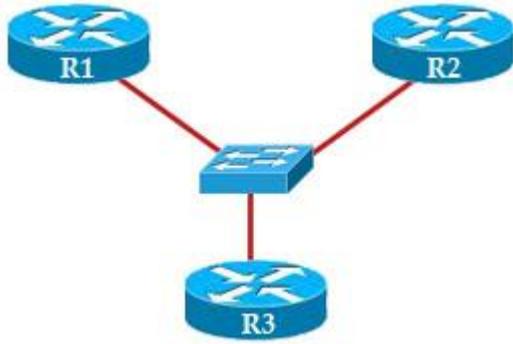


## EIGRP sequence TLV packets role

EIGRP sends updates and other information between routers using multicast packets to 224.0.0.10. For example in the topology below, R1 made a change in the topology and it needs to send updates to R2 & R3. It sends multicast packets to EIGRP multicast address 224.0.0.10. Both R2 & R3 can receive the updates and acknowledge back to R1 using unicast.



But what if R1 sends out updates, only R2 replies but R3 never does?

In the case a router sends out a multicast packet that must be reliably delivered (like in this case), an EIGRP process will wait until the RTO (retransmission timeout) period has passed before beginning a recovery action.

This period is calculated from the SRTT (smooth round-trip time); after R1 sends out updates it will wait for this period to expire. Then it makes a list of all the neighbors from which it did not receive an Acknowledgement (ACK). Next it sends out a packet telling these routers stop listening to multicast until they are been notified that it is safe again. Finally the router will begin sending unicast packets with the information to the routers that didn't answer, continuing until they are caught up. In our example the process will be like this:

1. R1 sends out updates to 224.0.0.10
2. R2 responds but R3 does not
3. R1 waits for the RTO period to expire
4. R1 then sends out an unreliable-multicast packet, called a **sequence TLV** (Type-Length-Value) packet, which tells R3 not to listen to multicast packets any more
5. R1 continues sending any other muticast traffic it has and delivering all traffic, using unicast to R3, until it acknowledges all the packets
6. Once R3 has caught up, R1 will send another sequence TLV, telling R3 to begin listening to multicast again.

**The sequence TLV packet contains a list of the nodes that should not listen to multicast packets** while the recovery takes place.

But notice that the TLV packet in step 6 does not contain any nodes in the list.

Note: In the case R3 still does not reply in step 4, R1 will attempt to retransmit the unicast 16 times or continue to retransmit until the hold time for the neighbor in question expires. After this time, R1 will declare a *retransmission limit exceeded* error and will reset the neighbor.

