Troubleshoot ACI Fault Code F199144, F93337, F381328, F93241, F450296 : TCA

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Introduction

This document describes remediations steps for ACI Fault Codes: F199144, F93337, F381328, F93241, F450296

Background

If you have an Intersight connected ACI fabric, a Service Request was generated on your behalf to indicate that instance of this fault was found within your Intersight-Connected ACI fabric.

This is being actively monitored as part of Proactive ACI Engagements.

This document describes next steps for remediation of the following fault:

Fault : F199144

```
"Code" : "F199144",
"Description" : "TCA: External Subnet (v4 and v6) prefix entries usage current value(eqptcapacityPrefix&
"Dn" : "topology/pod-1/node-132/sys/eqptcapacity/fault-F199144"
```

This specific fault is raised when current usage of the external subnet prefix exceeds 99%. This suggests a hardware limitation in terms of routes handled by these switches.

Quick Start to Address Fault: F199144

1. Command "show platform internal hal 13 routingthresholds"

module-1# show platform internal hal 13 routingthresholds Executing Custom Handler function OBJECT 0:

trie debug threshold	: 0
tcam debug threshold	: 3072
Supported UC lpm entries	: 14848
Supported UC lpm Tcam entries	: 5632
Current v4 UC lpm Routes	: 19526
Current v6 UC 1pm Routes	: 0
Current v4 UC lpm Tcam Routes	: 404
Current v6 UC lpm Tcam Routes	: 115
Current v6 wide UC lpm Tcam Routes	: 24
Maximum HW Resources for LPM	: 20480 < Maximum hardware resourd
Current LPM Usage in Hardware	: 20390 <current hw<="" in="" td="" usage=""></current>
Number of times limit crossed	: 5198 < Number of times
Last time limit crossed	: 2020-07-07 12:34:15.947 < Last occ

2. Command "show platform internal hal health-stats"

module-1# show platform internal hal health-stats No sandboxes exist |Sandbox_ID: 0 Asic Bitmap: 0x0 |-----L2 stats: ========= : 249 bds: . . . l2_total_host_entries_norm : 4 L3 stats: ======== 13_v4_local_ep_entries : 40 max_13_v4_local_ep_entries : 12288

<pre>13_v4_local_ep_entries_norm</pre>	:	0												
13_v6_local_ep_entries	:	0												
<pre>max_13_v6_local_ep_entries</pre>	:	8192												
13_v6_local_ep_entries_norm	:	0												
13_v4_total_ep_entries	:	221												
<pre>max_13_v4_total_ep_entries</pre>	:	24576												
13_v4_total_ep_entries_norm	:	0												
13_v6_total_ep_entries	:	0												
<pre>max_13_v6_total_ep_entries</pre>	:	12288												
13_v6_total_ep_entries_norm	:	0												
max_13_v4_32_entries	:	49152												
total_13_v4_32_entries	:	6294												
13_v4_total_ep_entries	:	221												
13_v4_host_uc_entries	:	6073												
<pre>13_v4_host_mc_entries</pre>	:	0												
<pre>total_13_v4_32_entries_norm</pre>	:	12												
<pre>max_13_v6_128_entries</pre>	:	12288												
total_13_v6_128_entries	:	17												
13_v6_total_ep_entries	:	0												
13_v6_host_uc_entries	:	17												
13_v6_host_mc_entries	:	0												
<pre>total_13_v6_128_entries_norm</pre>	:	0												
<pre>max_13_lpm_entries</pre>	:	20480	<	: -		 	 Max	۲i	mum					
13_lpm_entries	:	19528		<	<	 	 		Curr	ent	L3	LPM	entrie	s
<pre>13_v4_lpm_entries</pre>	:	19528												
13_v6_lpm_entries	:	0												
13_lpm_entries_norm	:	99												
<pre>max_13_lpm_tcam_entries</pre>	:	5632												
<pre>max_13_v6_wide_lpm_tcam_entrie</pre>	es	: 1000												
<pre>13_lpm_tcam_entries</pre>	:	864												
<pre>13_v4_lpm_tcam_entries</pre>	:	404												
<pre>13_v6_lpm_tcam_entries</pre>	:	460												
<pre>13_v6_wide_lpm_tcam_entries</pre>	:	24												
<pre>13_lpm_tcam_entries_norm</pre>	:	15												
<pre>13_v6_lpm_tcam_entries_norm</pre>	:	2												
<pre>13_host_uc_entries</pre>	:	6090												
<pre>13_v4_host_uc_entries</pre>	:	6073												
<pre>13_v6_host_uc_entries</pre>	:	17												
<pre>max_uc_ecmp_entries</pre>	:	32768												
uc_ecmp_entries	:	250												
<pre>uc_ecmp_entries_norm</pre>	:	0												
<pre>max_uc_adj_entries</pre>	:	8192												
uc_adj_entries	:	261												
uc_adj_entries_norm	:	3												
vrfs	:	150												
infra_vrfs	:	0												
tenant_vrfs	:	148												
rtd_ifs	:	2												
sub_ifs	:	2												
svi_ifs	:	185												

