Nexus 7000 Series Switches Error Messages

Document ID: 113619

Contents

Introduction
Prerequisites
Requirements
Components Used
Conventions
%M2FIB−SLOT3−2−M2FIB_MAC_TBL_PRGMING: Failed to program the mac table. MAC Table is Full for this entry
Problem
Description
Workaround
Verify
Related Information

Introduction

This document provides a brief explanation of error messages that appear on Cisco Nexus 7000 Series Switches.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on the Nexus 7000 Series Switches.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

%M2FIB−SLOT3−2−M2FIB_MAC_TBL_PRGMING: Failed to program the mac table. MAC Table is Full for this entry

Problem

The switch reports this error message:

```
%M2FIB−SLOT3−2−M2FIB_MAC_TBL_PRGMING: Failed to program the mac table.
MAC Table is Full for this entry. To avoid possible multicast traffic loss, disable OMF.
```

```
Use the configuration CLI: "no ip igmp snooping optimise-multicast-flood"
```

Description

The root of this error message is you reached the limitation of your F1 line card. The F1 line cards support between 16000−256000 MAC address table entries. The card has 16 forwarding engines for each line card, and each line card can hold 16000 MAC address table entries, hence 256000 entries for each line card. Refer to Cisco Nexus 7000 I/O Module Families F1 and M1 for more information.

Issue the **show mac address−table count** command in order to verify the MAC address table entries.

For example:

```
Nexus7K#show mac address-table count
MAC Entries for all vlans :
Dynamic Address Count:                15576
Static Address (User-defined) Count:      0
Secure Address Count:                     0

Nexus7K#show ip igmp snooping groups summary
Legend: E - Enabled, D - Disabled

Vlan Snoop OMF (*,G)-Count (S,G)-Count
1     E      D    0            0
4     E      D    6            0
7     E      D    0            0
17    E      D    28           0
24    E      D    4            0
34    E      D    4            0
41    E      D    1            0
52    E      D    6            0
53    E      D    5            0
55    E      D    4            0
61    E      D    0            0
62    E      D    8            0
67    E      D    4            0
70    E      D    4            0
75    E      D    6            0
77    E      D    4            0
79    E      D    5            0
85    E      D    0            0
88    E      D    2            0
89    E      D    7            0
96    E      D    5            0
98    E      D    0            0
102   E      D    3            0

!--- Output suppressed

1504  E      D    4            0
2322  E      D    0            0
2324  E      D    0            0
2700  E      D    0            0
2701  E      D    2            0
2705  E      D    0            0
2708  E      D    1            0
2709  E      D    0            0
2710  E      D    0            0
2712  E      D    0            0
2720  E      D    0            0
2721  E      D    0            0
Total number of (*,G) entries: 176
Total number of (S,G) entries: 0
```

Cisco Nexus 7000 F1−Series 32−Port 1 and 10 Gigabit Ethernet Module has a limitation of 16,000 MAC address table entries for each forwarding engine, and up to 256,000 MAC address table entries for each module.

The effect of the removal of OMF with the **no ip igmp snooping optimise−multicast−flood** command causes multicast traffic to be flooded to all ports within VLANs with multicast traffic.

Workaround

As workarounds, there are several methods to increase your MAC address table capacity.

Workaround 1

Decrease the MAC address table aging timer by using the **mac address−table aging−time** *time in seconds* command. For example drop from 30 minutes to 15 minutes.

Note: The Default MAC aging time is 30 minutes. For more information, refer to Managing Hardware Resource Utilization document.

For example:

```
Nexus7K(config)#mac address−table aging−time 900
```

After making a change in MAC address table aging timer, use the **show mac address−table count** command to verify the MAC address table entries.

For example:

```
Nexus7K#show mac address−table count
MAC Entries for all vlans :
Dynamic Address Count:               13465
Static Address (User−defined) Count:     0
Secure Address Count:                    0
```

Workaround 2

Issue the **no ip igmp snooping optimise−multicast−flood** command in order to disable the optimise−multicast−flood (OMF).

For example:

```
Nexus7K(config)# vlan configuration vlan_id

Nexus7K(config−vlan−config)# no ip igmp snooping optimise−multicast−flood
```

Workaround 3

Change how the ports on your F1 card are mapped to different VLANs.

The F1 card can have anywhere between 16000 to 256000 MAC addresses for each line card. This range has to do with how the VLANs are mapped for each port. Each group of two ports are on the same ASIC and thus share MAC address table information. These ASICs have a capacity of 16000 MAC address table entries. Each ASIC synchronizes the MAC address table for each VLAN on other ASICs with the same VLANs.

For example if ports 1 and 15 both allow VLAN 1000, they both have the MAC address table entries for

VLAN 1000. Thus, if VLAN 1000 has 16000 MAC address table entries, no more entries are able to be programmed into those two ASICs (for ports 1,2 and 15,16). If all 32 ports allow VLAN 1000, you are no longer be able to program new MAC addresses into any port, since you have reached the 16000 limit.

However, if only half the ports (1−16) allow VLAN 1000 and the other half (17−32) allow VLAN 2000, you have a capacity of 16000 MAC entries of VLAN 1000 in ports 1−16 and another 16000 in ports 17−32 for VLAN 2000 (total 32000 entries).

Thus, you can possibly increase your MAC address table capacity.

Note: These are workarounds for a hardware limitation issue.

Verify

Use these commands for verification.

- Use the **show ip igmp snooping mac−oif** command in order to view IGMP Snooping static MAC OIF information.
- Use the **show ip igmp snooping groups summary** command in order to view detailed information for the group.
- Use the **show mac address−table count** command in order to view the number of MAC address entries.

Related Information

- **Cisco Nexus 7000 Series Switches Support**
- **Switches Product Support**
- **LAN Switching Technology Support**
- **Technical Support & Documentation − Cisco Systems**

Updated: Jul 25, 2012 Document ID: 113619