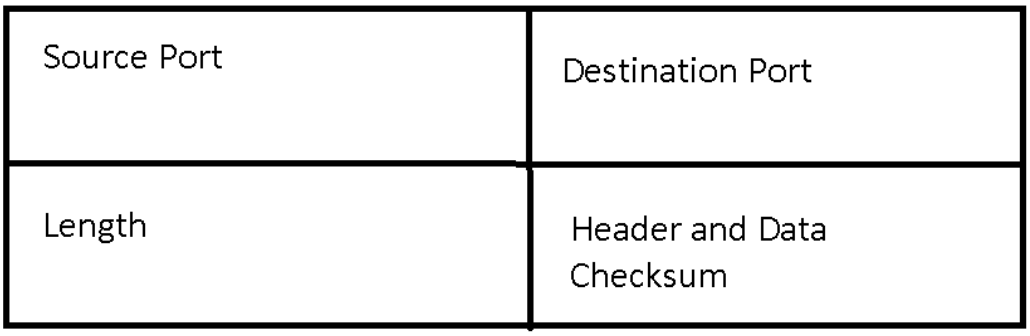
Reserved (RSV)- reserved bits or different functionality for urgent flag, acknowledgement flag, push flag, reset flag synchronize flag and FIN (end of data flag). 6 bits

Window – number of octets in TCP header. 16 bits.

Checksum – Cyclic redundancy check done by sender which is a calculation to validate integrity of data in TCP header before being sent. 16bits.

Urgent Pointer – Points to end of urgent data but only if the URG flag is set.

UDP HEADER DIAGRAM



Source Port – Used to identify port number of source. 16 bits

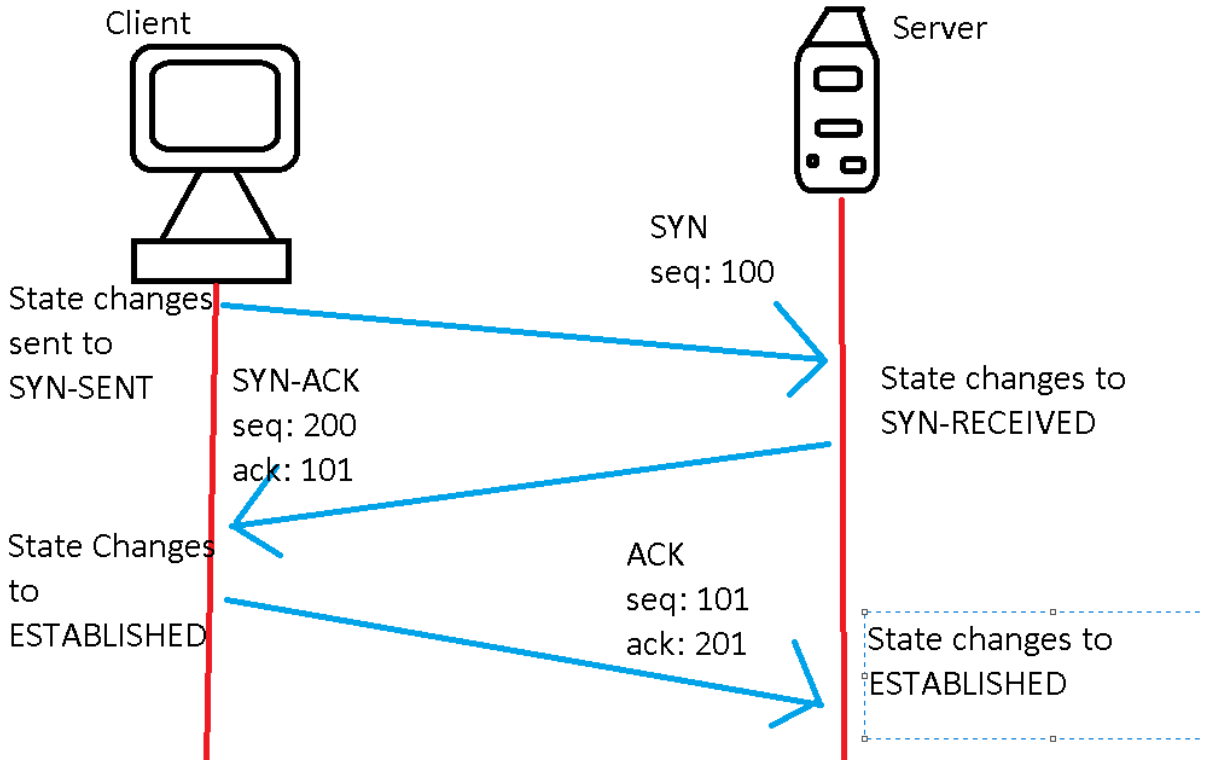
Destination Port – Used to identify port number of destined packet. 16 bits

Length – the length of UDP including header and data. 16 bits.

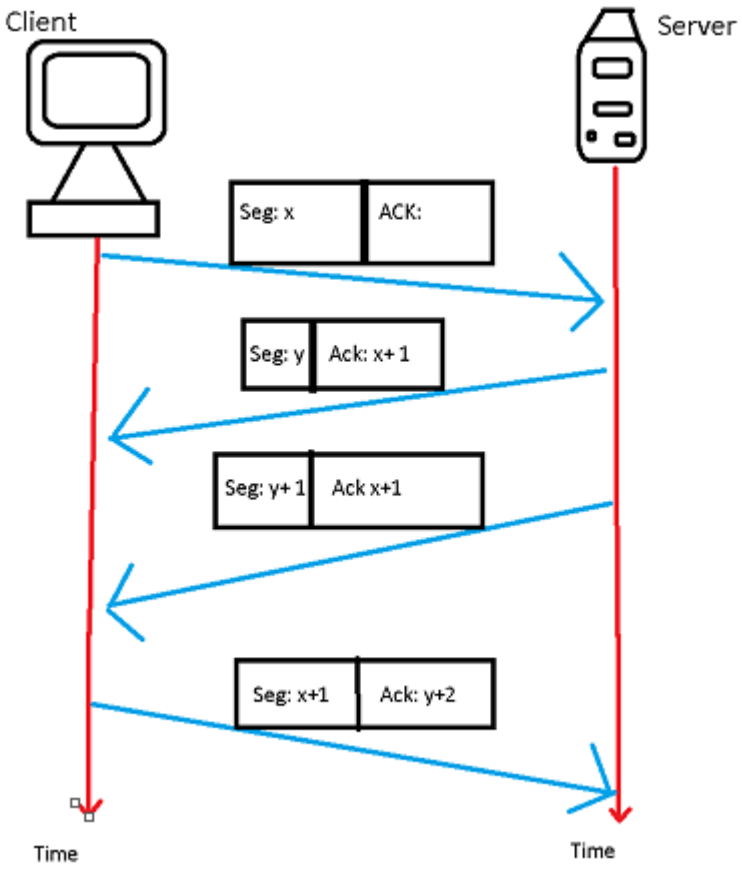
Checksum – Is the 16 bits ones compliment sum of UDP header, pseudo information header from IP header and the data. It is padded with zero octets at the end if necessary.

5.

TCP 3-way handshake is is a process which is used in a TCP/IP network to make a connection with the server and client.



6. 4 way TCP teardown is effectively a connection termination that happens. Both server and client should participate in termination if one terminates the other can still send data otherwise.


Client
Server
Seg: x
ACK:
Seg: y
Ack: x+ 1
Seg: y+ 1
Ack x+1
Seg: x+1
Ack: y+2
Time
Time