Next Steps Fault : F199144

1. Reduce the number of routes each switch has to handle so you comply with the scalability defined for the hardware model. Please check scalability guide here https://www.cisco.com/c/en/us/td/docs/switches/datacenter/aci/apic/sw/4-x/verified-scalability/Cisco-ACI-Verified-Scalability-Guide-412.html

2. Consider changing the Forwarding Scale Profile based on the scale.

https://www.cisco.com/c/en/us/td/docs/switches/datacenter/aci/apic/sw/all/forwarding-scale-profiles/cisco-apic-forwarding-scale-profiles/m-overview-and-guidelines.html

3. Removing 0.0.0.0/0 subnet in L3Out and only configure required subnets

4. If you are using Gen 1, upgrade your hardware from Gen 1 to Gen 2, as Gen 2 switches allow 20,000+ external v4 routes.

Fault : F93337

```
"Code" : "F93337",
"Description" : "TCA: memory usage current value(compHostStats15min:memUsageLast) value 100% raised abov
"Dn" : "comp/prov-VMware/ctrlr-[FAB4-AVE]-vcenter/vm-vm-1071/fault-F93337"
```

This specific fault is raised when VM host is consuming memory more than the threshold. The APIC monitors these hosts via VCenter. Comp:HostStats15min is a class that represents the most current statistics for host in a 15 minute sampling interval. This class updates every 5 minutes.

Quick Start to Address Fault : F93337

1. Command ''moquery -d 'comp/prov-VMware/ctrlr-[<DVS>]-<VCenter>/vm-vm-<VM id from the fault's DN>'''

This command gives information about the affected VM

```
# comp.Vm
           : vm-1071
oid
cfgdOs : Ubuntu Linux (64-bit)
childAction :
descr
           : comp/prov-VMware/ctrlr-[FAB4-AVE]-vcenter/vm-vm-1071
dn
ftRole
           : unset
           : 501030b8-028a-be5c-6794-0b7bee827557
quid
id
            : 0
issues
lcOwn
           : local
           : 2022-04-21T17:16:06.572+05:30
modTs
monPolDn
           : uni/tn-692673613-VSPAN/monepg-test
           : VM3
name
nameAlias
           :
os
           : vm-vm-1071
rn
           : poweredOn
state
status
template
           : no
           : virt
type
uuid
           : 4210b04b-32f3-b4e3-25b4-fe73cd3be0ca
```

2. Command "moquery -c compRsHv | grep 'vm-1071""

This command gives information about the host where VM is being hosted. In this example VM is located on host-347

```
apic2# moquery -c compRsHv | grep vm-1071
dn : comp/prov-VMware/ctrlr-[FAB4-AVE]-vcenter/vm-vm-1071/rshv-[comp/prov-VMware/ctrlr-[FAB4-/
```

