

由于RCM已启动重新加载，RCMChassisReload故障排除

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简介

本文档介绍如何调查 RCMChassisReload 陷阱由于 RCM Initiated Reload 在StarOS中。

背景信息

冗余配置管理器(RCM)是思科专有节点/网络功能(NF)，可提供基于StarOS的用户平面(UP)/用户平面功能(UPF)的冗余。RCM提供N:M UP/UPF冗余，其中“N”是活动UP/UPF的数量且小于10，而“M”是冗余组中的备用UP/UPF的数量。RCM监控其UP/UPF的故障并启动切换到备用UP/UPF。

UP中出现问题导致发生计划外切换，无需手动干预即可重新启动。当发生计划外切换时，双向转发检测(BFD)监控器Pod检测到UP已关闭并触发RCM控制器启动切换机制。RCM控制器选择备用UP和冗余管理器Pod以将配置和检查点推送到新UP。

手动切换可以从RCM启动，使用 `rcm switchover source` 命令。

RCMChassisReload陷阱

此 RCMChassisReload 陷阱由于 RCM Initiated Reload 在StarOS中报告。

当BFD故障和手动命令执行导致重新加载时，将会报告类似的日志。

由于BFD故障而导致的日志：

```
2022-Nov-03+12:35:28.682 [snmp 22002 info] [1/0/6083 <vpnmgr:5> trap_api.c:11832] [software internal system syslog] Internal trap notification 1427 (RCMChassisReload) RCM Chassis Reload Reason: (2) RCM Initiated Reload
```

```
2022-Nov-03+12:35:28.682 [srp 84201 info] [1/0/6083 <vpnmgr:5> vpnmgr_rcm.c:1492] [context: RCM, contextID: 5] [software internal system syslog] RCM: Attempting to reload UPF.
```

```
2022-Nov-03+12:35:28.735 [snmp 22002 info] [1/0/5271 <cspctrl:0> trap_api.c:17907] [software internal system syslog] Internal trap notification 1521 (CseShutDownNotify) Shutdown reason "Reload chassis requested by CLI command"
```

由于手动切换命令而导致的日志：

```
2022-Nov-03+12:41:04.984 [snmp 22002 info] [1/0/6073 <vpnmgr:5> trap_api.c:11832] [software
```

internal system syslog] Internal trap notification 1427 (RCMChassisReload) RCM Chassis Reload

Reason: (2) RCM Initiated Reload

2022-Nov-03+12:41:04.984 [srp 84201 info] [1/0/6073 <vpnmgr:5> vpnmgr_rcm.c:1492] [context: RCM, contextID: 5] [software internal system syslog] RCM: Attempting to reload UPF.

2022-Nov-03+12:41:05.014 [snmp 22002 info] [1/0/5265 <cspctrl:0> trap_api.c:17907] [software internal system syslog] Internal trap notification 1521 (CseShutDownNotify) Shutdown reason "Reload chassis requested by CLI command"

数据收集和分析

RCM切换如所示 `rcm show-statistics switchover` 命令输出.

在本例中，最新的切换位置为 15:28:14 on Nov 3

was due to BGP failover on the UP/UPF, while prior switchover was at 15:14:23 on Nov 3 due to manual command switchover from RCM.

```
[unknown] rcm# rcm show-statistics switchover
Thu Nov 3 15:39:10.486 UTC+00:00
message :
{
"stats_history": [
{
"status": "Success",
"started": "Nov 3 15:28:12.315",
"ended": "Nov 3 15:28:14.107",
"switchoverreason": "BGP Failure",
"source_endpoint": "192.168.60.3",
"destination_endpoint": "192.168.60.4"
},
{
"status": "Success",
"started": "Nov 3 15:13:48.808",
"ended": "Nov 3 15:14:23.670",
"switchoverreason": "Planned Switchover",
"source_endpoint": "192.168.60.4",
"destination_endpoint": "192.168.60.3"
},
{

```

万一出现以下情况 RCMChassisReload 未从日志中识别，然后收集数据：

- 收集 `show support details` 从主用和备用UP/UPF。
- 从活动和备用UP/UPF收集系统日志信息。
- 收集 `rcm support-summary` 和RCM中的系统日志信息。
- 检查RCM Pod事件：检验Kubernetes Pod

```
ubuntu@CUPS-RCM-01:~$ kubectl get pods -n rcm
NAME READY STATUS RESTARTS AGE
documentation-65d698cfbb-l94lg 1/1 Running 0 161d
etcd-rcm-etcd-cluster-0 2/2 Running 0 161d
grafana-dashboard-etcd-rcm-65bd789-t57pq 1/1 Running 0 161d
ops-center-rcm-ops-center-6f946946c7-wlpnq 5/5 Running 0 161d
prometheus-rules-etcd-5c5cff47c6-vlizr7 1/1 Running 0 161d
rcm-bfdmgr-7fd47466c4-xm99h 1/1 Running 0 161d
rcm-checkpointmgr-0 1/1 Running 0 161d
rcm-checkpointmgr-1 1/1 Running 0 161d
rcm-checkpointmgr-2 1/1 Running 0 161d
rcm-checkpointmgr-3 1/1 Running 0 161d
rcm-configmgr-569f6d89c5-g7ztg 1/1 Running 0 161d
rcm-controller-775c4cc7bb-q96m6 1/1 Running 0 161d
smart-agent-rcm-ops-center-5c475b6bd-2plc6 1/1 Running 1 161d
```

