

Recommended Configuration of AsantéIntraCore 3524/3548/35160 switches for correct IGMP Multicast Operation

Whether you know it or not, IGMP multicast traffic is likely on your network. The number of applications using IGMP multicasting for some or all of their transport across the network is growing rapidly. IGMP multicasting is the transmission of packets from 1 client to a specific group of clients on the network. Some traditional heavy hitters for IGMP multicasting are:

- Drive imaging over the network (Symantec Ghost, PowerQuest Drive Image Pro, etc...)

- Multicasting Video (vBrick, etc..)

- VoIP Conference calls

- File Sharing Applications (transfers 1 file to many downloaders)

Network managers are often surprised by the number of IGMP multicast sessions on their network. In addition, even if the percentage of multicast traffic of the network is small, one large multicast stream can cause substantial problems on a network that isn't configured to handle multicasts correctly. Additionally, some of the newer IGMP applications such as video broadcast and voice conference calls over IP are very latency sensitive, so any misconfiguration of IGMP multicasting can cause problems.

When IGMP multicasting is being used on a modern switched network, multicast-aware switches can reduce network traffic by ensuring that multicasts are forwarded only to ports which need to receive them. The switches build separate multicast tables to keep track of which ports are participating in which IGMP groups. If networks are not correctly configured for IGMP multicasting, multicast traffic ends up being treated like broadcast traffic and sent to every port in the broadcast domain, often at the expense of network throughput.

Asanté Recommended IGMP Multicast Settings for IntraCore Layer 2 Switches

Asanté recommends that networks be correctly configured for IGMP multicast operation.

Asanté recommends the following settings for correct IGMP multicast Operation:

- IGMP [pruning] should be enabled

- IGMP Proxy Report should be disabled.

- There should be at least 1 device in each broadcast domain performing IGMP Queries at an interval of every 180 seconds (or less).

Additionally, you should make sure you are running the following versions of imagecode at minimum:

35160 = rt35160_201.ima
3548 = rt3548_1.20.ima
3524 = rt3524_2.00.ima
6524 = rt6524_107a.ima
651120 = RDUx_as.4093

These imagecode files are available at:

<http://www.asante.com/support/downloads.aspx>

Asanté IGMP Implementation Frequently Asked Questions

Question: What happens if I don't turn on IGMP pruning?

Answer: Multicast still works, but when the switch receives an IGMP multicast stream the traffic will be forwarded to all ports on the switch (versus just those ports participating in the IGMP group.)

Question: How can I tell if I have IGMP multicast traffic on my network?

Answer: Via telnet or console, go to the switch multicast configuration page. With IGMP Enabled, select a) "Display Group Addresses in All VLAN"; this will show you a list of all IGMP addresses in the multicast address table and which ports are members of the group.

Question: What happens if I don't have an IGMP Query device on a broadcast domain?

Answer: The switch will age out multicast addresses after 4 minutes. Any multicast session longer than 4 minutes will be aged out of the multicast table. If the switch receives a multicast stream for a multicast address which has been aged out of the multicast table, it will forward it to all ports.

Question: Is there a way I can see if IGMP query packets are present in a broadcast domain?

Answer: Yes. The Asanté 6524/3524/3548/35160 all have a simple report which shows which port on the switch is receiving an IGMP Query. If no port is receiving an IGMP query then IGMP query is not present on the broadcast domain. To view this report, go to the multicast configuration page:

Screen Shot #2 shows that the switch is receiving an IGMP query on the 'uplink' port of the switch (port 16 in this example.) This means that IGMP query is present in this broadcast domain.

Question: What equipment typically performs the IGMP query function?

Answer: IGMP query is a Layer 3 function typically performed by a router doing multicast routing (DVMRP or PIM).

Question: Do any Asanté switches perform IGMP Query?

Answer: Yes. The Asanté 35516, 35160 (v2.01 imagecode), 3548 (v1.20 imagecode), 3524 (v2.00 imagecode) can all perform IGMP Queries. The Asanté IntraCore 35516 series of L3 switches support both DVMRP and PIM multicast routing. Enabling either of these multicast routing protocols on the 35516 will enable IGMP query on each broadcast domain the 35516 is routing between. Additionally, the Asanté 35160 (v2.01 imagecode), 3548 (v1.20 imagecode), 3524 (v2.00 imagecode) can all perform IGMP Queries.

Question: What happens if I have more than 1 IGMP query device in a broadcast domain?

Answer: This is fine. IGMP ensures that there is only one IGMP Querier per broadcast domain. If a device which is performing IGMP queries receives an IGMP query from a device with a lower IP address than itself, it stops performing IGMP queries. If the IGMP querier with the lower IP ceases to transmit IGMP queries, the IGMP querier with the higher IP address will resume transmitting IGMP queries.

Question: How do I enable IGMP query on an Asanté 35160/3548/3524?

Answer: From the multicast configuration screen, select v) "Advanced IGMP Configuration". In the Advanced IGMP configuration screen, select r) "Enable/Disable Transmitting Query packets". Please remember that you need to have an IGMP Querier for each VLAN. So, if you have multiple VLANs, it is best to turn on IGMP Query on your [multicast-savvy] router.

Question: What are the default settings for IGMP on Asanté switches?

Answer:

3548 v1.20 imagecode. IGMP=Enabled. IGMP Query=Disabled.

3524 v2.00 imagecode. IGMP=Enabled. IGMP Query=Disabled.

35160 v2.01 imagecode. IGMP=Disabled. IGMP Query=Disabled.

Please note in all previous versions of Asanté IntraCore Imagecode, by default had IGMP disabled.

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