3. Command "moquery -c compHv -f 'comp.Hv.oid=="host-1068"""

This command gives details about the host

```
apic2# moquery -c compHv -f 'comp.Hv.oid=="host-1068"'
Total Objects shown: 1
# comp.Hv
                    : host-1068
oid
availAdminSt
                   : gray
avail0perSt
                   : gray
childAction
countUplink
                    : 0
descr
dn
                    : comp/prov-VMware/ctrlr-[FAB4-AVE]-vcenter/hv-host-1068
enteringMaintenance : no
                    : b1e21bc1-9070-3846-b41f-c7a8c1212b35
guid
id
                    : 0
issues
lc0wn
                    : local
modTs
                   : 2022-04-21T14:23:26.654+05:30
monPolDn
                   : uni/infra/moninfra-default
name
                   : myhost
nameAlias
operIssues
                    :
os
                    : hv-host-1068
rn
state
                   : poweredOn
status
                   :
type
                   : hv
uuid
                    :
```

Next Steps Fault : F93337

1. Change the allocated memory for the VM on the Host.

2. If the memory is expected you can supress the fault by creating a stats collection policy to change the threshold value.

a. Under the VM's tenant, create a new Monitoring Policy.



b. Under your Monitoring policy, select stats collection policy.

	Stats Collection Policies		00
> O Quick Start ~ ∰ 692673613-VSPAN	Monitoring ALL U	Stats ALL	Ó
> Replication Profiles > Retworking	Granularity	Admin State	+ History Retention Period
> 🚔 Contracts	5 Minute	enabled	15 Minutes
> 🔛 Protocol	15 Minute 1 Hour	enabled enabled	1 Day 1 Week
> 🔤 Troubleshooting	1 Day	erabled	10 Days
V 🖪 test	1 Week	enabled	none
Stats Collection Policies	1 Month	enabled	none
Californe/Smart Californe/SNMP/Syslog	1 Quarter 1 Year	enabled enabled	none

 $\hat{a} \in f$ c. Click on edit icon beside Monitoring object dropdown, and check the Virtual Machine (comp.Vm) as a monitoring object. After Submitting, select the compVm object from Monitoring Object dropdown.

Ugg	Stats Collection	Policies			00
Ouick Start	Monitoring	State			
- - - - - - - - - - - - -	Object ALL	Type: ALL			0
> 🚞 Application Profiles	Add/Delete	Monitoring Object	9.0		+
> 🔤 Networking		a monitoring object	00	History Retention Period	
> 🚞 Contracts				15 Minutes	
🗸 🚞 Policies				1.0m	
> 🚞 Protocol			0	1.649	
> E Troubleshooting	Select	Monitoring Object		1 Week	
- Monitoring		VM Virtual Interface (comp.VNc) Virtual Machine (comp.Vini)		10 Days	
- 🖬 test		Access Client EPg (infra.CEPg)		none	
Stats Collection Policies		Access Function Provider (Infra.PEPg)		none	
		Host Protection Domain Policy (hostprot.Pol)			

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 \hat{a} €*f* d. Click on edit icon beside Stats type, then check on CPU Usage.

Stats Collection Policies				00
Monitoring Object Virtual Machine	(comp.Vm)	U Z Stats Type: Host	v /	0
				+
Granularity		Admin State	History Retention Period	Config Thresholds
	Edit State	Turne		
	Edit Stats	rype	0	
	Select or Un	select Stats Type		
			0	
	Select	Stats Type		
	×	cPU usage received rate		
		received dropped packets		
		received packets		
		transmitted rate		
		transmitted dropped packets		
		transmitted packets		
	Stats Collection Policies Monitoring Object: Granularity	Stats Collection Policies Monitoring Virtual Machine (comp.Vm) Granularity Edit Stats Select or Un Select	Stats Collection Policies Monitoring Virtual Machine (comp.Vm) Granularity Admin State Cranularity Admin State Edit Stats Type Select or Unselect Stats Type Select or Unselect Stats Type CPU usage neceived nate neceived	Statis Collection Policies Monitoring Object: Vinual Machine (comp.Vm) State Hist Granularity Admin State History Retention Period Edit Stats Type Select or Unselect Stats Type Select Stats Type Select Stats Type Of OPU usage OPU usage Image: Ima

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e. From the stats type Dropdown click select host, click on the + sign and enter your Granularity, Admin state and History Rentention Period and then click on update.

