Wireshark Retransmission Expert Symptom Priorities

Pro	Expert Symptom	Supersedes	Conditions
1	TCP Keep-Alive	TCP Spurious Retransmission TCP Fast Retransmission TCP Out-Of-Order TCP Retransmission	The segment size is zero or one **and** • The current sequence number is one byte less than the next expected sequence number
2	TCP Spurious Retransmission	TCP Fast Retransmission TCP Out-Of-Order TCP Retransmission	• Not a keepalive packet. • Checks for a retransmission based on analysis data in the reverse direction • The segment length is greater than zero. • Data for this flow has been acknowledged. That is, the last-seen acknowledgement number has been set. • The next sequence number is less than or equal to the last-seen acknowledgement number. **Note**: If the ACK didn't make it to the server, this isn't really a Spurious Retransmission - it's just a standard Retransmission. On the sender side, Wireshark must mark it as a Spurious Retransmission because the ACK was seen in the trace
3	TCP Fast Retransmission	TCP Out-Of-Order TCP Retransmission	• Not a keepalive packet. • In the forward direction, the segment size is greater than zero. • The next expected sequence number is greater than the current sequence number. • There are more than two duplicate ACKs in the reverse direction. • The current sequence number equals the next expected acknowledgement number. • The last acknowledgement less than 20ms ago.

4	TCP Out-Of-Order	TCP Retransmission	• Not a keepalive packet.
			• In the forward direction, the segment length is greater than zero.
			• The next expected sequence number is greater than the current sequence number.
			• The next expected sequence number and the next sequence number differ.
			• The last segment arrived within the Out-Of-Order RTT threshold.
			• The threshold is either
			  • If present, the value in the “iRTT” (tcp.analysis.initial_rtt) field under “SEQ/ACK analysis"
			  • If not present, the default value of 3ms is used.**"

5	TCP Retransmission		• Not a keepalive packet. • In the forward direction the segment length is greater than zero. • The next expected sequence number is greater than the current sequence number.

Forward Direction - Direction of Data transfer, sender to receiver
Reverse Direction - Direction of Acks for the data, receiver to sender