Avoiding Unicast Flooding with a GQAM Modulator

Overview

Introduction

In normal conditions, when a video stream is sent through a switch to a GQAM modulator, the packets from that video stream should only be sent to the port that is connected to the GQAM. However, there have been occasions in which those packets are "flooded" through all ports on the switch every five minutes. This issue can be corrected by adjusting the CAM aging timer.

Purpose

This document explains a unicast flooding issue that can occur with with LAN switches and provides a workaround to prevent the issue.

Audience

This document was written for headend technicians. Field service engineers and Cisco® Services engineers may also find the information in this document helpful.

Document Version

This is the first formal release of this document.

Adjusting the CAM Aging Timer

LAN switches use forwarding tables, such as Layer 2 and Content Addressable Memory (CAM) tables, to direct traffic to specific ports based on the virtual LAN (VLAN) number and the destination MAC address of the frame. If the table does not contain an entry for the destination MAC address of the frame in the incoming VLAN, the switch sends the unicast frame to all forwarding ports within the respective VLAN. This condition is called "flooding." In this case, the packet is flooded out of all forwarding ports in its VLAN except for the port where it is received.

The default aging time for an Address Resolution Protocol (ARP) table is 4 hours, but the CAM only holds the entries for 5 minutes (300 seconds). The switch sends out a frame to all forwarding ports in the VLAN whenever the destination MAC address is aged out from the CAM table.

Workaround

In order to prevent unicast flooding, you should set your CAM aging timer to be greater than or equal to the ARP timeout value.

The default value for the L3 switch ARP timeout is 4 hours, and the default time for the L2 switch timeout is 300 seconds (5 minutes). To prevent unicast flooding, the L2 switch CAM aging timeout should be set to a value greater than the ARP timeout of the L3 switch.

You can use one of the following commands in order to increase the CAM aging timer for the affected VLAN to match the ARP aging time:

- If you are using CatOS, use the **set cam agingtime** command to change the CAM aging timer.

- If you are using Cisco IOS software, use the **mac−address−table aging−time** command to change the CAM aging timer.

Note: If you are working in a Catalyst environment that runs a Hot Standby Router Protocol (HSRP), be sure that the CAM and ARP timers are synchronized.

For more information, refer to *Catalyst 6500/6000 Switches ARP or CAM Table Issues Troubleshooting*, document ID 71079.

For Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer. Use the following table to find the center in your area.

Region	Assistance Centers	Telephone and Fax Numbers
North America South America Central America	Atlanta, Georgia United States	**Technical Support** For *Digital Broadband Delivery System* products only, call: ■ Toll-free: 866 787-3866 ■ Local: 770 236-2200 ■ Fax: 770 236-2488 For all products *other than* Digital Broadband Delivery System, call: ■ Toll-free: 800 722-2009 ■ Local: 678 277-1120 ■ Fax: 770 236-2306 **Customer Service** ■ Toll-free: 800 722-2009 ■ Local: 678 277-1120 ■ Fax: 770 236-5477
Europe	European Technical Assistance Center (EuTAC), Belgium	Telephone: 32 56 445 197 or 32 56 445 155 Fax: 32 56 445 061
Asia-Pacific	Hong Kong, China	Telephone: 011 852 2588 4745 Fax: 011 852 2588 3139
Australia	Sydney, Australia	Telephone: 011 61 2 8446 5394 Fax: 011 61 2 8446 8015
Japan	Tokyo, Japan	Telephone: 011 81 3 5322 2067 Fax: 011 81 3 5322 1311