Carolina in Inter	Stats Collection Policies			00
> O Quick Start	Monitoring	State		
~ 🛄 692673613-VSPAN	Object: Wrhuel Machine	(comp.Vm) V Type: Host	~ /	0
> 🔤 Application Profiles				會 +
> 🚞 Networking	Granularity	Admin State	History Retention Period	Config Thresholds
> 🚞 Contracts	15 Minutes	 Inherited 	↓ [inherited	1
V E Policies			and Consult	
> 🚞 Protocol				
> E Troubleshooting				
Monitoring				
v 📴 test				
Stats Collection Policies				

f. Click on the + Sign under config threshold and add "memory usage maximum value" as property.

	Stats Collection Policies			00
O Quick Start	Monitoring	State		
e92673613-VSPAN e92673613-VSPAN e	Object: Vyhai Machine (comp	Type: Host		0
> 🚞 Application Profiles				
> 🚍 Networking	Granularity	Admin State	History Retention Period	Config Thresholds
> 🧮 Contracts	15 Minute	inherited	inherited	
V Policies		Thresholds for Collection 15 Minute		0
> 🚍 Protocol		Thresholds for Collection 15 Minute		0
> 🔤 Troubleshooting		Config Thresholds		
🗸 🚍 Monitoring				
V 🖪 test		Descents	Edb Theoretical	Choose a Property
Stats Collection Policies		Property	Edit Threshold	memory usage current value
Stats Export Policies		No Items Select Action	s have been found. Is to create a new item.	memory using minimum value
Californe/Smart Californe/SNMP/Syslog				menor (couper manners areas
Event Severity Assignment Policies				memory usage maximum value
E Fault Severity Assignment Policies				memory usage average value
Fault Lifecycle Policies				memory usage trend
> 🚞 Host Protection				CPU usage current value
> 🔤 NerFlow				CPU usage minimum value
				CPU usage maximum value
/ 50000				CPU usage average value
				CPU usage trend

g. Change the normal value to the threshold you would prefer.

00	Stats Collectio	n Policies						00
> O Quick Start	Monitoring Ve	ual Machine (come Vm)	Stats Ho	a		1		
· · · · · · · · · · · · · · · · · · ·	Object		Туре:					U
> Application Profiles	Create St	ats Threshold					0	
> Networking							-	Config Thresholds
Contracts								
V 🚞 Policies	memory us	age maximum value					0	9
> 🧰 Protocol		Name of Malance	LA.					0
> 🧮 Troubleshooting		reormai varue.						
Monitoring		Threshold Direction: Bot	Rsing Falling					
🖂 📴 test	Rsing	Thresholds to Config: 🕑 (+	
Stats Collection Policies		Crit	ical				ineshold	
E Stats Export Policies		Maj Min	or or					
Californe/Smart Californe/SNMP/Syslog		U War	ming					
Event Severity Assignment Policies	Falling	Thresholds to Config: 🕑 (
Fault Severity Assignment Policies			cal					
Fault Lifecycle Policies		Min	or or					
> E Host Protection		U War	ming					
> 🔤 NetFlow	Rising			Falling				
> 🖬 VMM		Set	Reset		Reset	Set		
> 🔤 Services	Critical			Warning				
	Major			Minor				
	Minor			Malor				
	Warning			Critical				

h. Apply the monitoring policy on the EPG

→ 💽 Quick Start ~ 🗮 692673613-VSPAN	Summary Policy Operational Stats Health Faults History
Application Profiles	Topology General Subject Labels EPG Labels
✓ y AP ✓ W Application (PGs)	O ± %.
> 💱 EPG2-VMM	Properties Label Match Criteria: AdeastDoe
CPG-1	Bridge Domain: BD-1 🗸
> 🧮 EPG Members	Resolved Bridge Domain: 692673613-VSPAN/80-1 Monitoring Policy: Nest
> in Static Ports	FHS Trust Control Policy: pelect a value
> 🔚 Fibre Channel (Paths)	Shutdown EPG: EPG Contract Master:
Contracts	Application EPOs

I. To confirm if the policy is applied on the VM run "moquery -c compVm -f 'comp.Vm.oid = "vm-<vm-id>"'"

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Fault : F93241

```
"Code" : "F93241",
"Description" : "TCA: CPU usage average value(compHostStats15min:cpuUsageAvg) value 100% raised above th
"Dn" : "comp/prov-VMware/ctrlr-[FAB4-AVE]-vcenter/vm-vm-1071/fault-F93241"
```

This specific fault is raised when VM host is consuming CPU more than the threshold. The APIC monitors these hosts via VCenter. Comp:HostStats15min is a class that represents the most current statistics for host in a 15 minute sampling interval. This class updates every 5 minutes.

