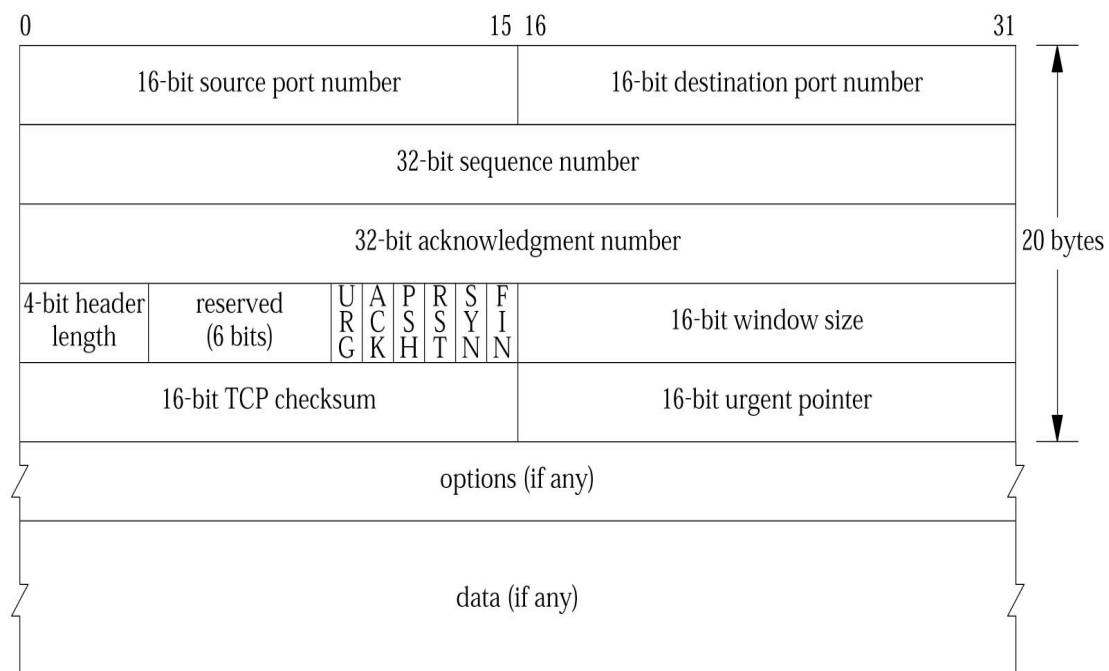


TCP Header Format

TCP Header



TCP Flag	Meaning	Purpose
URG	Urgent	Identifies important data
ACK	Acknowledgment	Acknowledges a connection; it is turned on for the majority of the connection
PSH	Push	Tells the receiver to push the data through instead of buffering it
RST	Reset	Resets a connection
SYN	Synchronize	Synchronizes sequence numbers during the beginning of a connection
FIN	Finish	Gracefully closes a connection when both sides say good-bye

Explicação

The **SrcPort** and **DstPort** fields identify the source and destination ports, respectively. These two fields plus the source and destination IP addresses, combine to uniquely identify each TCP connection.

The **sequence number** identifies the byte in the stream of data from the sending TCP to the receiving TCP that the first byte of data in this segment represents. ~

The **Acknowledgement number** field contains the next sequence number that the sender of the acknowledgement expects to receive. This is therefore the sequence number plus 1 of the last successfully received byte of data. This field is valid only if the ACK flag is on. Once a connection is established the Ack flag is always on.

The **Acknowledgement**, **SequenceNum**, and **AdvertisedWindow** fields are all involved in TCP's sliding window algorithm. The Acknowledgement and AdvertisedWindow fields carry information about the flow of data going in the other direction. In TCP's sliding window algorithm the receiver advertises a window size to the sender. This is done using the AdvertisedWindow field. The sender is then limited to having no more than a value of AdvertisedWindow bytes of unacknowledged data at any given time. The receiver sets a suitable value for the AdvertisedWindow based on the amount of memory allocated to the connection for the purpose of buffering data. TCP's flow control is provided by each end advertising a *window size*. This is the number of bytes, starting with the one specified by the acknowledgment number field, that the receiver is willing to accept. This is a 16-bit field, limiting the window to 65535 bytes. There is a new window scale option that allows this value to be scaled, providing larger windows.

The **header length** gives the length of the header in 32-bit words. This is required because the length of the options field is variable.

The 6-bit **Flags field** is used to relay control information between TCP peers. The possible flags include SYN, FIN, RESET, PUSH, URG, and ACK.

- The SYN and Fin flags are used when establishing and terminating a TCP connection, respectively.
- The ACK flag is set any time the Acknowledgement field is valid, implying that the receiver should pay attention to it.
- The URG flag signifies that this segment contains urgent data. When this flag is set, the UrgPtr field indicates where the non-urgent data contained in this segment begins.
- The PUSH flag signifies that the sender invoked the push operation, which indicates to the receiving side of TCP that it should notify the receiving process of this fact.

The **Checksum** covers the TCP segment: the TCP header and the TCP data. This is a mandatory field that must be calculated by the sender, and then verified by the receiver.

The **Option field** is the maximum segment size option, called the MSS. Each end of the connection normally specifies this option on the first segment exchanged. It specifies the maximum sized segment the sender wants to receive.

The **data** portion of the TCP segment is optional.

http://uic.rsu.ru/doc/inet/tcp_stevens/tcp_tran.htm