UDP Header Format

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| TCP header field | Functionality / purpose | Needed for “rdt over UDP”? (yes/no) Include in your Header: (yes/no)? If yes, include the same field or an adapted version? | Justification of your choice: why include/not include, why the same field or an adapted version |
| Source port # | Identifies the sending process | Needed, but not included | Redundant, since source port # is already present in the UDP header |
| Destination port # | Identifies the destination process | Needed, but not included | Redundant, since destination port # is already present in the UDP header |
| Sequence # | Identified the packet sent | Needed | Both GBN and SR rely on the sequence # of a packet to determine if packets are out of order or have been lost. |
| Acknowledgement # | Value of the next sequence # that the receiver is expecting to receive. | Needed | GBN and SR use ACK #s to for the validation of packets that have been received. |
| Data offset | Specifies the offset so that the package data can be referenced. | Needed, but not included. | Redundant, since data offset is already present in the UDP header as “length.” |
| Reserved | Bits reserved for future use. | Not needed. | We do not require reserved bits. |
| N S | Protection against concealment | Not needed. | Out of scope. |
| C W R | Congestion window reduced flag. |  |  |
| E C E | Indicates TCP is ECN compatible. | Not needed. | Out of scope. |
| U R G | A flag used to indicate that a packet has a higher priority. | Not needed. | Our UDP packets all have the same priority. |
| A C K | A flag used as a receipt for a received packet. | Needed. | GBN and SR required ACK bit flag. |
| P S H |  |  |  |
| R S T | Reset flag to indicate packet was sent to different host. | Not needed. | Out of scope. |
| S Y N | Used to establish a three-way handshake. | Not needed. | UDP is a connectionless protocol, no connection establishment is required. |
| F I N |  |  |  |
| Window Size |  | Needed. |  |
| Checksum | A numeric value used to detect lost data or corrupted data. | Needed, but not included. | Redundant, since checksum is already present in the UDP header |
| Urgent Pointer | Gives priority to packets. | Not needed. | All our data has the same priority. |
| Options | Options available to TCP | Not needed. | We will not require any additional options. |
| Padding | 0 bits used to pat the header so that it ends on a 32 bit length/boundary. | Needed. | To ensure the proper size of the header size is correct and data begins on a 32 bit boundary. |