Quick Start to Address Fault : F93241

1. Command ''moquery -d 'comp/prov-VMware/ctrlr-[<DVS>]-<VCenter>/vm-vm-<VM id from the fault's DN>'''

This command gives information about the affected VM

```
# comp.Vm
oid
           : vm-1071
cfgdOs : Ubuntu Linux (64-bit)
childAction :
descr
dn
           : comp/prov-VMware/ctrlr-[FAB4-AVE]-vcenter/vm-vm-1071
ftRole
           : unset
           : 501030b8-028a-be5c-6794-0b7bee827557
guid
id
           : 0
issues
           : local
lcOwn
           : 2022-04-21T17:16:06.572+05:30
modTs
monPolDn
           : uni/tn-692673613-VSPAN/monepg-test
name
           : VM3
nameAlias
           :
os
           : vm-vm-1071
rn
state
          : poweredOn
status
template
           : no
type
           : virt
           : 4210b04b-32f3-b4e3-25b4-fe73cd3be0ca
uuid
```

2. Command "moquery -c compRsHv | grep 'vm-1071""

This command gives information about the host where VM is being hosted. In this example VM is located on host-347

```
apic2# moquery -c compRsHv | grep vm-1071
dn : comp/prov-VMware/ctrlr-[FAB4-AVE]-vcenter/vm-vm-1071/rshv-[comp/prov-VMware/ctrlr-[FAB4-/
```

3. Command "moquery -c compHv -f 'comp.Hv.oid=="host-1068"""

This command gives details about the host

```
apic2# moquery -c compHv -f 'comp.Hv.oid=="host-1068"'
Total Objects shown: 1
# comp.Hv
                    : host-1068
oid
availAdminSt
                   : gray
avail0perSt
                   : gray
childAction
countUplink
                    : 0
descr
dn
                    : comp/prov-VMware/ctrlr-[FAB4-AVE]-vcenter/hv-host-1068
enteringMaintenance : no
                    : b1e21bc1-9070-3846-b41f-c7a8c1212b35
guid
id
                    : 0
issues
lc0wn
                    : local
modTs
                   : 2022-04-21T14:23:26.654+05:30
monPolDn
                   : uni/infra/moninfra-default
name
                   : myhost
nameAlias
operIssues
                    :
os
                    : hv-host-1068
rn
state
                   : poweredOn
status
                   :
type
                   : hv
uuid
                    :
```

Next Steps Fault : F93241

1. Upgrade the allocated CPU for the VM on the Host.

2. If the CPU is expected you can supress the fault by creating a stats collection policy to change the threshold value.

a. Under the VM's tenant, create a new Monitoring Policy.



b. Under your Monitoring policy, select stats collection policy.

UUUU	Stats Collection Policies		00
> O Quick Start ~ ∰ 692673613-VSPAN	Monitoring ALL V I	Stats ALL	Ó
> 🚔 Application Profiles > 🚍 Networking	Granularity	Artivio State	+ History Betertion Pariod
> E Contracts	5 Minute	enabled	15 Minutes
> Protocol	15 Minute	enabled	1 Day
> 🚞 Troubleshooting	1 Hour	enabled	1 Week
Monitoring	1 Day 1 Week	enabled enabled	10 Days
Stats Collection Policies	1 Month	enabled	none
Stats Export Policies	1 Quarter	enabled	none
Californe/smart Californe/shille/syslog	1 Year	enabled	none

 $\hat{a} \in f$ c. Click on edit icon beside Monitoring object dropdown, and check the Virtual Machine (comp.Vm) as a monitoring object. After Submitting, select the compVm object from Monitoring Object dropdown.

