**How a router sends RIP updates**

There are two types of RIP updates: regular and triggered.

* The router sends regular updates every 30 seconds. The update contains all of the information in the routing table.
* The router sends triggered updates only when a route has changed or an interface changes state (up or down).

**How a router processes incoming RIP packets**

When a router receives a RIP packet ([flowchart](file:///C:\Program%20Files\Cisco%20Packet%20Tracer%206.0.1\help\default\flowcharts\RouterReceiveRip.jpg) here):

* It drops the packet if (any):
  + The incoming port does not have a valid IP address or is not RIP-enabled.
  + The source IP address is not from a directly connected network.
  + The packet came from the router itself.
  + The packet's RIP version does not match the router's RIP version.
* If the packet is a request packet:
  + Check the port to see if it is a passive interface.
    - If it is, drop the packet.
    - If it is not a passive interface, process the packet:
      * Create a RIP response packet, which contains information about a route or the entire routing table (depending on the request).
      * Send the RIP response out the same port.
* If the packet is a response packet, process it:
  + Look through each RIP route portion of the packet (the portion from address family identifier, or AFI, to the metric). A RIP packet can contain up to 25 RIP route portions.
    - Ignore any portions where (any):
      * The metric is greater than infinity.
      * The AFI is not the IP family.
      * It is a broadcast, Class D, or Class E address.
  + Set the next hop to the incoming port's address.
  + For new routes, ignore the route portion if the metric is now 16.
  + For existing routes, the metric is set to 16.
  + If the packet contains information about a network that does not exist in the RIP database, it is added to the database.
  + If a network already has an entry in the RIP database, update it with the latest information.
  + Send out new and updated routes on the next triggered update.

