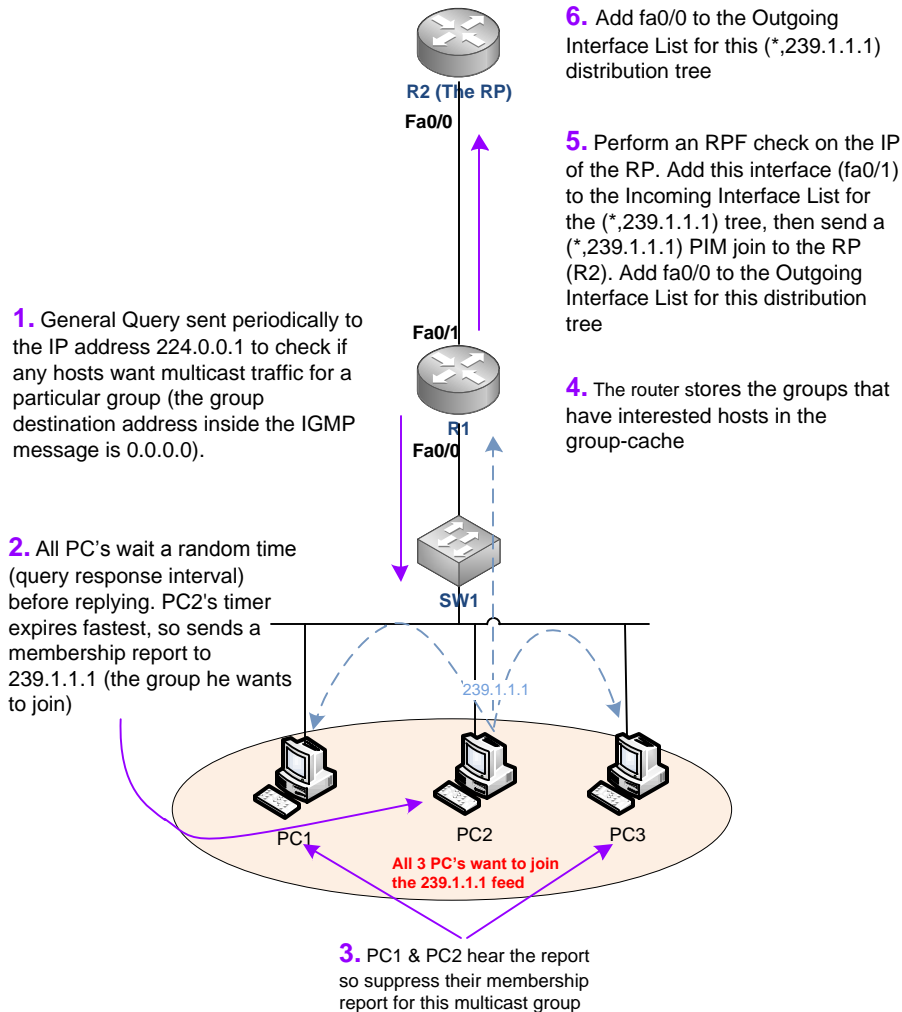


Multicast Member Join Process

Building the RPT towards group members



IGMP Timers

General Query Interval

- Sent periodically by the IGMP querier for the segment to check if any hosts want multicast traffic for a particular group
- IP header destination = 224.0.0.1 (all hosts group)
- IGMP group destination = 0.0.0.0
- Sets the max query response time set to the query response interval. If a host wants to join a group, he will reply between 0 and the max response time. By default this is 10 seconds
- Cisco default = 60 seconds
- RFC default = 125 seconds

Group Membership Interval

If a router doesn't hear a membership report within this time, it removes the multicast feed from this segment. Default time 180secs IGMPv1, 260 secs in IGMPv2. This is required in IGMPv1 because there is no leave message. In IGMPv2 it can be used in case the host for some reason doesn't send the leave message (maybe a power failure).

Other Querier Present Interval (AKA Query timeout-interval)

- One router per segment is elected the querier for the multicast group. On an Ethernet segment, if there is more than one router, the router with the lowest IP address on that segment is elected as the querier. The other routers are considered "non-querier routers". If a non-querier router does not receive a general query message from the elected querier within the other querier present interval, it assumes the original querier has failed, and becomes the querier itself
- Default timer = 2x query interval
- Set using #ip igmp query-timeout [value]
- Verify using #sh ip igmp interface [interface]

Last Member Query Interval

- Initiated by an IGMP leave message. When a host wants to leave a multicast group, it sends an IGMP leave message to the all routers multicast address (224.0.0.2). The router issues a group-specific query on the segment to check if any other hosts on the segment still want multicast traffic for this particular group. The last member query interval is the amount of time the router waits for a reply to the group-specific query. If no hosts respond within 2.5x this interval (also known as the last-member-query-count), the router removes this segment from the multicast stream.
- Default interval time = 1000ms
- Set using #ip igmp last-member-query-interval [interval]
- Verify using #sh ip igmp interface [interface]

Last Member Query Count

- After an IGMP leave has been received and the router has sent a group-specific query message, the router starts the last member query interval. If no membership report has been received within the query-count x the last-member-query-interval, the multicast feed is stopped for that segment
- Default is 2.5xlast-member-query-interval
- Set using #ip igmp last-member-query-count
- Verify using #sh ip igmp interface [interface]

Maximum Query Response Time (MRT)

- A count down timer that is used by a host to identify when it should send the host membership report. The host chooses a random time between 0 and the maximum query response time to send the membership report.
- Used as a method for controlling the amount of host membership reports that are sent on a segment. So if there are 200 hosts all wanting to join a multicast group, the first host to count from the MRT to 0 will send a membership report for that group. The others hear it and suppress their reports, but still receive the multicast traffic.
- Destination address = multicast group IP address.
- Default = 10 seconds
- Configurable range = .1 – 25.5 seconds
- Set using #ip igmp query-max-response-time [interval]
- Verify using #sh ip igmp interface