0.000	Stats Collection	roncies			00
. Co Queck Start	Monitoring ALL	Stats All			<u>^</u>
C B COZE73613-VSPAN	Object Pice	Type: The			0
> 🚞 Application Profiles	Add/Delete	Monitoring Object	0 0		+
> 🔤 Networking	71000 0101010	monitoring object	•••	History Retention Period	
> 🚍 Contracts				15 Minutes	
Policies				1.0m	
> 🔤 Protocol			Ó	1 Day	
> E Troubleshooting	Select	Monitoring Object		1 Week	
v 🚍 Monitoring		VM Virtual Interface (comp.VNc) Virtual Machine (comp.Vini)		10 Days	
v 🖬 seat		Access Client EPg (infra CEPg)		none	
State Collection Policies		Access Function Provider (Infra.PEPg)		0000	
		Host Protection Domain Policy (hostprot.Pol)		(aprile	

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 \hat{a} €*f* d. Click on edit icon beside Stats type, then check on CPU Usage.

0.90	Stats Collection Policies	1			00
> O• Quick Start					
~ 🌉 602673613-VSPAN	Monitoring Object Vinual Machine	(comp.Vm)	V / Stats Host	v /	0
) 🧱 Application Profiles					+
> 🧮 Networking	Granularity		Admin State	History Retention Period	Config Thresholds
> 🚞 Contracts		Edit State	Turne		
V Policies		Euli Stats	туре	0	
> 🧮 Protocol		Select or Un	select Stats Type		
> 🧱 Troubleshooting		_			
~ 🧮 Monitoring			A	0	
• 🖬 test		Select	Stats Type		
Stats Collection Policies			received rate		
Stats Export Policies			received dropped packets		
Californe/Smart Californe/SNMP/Syslog			received packets		
Event Sevenity Assignment Policies			transmitted rate		
E Fault Severity Assignment Policies			transmitted packets		

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e. From the stats type Dropdown click select host, click on the + sign and enter your Granularity, Admin state and History Rentention Period and then click on update.

031070010 100701	UUUU	Stats Collection Policies				0.0
Ouck Start						
~ 🕎 692673613-VSPAN		Object Virtual Machine (comp.Vm)		Stats Type: Host	v /	0
> 🔤 Application Profiles						第 +
> 🚞 Networking		Granularity		Admin State	History Retention Period	Config Thresholds
> 🔤 Contracts		15 Minutes	- U	inherited	↓ inherited	9
Policies		·				
> 🔤 Protocol					Update Cancel	
> 🚞 Troubleshooting						
~ 🔛 Montoring						
v 📴 test						
Stats Collection Policies						

f. Click on the + Sign under config threshold and add "CPU usage maximum value" as property.



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g. Change the normal value to the threshold you would prefer.

UUU Stats Collection Policies								00
> O+ Quick Start								
~ 🛄 692673613-VSPAN	Monitoring Virtual Machine (comp.Vm) V Stats Host Virtual Machine (comp.Vm)							0
> 🔛 Application Profiles	Create Stats Threshold							17 ÷
> 🖬 Networking	Granularity						-	Config Thresholds
> 🧮 Contracts	15 Minute							0
V 🚍 Policies	CPU usage maxim	um value						_
> 🚍 Protocol		Normal Value:	0					
> 🧮 Troubleshooting	Thread	ald Dimetion Di	Datas Datas					
Monitoring	Investigation conditions raining							
v 📴 test	Rising Thresholds to Config: 😳 🔲							
E Stats Collection Policies								
Stats Export Policies	Minor							
Californe/Smart Californe/SNMP/Syslog	Warning							
Event Severity Assignment Policies								
Fault Severity Assignment Policies	C Major							
Fault Lifecycle Policies	C Minor							
> E Host Protection	Rising			Falling				
> 🔤 NetFlow	Set		Report		Reset	Set		
> 🚍 VMM								
> 🔤 Services	Critical			Warning				
	Major			Minor				
	Minor			Major				
	Warning			Critical				