收集 describe 检查点管理器的命令

```
ubuntu@CUPS-RCM-01:~$ kubectl describe pod rcm-checkpointmgr-0 -n rcm
Name: rcm-checkpointmgr-0
Namespace: rcm
Priority: 0
Node: rcm/10.10.1.1
Start Time: Wed, 01 Jun 2022 23:38:40 +0000
Labels: component=rcm-checkpointmgr
controller-revision-hash=rcm-checkpointmgr-566cdd886f
release=rcm-rcm-chkptmgr
statefulset.kubernetes.io/pod-name=rcm-checkpointmgr-0
Annotations: cnf.projectcalico.org/containerID:
0deal5df9e41a9195d9827cdb257430bab3257bad3417281fb6c8f3d3ed146cc
cnf.projectcalico.org/podIP: 10.42.0.72/32
cnf.projectcalico.org/podIPs: 10.42.0.72/32
prometheus.io/port: 8081
prometheus.io/scrape: true
sidecar.istio.io/inject: false
Status: Running
IP: 10.10.0.72
IPs:
IP: 10.10.0.72
Controlled By: StatefulSet/rcm-checkpointmgr
Containers:
rcm-checkpointmgr:
Container ID: docker://b86826c43e191f0266a1489ef6f0398b21c1801d6a79e40093aed6e3c023ba4d
Image: dockerhub.cisco.com/smi-fuse-docker-internal/mobile-cnat-rcm/rcm-
chkptmgr/v21.27.x/rcm_chkptmgr:0.0.5-38a8de3
Image ID: docker://sha256:adc4013783f60f6413fa81eb2bf16a652fddcd8d164e469368c2587560e42bc8
Ports: 9900/TCP, 9300/TCP, 8080/TCP, 8081/TCP
Host Ports: 0/TCP, 0/TCP, 0/TCP, 0/TCP
Command:
/usr/local/bin/run-app
State: Running
Started: Wed, 01 Jun 2022 23:38:44 +0000
Ready: True
Restart Count: 0
Environment:
K8S_NAMESPACE: rcm
GODEBUG: madvdontneed=1
GOGC: 25
GOTRACEBACK: crash
SERVICE_NAME: rcm-checkpointmgr
DATACENTER_NAME: DC
CLUSTER_NAME: Local
APPLICATION_NAME: RCM
RCM_CHKPT_POD_IP: (v1:status.podIP)
RCM_CHKPT_POD_NAME: rcm-checkpointmgr-0 (v1:metadata.name)
INFRA_PROMETHEUS_PORT: 8081
Mounts:
/config/rcm-logging from rcm-logging-volume (ro)
/var/run/secrets/kubernetes.io/serviceaccount from kube-api-access-6828r (ro)
Conditions:
Type Status
Initialized True
Ready True
ContainersReady True
PodScheduled True
Volumes:
rcm-logging-volume:
Type: ConfigMap (a volume populated by a ConfigMap)
Name: infra-logging-conf
Optional: false
```

```
kube-api-access-6828r:
Type: Projected (a volume that contains injected data from multiple sources)
TokenExpirationSeconds: 3607
ConfigMapName: kube-root-ca.crt
ConfigMapOptional: <nil>
DownwardAPI: true
QoS Class: BestEffort
Node-Selectors: nodeType=RCM
Tolerations: node.kubernetes.io/not-ready:NoExecute op=Exists for 300s
node.kubernetes.io/unreachable:NoExecute op=Exists for 300s
Events: <none>
```

检查Pod的当前日志

```
ubuntu@CUPS-RCM-01:~$ kubectl logs rcm-checkpointmgr-0 -n rcm | more
2022/11/09 20:19:01.554 rcm-checkpointmgr [DEBUG] [TopologyData.go:295]
[infra.topology.core] Setting state of the application as APP_STARTED
2022/11/09 20:19:01.558 rcm-checkpointmgr [DEBUG] [TopologyData.go:295]
[infra.topology.core] Setting state of the application as APP_STARTED
```

如果Pod崩溃，可以使用收集来自上一个Pod的日志 **-p** 选项

```
ubuntu@CUPS-RCM-01:~$ kubectl logs
```

相关信息

[RCM配置和管理指南](#)

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