Assignment no.7

PAS078BEI040

Q1. What is the size of UDP header. What are the different fields. Describe each fields.

1. The size of UDP header is 8 bytes(64 bits). It consists of the following fields:

* Source Port (16 bits):

Specifies the port number of the sender application.

* Destination Port (16 bits):

Specifies the port number of the receiver application.

* Length (16 bits):

Indicates the total length of the UDP datagram, including the header and the data (measured in bytes).

* Checksum (16 bits):

Used for error-checking purposes. It can be set to zero if checksum calculation is not desired.

Q2. What is the size of TCP header, What are the different fields? Describe its fields?

1. The size of header is 20bytes(160bits).It consists of more complex fields than the UDP header and they are:
2. Source Port (16 bits):

Specifies the port number of the sender.

1. Destination Port (16 bits):

Specifies the port number of the receiver.

1. Sequence Number (32 bits):

Used for sequencing segments for reassembly at the receiver.

1. Acknowledgment Number (32 bits):

Acknowledgment number when ACK flag is set, indicating the next sequence number expected by the sender.

1. Data Offset (4 bits):

Specifies the size of the TCP header in 32-bit words (4 bytes). This indicates where the data begins. It also indirectly determines the length of any TCP options.

1. Reserved (6 bits):

Reserved for future use. Set to 0 in normal operation.

1. Flags (6 bits):

Various control flags:

URG (Urgent Pointer): Indicates urgent data.

ACK (Acknowledgment): Indicates acknowledgment number is valid.

PSH (Push): Push function to push data immediately to the application.

RST (Reset): Reset the connection.

SYN (Synchronize): Synchronize sequence numbers to initiate a connection.

FIN (Finish): Finish the connection.

1. Window Size (16 bits):

Specifies the size of the receive window, indicating how much data the sender can receive.

1. Checksum (16 bits):\

Used for error-checking the TCP header and data.

1. Urgent Pointer (16 bits):

If the URG flag is set, this field points to the sequence number of the urgent data.

1. Options (Variable):

Optional and variable in length, depending on the Data Offset field.

Examples of options include Maximum Segment Size (MSS), Window Scale, Timestamps, and Selective Acknowledgment (SACK).