h. Apply the monitoring policy on the EPG

→ O- Ouick Start ~ 믉 692673613-VSPAN	Summary Policy Operational Stats Health Faults History
V Im Application Profiles	Topology General Subject Labels EPG Labels
	⊙ ⊙ ⊙ ⊙ ○
> St EFG2-VMM	Properties Label Match Otheria: AdeastOne
22 (PG-1 Domains (VMs and Bare-Metals)	Bridge Domain: ED-1 🗸 🖉
> 🧮 (PG Members > 🚍 Static Parts	Resolved Bridge Comain: 092013013-VSPMN80-1 Monitoring Policy: Test
Static Leafs	FHS Trust Control Policy: pelicit a value
> 🔤 Fibre Channel (Paths)	EPG Contract Master
E Static Endersity	Application LPGs

I. To confirm if the policy is applied on the VM run "moquery -c compVm -f 'comp.Vm.oid = "vm-<vm-id>"'"

```
apic1# moquery -c compVm -f 'comp.Vm.oid == "vm-1071"' | grep monPolDn
monPolDn : uni/tn-692673613-VSPAN/monepg-test <== Monitoring Policy test has been applied</pre>
```

Fault : F381328

"Code" : "F381328", "Description" : "TCA: CRC Align Errors current value(eqptIngrErrPkts5min:crcLast) value 50% raised above "Dn" : "topology/<pod>/<node>/sys/phys-<[interface]>/fault-F381328"

This specific fault is raised when CRC errors on an interface exceeds the threshold. There are two common types of CRC errors seen - FCS errors and CRC Stomped errors. CRC errors are propagated due to a cut-through switched path and are the result of initial FCS errors. Since ACI follows cut-through switching these frames end up traversing the ACI fabric and we see stomp CRC errors along the path, this does not mean that all the interfaces with CRC errors are faults. Recommendation is to identify the souce of CRC and fix the problematic SFP/Port/Fibre.

Quick Start to Address Fault : F381328

1. Dump the highest number interfaces with CRC in fabric

<pre>moquery -c rmonEtherStats -f 'rmon.EtherStats.cRCAlignErrors>="1"</pre>	' egrep "dn cRCAlignErrors" egrep -
topology/pod-1/node-103/sys/phys-[eth1/50]/dbgEtherStats	399158
<pre>topology/pod-1/node-101/sys/phys-[eth1/51]/dbgEtherStats</pre>	399158
topology/pod-1/node-1001/sys/phys-[eth2/24]/dbgEtherStats	399158

2. Dump the highest number of FCS in the fabric

moquery -c rmonDot3Stats -f 'rmon.Dot3Stats.fCSErrors>="1"' | egrep "dn|fCSErrors" | egrep -o "\S+\$" |

Next Steps Fault : F381328

1. If there are FCS errors in the fabric address those errors. These errors typically indicate layer 1 issues.

2. If there are CRC stomp errors on front pannel port, then check the connected device on the port and identify why stomps are coming from that device.

Python Script for fault : F381328

This entire process can also be automated using python script. Please refer <u>https://www.cisco.com/c/en/us/support/docs/cloud-systems-management/application-policy-infrastructure-controller-apic/217577-how-to-use-fcs-and-crc-troubleshooting-s.html</u>

Fault : F450296

```
"Code" : "F450296",
"Description" : "TCA: Multicast usage current value(eqptcapacityMcastEntry5min:perLast) value 91% raised
"Dn" : "sys/eqptcapacity/fault-F450296"
```

This specific fault is raised when number of multicast entries exceeds the threshold.

