Selective retransmission

Last Updated: 2022-01-26

When an RTP endpoint sends an NLP, a copy of the data portion of the NLP is kept until the remote RTP endpoint acknowledges receipt of the data. If NLPs are lost in the network, the data needs to be retransmitted by the RTP endpoint.

HPR support uses a selective retransmission mechanism where data is not retransmitted unless instructed to do so by the remote RTP endpoint. Additionally, the remote RTP endpoint indicates which messages must be retransmitted. This sophisticated approach has the following distinct advantages over other algorithms:

– Comparing selective retransmission to the "go back N" approach, assume 10 messages are sent and messages 3 and 6 were lost in the network. Using "go back N", the remote node would indicate that the next message it is expecting is message 3, which would cause the sending node to retransmit messages 3–10 even though only two messages were lost. With HPR selective retransmission, the remote node would indicate that the next expected message is message 3, but the remote node did receive messages 4–5 and 7–10, which have been queued. This way, only messages 3 and 6 are retransmitted.

– When a node in the network is overloaded, data will be discarded and lost. If retransmission is triggered by a timer popping in the sending node, the same message would be sent over and over, which makes the network congestion problem even worse. In HPR support, the trigger for retransmission lies in the remote node, not the sending node. If the sending node does not receive an acknowledgement, that triggers a path switch rather than retransmission.

– **Retransmitting output messages**
– **Requesting that input messages be retransmitted**

Parent topic:

→ High-Performance Routing (HPR) support