Common Issues with Catalyst 4500 Switches that Run Cisco IOS Software

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Contents

Introduction

This document describes how you can troubleshoot hardware problems and related issues that are common on Cisco Catalyst 4500/4000 switches with Supervisor Engine II+, III, IV, and V modules. Refer to Hardware Troubleshooting for Catalyst 4000/4912G/2980G/2948G Series Switches for information on how to troubleshoot Supervisor Engine I and II.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on these software and hardware versions:

- Cisco Catalyst 4500/4000
- Cisco IOS® Software

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.

Background Information

The Supervisor Engine modules II+, III, IV, and V run Cisco IOS Software only. This table lists the support of these Supervisor Engine modules in various chassis:

Supervisor Engine Module	Chassis Support
Supervisor Engine II+ (WS−X4013+)	4006, 4503, 4506, 4507R
Supervisor Engine II+ 10GE (WS−X4013+10GE)	4503, 4506, 4507R
Supervisor Engine III (WS−X4014)	4006, 4503, 4506
Supervisor Engine IV (WS−X4515)	4006, 4503, 4506, 4507R
Supervisor Engine V (WS−X4516)	4006, 4503, 4506, 4507R, 4510R
Supervisor Engine V 10GE (WS−X4516−10GE)	4503, 4506, 4507R, 4510R

You can also see the latest detailed list of supervisor modules and supported chassis in the Cisco Catalyst 4500 Supervisor Comparison

This table provides information about the supervisor engine and the chassis that support redundancy.

Redundant Supervisor Engine	Chassis Support
Supervisor Engine II+ (WS−X4013+)	4507R
Supervisor Engine II+ 10GE (WS−X4013+10GE)	4507R
Supervisor Engine IV (WS−X4515)	4507R
Supervisor Engine V (WS−X4516)	4507R, 4510R
Supervisor Engine V 10GE (WS−X4516−10GE)	4507R, 4510R

Troubleshoot

This section lists some common errors that you encounter on the switch, and provides solutions.

Error Message when the Host Address is a Source Address on Multiple Ports

Problem

The `%C4K_EBM-4-HOSTFLAPPING:Host [mac-addr] in vlan [dec] is flapping between port [char] and port [char]` error message appears.

This error message appears on the switch when the switch detects the specified host address as a source address on multiple ports.

Cause

The issue can occur due to Spanning Tree Protocol (STP) loops in the network that cause packet drops from the specific host. In addition to packet drops, STP loops lead to several other symptoms, which are listed here:

- Loss of connectivity to, from, and through affected network regions.
- High link utilization (often 100 percent).
- High switch backplane utilization (compared to the baseline utilization).
- Syslog messages that indicate packet looping in the network (for example, HSRP duplicate IP address messages).
- Syslog messages that indicate constant address relearning or MAC address flapping messages.
- An increase in the number of output drops on many interfaces.

Note: One or more of these symptoms independently can indicate different issues (or no issue at all). However, when you observe many of these symptoms at the same time, you must check whether a forwarding loop has developed in the network.

Workaround

Enable spanning tree in order to prevent spanning tree loops. If you have disabled spanning tree, use the information in Spanning Tree Protocol Problems and Related Design Considerations to design your network without spanning tree loops.

Error Message when the Forwarding Table Memory is Corrupt

Problem

The switch reports the `%C4K_L3HWFORWARDING-3-FTECONSISTENCYCHECKFAILED: FwdTableEntry Consistency Check Failed: index [number]` error message.

Cause

This message occurs when the forwarding table memory (SRAM) is corrupt. This error can result in packet drops. Sometimes, this error can cause the wrong interface to receive incorrectly routed packets.

Solution

Complete these steps in order to solve this problem:

1. Capture the output of: these commands:

   - **show logging**
   - **show module**
   - **show version**
2. Perform a power–cycle, and verify whether the problem is resolved. If the problem persists, open a Service Request (registered customers only) with Cisco Technical Support and attach all the information captured in step 1.

Error Message when the MAC Address Table is Corrupt

Problem

The switch reports the `%C4K_L2MAN-5-ROUTERMACADDRESSRXASSOURCE:Packet received with my own MAC address ( [mac-addr] ) as source on port [char] in vlan [dec]` error message.

Cause

A packet was received with the MAC address of the switch as the source address. This MAC was not learned as a valid source address, which suggests that there is a configuration problem. This message is rate−limited and is displayed only for the first such packet received on any interface or VLAN. Subsequent messages display a cumulative count of all such packets received in a given interval on all interfaces in any VLAN.

Solution

Complete these steps to resolve the issue:

1. Clear the MAC address table and force the switch to re−learn the MAC addresses correctly.

   ```
   Switch#clear mac-address-table dynamic
   ```
2. Check the switch configuration file to determine the source of these packets on the specified port and take corrective action to fix them at the source. This usually signifies a loop in your configuration.
3. If the error message is accompanied with the `%C4K_EBM-4-HOSTFLAPPING` error message, try to resolve it with the workaround provided in the Error Message when the Host Address is a Source Address on Multiple Ports section of this document.
4. If the problem persists, open a Service Request (registered customers only) with Cisco Technical Support and attach the outputs of the **show logging** and **show tech** commands.

Related Information

- **Troubleshooting Hardware and Related Issues on Catalyst 4500/4000 Switches Running Cisco IOS Software**
- **Troubleshooting Hardware and Common Issues on Catalyst 6500/6000 Series Switches Running Cisco IOS System Software**
- **Switches Product Support**
- **LAN Switching Technology Support**
- **Technical Support & Documentation – Cisco Systems**