Quick Start to Address Fault : F450296

1. Command "show platform internal hal health-stats asic-unit all"

module-1# show platform internal hal health-stats asic-unit all |Sandbox_ID: 0 Asic Bitmap: 0x0 |-----L2 stats: ========= : 1979 bds: : 3500 max_bds: external_bds: : 0 vsan_bds: : 0 legacy_bds: : 0 regular_bds: : 0 regular_bds: control_bds: : 0 : 1976 fds : 3500 max_fds fd_vlans : 0 fd_vxlans : 0 vlans : 3955 max vlans : 3960 ax vIans vlan_xlates max vlan_xlates : 6739 : 32768 ports : 52 : 47 pcs hifs : 0 nif_pcs : 0 nif_pcs: 0l2_local_host_entries: 1979max_l2_local_host_entries: 32768 12_local_host_entries_norm : 6 l2_total_host_entries: 1979max_l2_total_host_entries: 65536l2_total_host_entries_norm: 3 L3 stats: ========= 13_v4_local_ep_entries: 3953max_13_v4_local_ep_entries: 32768 13_v4_local_ep_entries_norm : 12 13_v6_local_ep_entries : 1976
max_13_v6_local_ep_entries : 24576 13_v6_local_ep_entries_norm : 8 13_v4_total_ep_entries: 3953max_13_v4_total_ep_entries: 6553613_v4_total_ep_entries_norm: 6 13_v6_total_ep_entries : 1976
max_13_v6_total_ep_entries : 49152 13_v6_total_ep_entries_norm : 4

max 12 x4 22 antriac		09204
	•	96304
total_13_v4_32_entries	:	35590
<pre>13_v4_total_ep_entries</pre>	:	3953
<pre>13_v4_host_uc_entries</pre>	:	37
13 v4 host mc entries	:	31600
total 13 v / 32 entries norm		36
12×12	:	40152
max_13_V6_128_entries	•	49152
total_13_v6_128_entries	:	3952
<pre>13_v6_total_ep_entries</pre>	:	1976
<pre>13_v6_host_uc_entries</pre>	:	1976
13 v6 host mc entries	:	0
total 13 v6 128 entries norm		8
mov 12 lam entries	:	20012
max_13_1pm_entries	·	38912
13_1pm_entries	:	9384
<pre>13_v4_lpm_entries</pre>	:	3940
<pre>13_v6_lpm_entries</pre>	:	5444
13 lpm entries norm	:	31
max 13 lpm tcam entries		4096
max_12_v6_wide lpm tcom entrie	·	1000
<pre>iiiax_i5_v0_wide_ipiii_ccaiii_effciie iaa_i</pre>	5	2600
13_1pm_tcam_entries	:	2689
13_v4_lpm_tcam_entries	:	2557
<pre>13_v6_lpm_tcam_entries</pre>	:	132
13 v6 wide lpm tcam entries	:	0
13 lpm tcam entries norm	•	65
13 v6 lpm tcam entries porm	:	0
12 heat we entries	:	0
13_nost_uc_entries	·	2013
13_v4_host_uc_entries	:	37
<pre>13_v6_host_uc_entries</pre>	:	1976
<pre>max_uc_ecmp_entries</pre>	:	32768
uc ecmp entries	:	1
uc ecmp entries norm		-
uc_ecilip_entries_norm	:	0 0100
max_uc_adj_entries	:	8192
uc_adj_entries	:	1033
uc_adj_entries_norm	:	12
vrfs	:	1806
infra vrfs	:	0
tenant vrfs		1804
rtd ifc	:	2
	•	2
SUD_1TS	:	2
svi_its	:	1978
Mcast stats:		
==========		
mcast count	•	31616 <<<<<<
max meast count	:	32768
	·	52700
Policy stats:		
==========		
policy count	:	127116
max policy count	:	131072
policy of cam count		2020
max policy of come count	•	. 0100
		. 0192
policy_label_count		: 0
<pre>max_policy_label_count</pre>		: 0
Dci Stats:		
===========		
vlan xlate entries		0
vian_Aidce_cherics	:	0
vian_xiale_entries_tCam	·	U Q
<pre>max_vlan_xlate_entries</pre>	:	Ø
<pre>sclass_xlate_entries</pre>	:	0
<pre>sclass_xlate_entries_tcam</pre>	:	0

Next Steps Fault : F450296

1. Consider moving some of multicast traffic to other Leafs.

2. Explore various forwarding scale profile to increase multicast scale. refer link <u>https://www.cisco.com/c/en/us/td/docs/switches/datacenter/aci/apic/sw/all/forwarding-scale-profiles/cisco-apic-forwarding-scale-profiles-523.html</u>