Troubleshoot Active-Active NIC Teaming on ACI VMM Integration

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Introduction

This document describes how to identify an issue with the Active-Active configuration on VMM integration with ACI use LACP Load Based Teaming.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Link Agregation Control Protocol (LACP)
- Virtual Machine Monitor (VMM)
- Network Interface Control (NIC)
- Application Centric Infrastructure (ACI)

Components Used

This document is not restricted to specific software and hardware versions.

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, ensure that you understand the potential impact of any command.

Configure

The network has configured an Active-Active LACP Load Based Teaming NIC on a VM configuration allowed on two servers and is connected to ACI on two different Leaves switches on a VMM integration.

Network Diagram

The next image is a high-level reference in order to illustrate the design.



vPC 5 members are Interface Eth 1/1 on Leaf 1 and Eth 1/2 on Leaf 2.

vPC 6 members are Interface Eth 1/3 on Leaf 1 and Eth 1/4 on Leaf 2.

VM IP: 10.10.10.1

VM MAC: AA.AA.AA.AA.AA.AA

Connections:

SERVER 1 NIC 1 <-> LEAF 1 Eth 1/1

SERVER 1 NIC 2 <-> LEAF 2 Eth 1/2

SERVER 2 NIC 1 <-> LEAF 1 Eth 1/3

SERVER 2 NIC 2 <-> LEAF 2 Eth 1/4

Verify

There is currently no verification procedure available for this configuration.

The <u>Cisco CLI Analyzer</u> (registered customers only) supports certain show commands. Use the Cisco CLI Analyzer in order to view an analysis of show command output.

Troubleshoot

This section provides the information you can use to troubleshoot your configuration.

Navigate to the Endpoint Tracker (EP) tracker on the APIC GUI to track the IP for the server and review the attach/detach logs to identify the flap.

Step 1. Log in Cisco APIC GUI

Step 2. Navigate to **Operations** -> **EP Tracker**

Step 3. In the End Point Search area, input the IP address

Step 4. Click Search



Once a flap has been identified, the next step is to run the commands on each leaf switch.

<#root> LEAF1# show endpoint ip 10.10.10.1 Legend: S - statics - arpL - local0 - peer-aV - vpc-attacheda - local-agedp - peer-agedM - spanB - bounceH - vtepR - peer-attached-rl D - bounce 0 - peer-attached R - peer-attached-rl D - bounce-to-proxy E - shared-service m - svc-mgr MAC Address MAC Info/ VLAN/ Encap Interface VLAN IP Address IP Info Domain +--2 vlan-100 aaaa.aaaa.aaaa po6 ΙV vlan-100 common:common-VRF 10.10.10.1 LV po6 <#root> LEAF2# show endpoint ip 10.10.10.1 Legend: L - local S - static s - arp 0 - peer-attached a - local-aged V - vpc-attached p - peer-aged M - span

	VLAN/ Domain			Encap VLAN	MAC Address IP Address	MAC Info/ IP Info	Interfac
+ 1				vlan-1	+ 100	+	-+
aaaa.a	aaa.aaaa						
LV common	:common-Vi	RF	po6	vlan-1	100		
10.10.	10.1						
LV			p06				
<#root	>						
LEAF1#							
show p	ort-channe	el summary	7				
	s - Sus b - BFD S - Swi U - Up M - Not F - Con	oended r Session V tched F (port-char in use. N figuratior	r - Module-r Vait (- Routed nnel) Min-links no n failed	removed Dt met			
Group	Port- Channel	Туре	Protocol	Member Ports	5		
 5 6	Po5(SU) Po6(SU)	Eth Eth Eth	LACP LACP	Eth1/1(P) Eth1/3(P)			
<#root	>						
LEAF2#							
show p	ort-channe	el summary	7				
Flags:	D - Down I - Ind s - Susp b - BFD S - Swit U - Up M - Not F - Cont	n F ividual F bended r Session V tched F (port-char in use. M figuratior	P - Up in po I - Hot-star - Module-r Vait R - Routed Inel) Min-links no I failed	ort-channel (m ndby (LACP on removed ot met	nembers) ly)		
 Group	Port- Channel	Туре	Protocol	Member Ports	5		

```
<#root>
LEAF1#
show system internal epm endpoint ip 10.10.10.1
MAC : aaaa.aaaa.aaaa ::: Num IPs : 1
IP# 0 : 10.10.10.1 ::: IP# 0 flags :
Output omitted
. . .
Interface : port-channel6
                          <<<<<<< > learned on this interface
Output omitted
. . .
EP Flags : local|vPC|IP|MAC|sclass|timer|mac-ckt|
::::
<#root>
LEAF1#
show system internal epm endpoint mac aaaa.aaaa.aaaa
MAC : aaaa.aaaa.aaaa ::: Num IPs : 1
IP# 0 : 10.10.10.1 ::: IP# 0 flags : ::: l3-sw-hit: No
Output omitted
. . .
Interface : port-channel6
                         <<<<<< r></ colspan="2"><<<<<>></></></></>
Output omitted
. . .
EP Flags : local|vPC|IP|MAC|sclass|timer|mac-ckt|
::::
<#root>
LEAF2#
show system internal epm endpoint ip 10.10.10.1
MAC : aaaa.aaaa.aaaa ::: Num IPs : 1
IP# 0 : 10.10.10.1 ::: IP# 0 flags : ::: l3-sw-hit: No
Output omitted
. . .
Interface : port-channel5
```

```
Output omitted
. . .
EP Flags : local|vPC|IP|MAC|sclass|timer|mac-ckt|
::::
<#root>
LEAF2#
show system internal epm endpoint mac aaaa.aaaa.aaaa
MAC : aaaa.aaaa.aaaa ::: Num IPs : 1
IP# 0 : 10.10.10.1 ::: IP# 0 flags : ::: 13-sw-hit: No
Output omitted
. . .
Interface : port-channel6
                        <<<<<<> line interface
Output omitted
. . .
EP Flags : local|vPC|IP|MAC|sclass|timer|mac-ckt|
::::
```

From the previous outputs, you can identify that ACI receives the same information on both port channels at the same time due to the active-active configuration on VMware.

All VMs use each pair of uplinks as logically one uplink, and the topology is configured with two different pairs of port channels, and each pair uses the same information to arrive on ACI.

Note: Cisco does not recommend this kind of deployment because this type of configuration works similar to MAC Pinning and re-pin every 30 seconds based on the link utilization, derived on MAC/IP flaps between nodes or ports.

If you require a similar topology, the recommendation is use Link Aggregation Group (LAG) such as LACP or static port channel.

The <u>Cisco CLI Analyzer</u> (registered customers only) supports certain show commands. Use the Cisco CLI Analyzer in order to view an analysis of show command output.

Refer to Important Information on Debug Commands before you use debug commands.

Related Information

<u>Technical Support & Documentation - Cisco Systems</u>