Probleemoplossing voor SMF CNDP "netwerk-ontvanger-fout" op eno6/bd0-interfaces

Inhoud

Inleiding

Dit document beschrijft hoe u de compute en leaf switch kunt identificeren voor een specifieke Session Management Functie (SMF) Cloud Native Implementation Platform (CNDP) en hoe u de "network-host-error"-waarschuwing kunt oplossen die in Common Execution Environment (CEE) wordt gemeld.

Probleem

De "netwerk-ontvangen-fout"waarschuwingen worden gemeld op CEE Opcenter Rack2.

```
[lab0200-smf/labceed22] cee# show alerts active summary
NAME UID SEVERITY STARTS AT SOURCE SUMMARY
------------------------------------------------------------------------------------------------
-------------------------------------------------
network-receive-error 998c77d6a6a0 major 10-26T00:10:31 lab0200-smf-mas Network interface "bd0"
showing receive errors on hostname lab0200-s...
network-receive-error ea4217bf9d9e major 10-26T00:10:31 lab0200-smf-mas Network interface "bd0"
showing receive errors on hostname lab0200-s...
network-receive-error 97fad40d2a58 major 10-26T00:10:31 lab0200-smf-mas Network interface "eno6"
showing receive errors on hostname lab0200-...
network-receive-error b79540eb4e78 major 10-26T00:10:31 lab0200-smf-mas Network interface "eno6"
showing receive errors on hostname lab0200-...
network-receive-error e3d163ff4012 major 10-26T00:10:01 lab0200-smf-mas Network interface "bd0"
showing receive errors on hostname lab0200-s...
network-receive-error 12a7b5a5c5d5 major 10-26T00:10:01 lab0200-smf-mas Network interface "eno6"
showing receive errors on hostname lab0200-...
```

Voor de beschrijving van de waarschuwing raadpleegt u de Infrastructuurhandleiding van de Ultra Cloud Subscriber Microservices.

```
Alert: network-receive-errors
Annotations:
Type: Communications Alarm
Summary: Network interface "{{ $labels.device }}" showing receive errors on hostname {{
$labels.hostname }}"
Expression:
|
rate(node_network_receive_errs_total{device!~"veth.+"}[2m]) > 0
For: 2m
Labels:
Severity: major
```

Identificeer de bron van de meldingen

Log in op **CEE labceed22**, controleer de "netwerk-ontvangen-fout" details gerapporteerd op de bd0 en eno6 interfaces om de node en de pod te identificeren.

```
[lab0200-smf/labceed22] cee# show alerts active summary
NAME                   UID           SEVERITY  STARTS AT       SOURCE                 SUMMARY

-------------------------------------------------------------------------------------------------
-----------------------------------------------------
network-receive-error  3b6a0a7ce1a8  major     10-26T21:17:01  lab0200-smf-mas  Network
interface "bd0" showing receive errors on hostname tpc...
network-receive-error  15abab75c8fc  major     10-26T21:17:01  lab0200-smf-mas  Network
interface "eno6" showing receive errors on hostname tp...
```

Voer **tonen waarschuwingen actieve details netwerk-ontvanger-fout <UID>** om details van de waarschuwing te trekken.

In het voorbeeld is de bron van beide waarschuwingen knooppunt lab0200-smf-primair-1 pod knooppunt-exporteur-47xmm.

```
[lab0200-smf/labceed22] cee# show alerts active detail network-receive-error  3b6a0a7ce1a8
alerts active detail network-receive-error 3b6a0a7ce1a8
 severity    major
 type        "Communications Alarm"
 startsAt    2021-10-26T21:17:01.913Z
 source      lab0200-smf-primary-1
 summary     "Network interface \"bd0\" showing receive errors on hostname lab0200-smf-primary-
1\""
 labels      [ "alertname: network-receive-errors" "cluster: lab0200-smf_cee-labceed22"
"component: node-exporter" "controller_revision_hash: 75c4cb979f" "device: bd0" "hostname:
lab0200-smf-primary-1" "instance: 10.192.1.42:9100" "job: kubernetes-pods" "monitor: prometheus"
"namespace: cee-labceed22" "pod: node-exporter-47xmm" "pod_template_generation: 1" "replica:
lab0200-smf_cee-labceed22" "severity: major" ]
 annotations [ "summary: Network interface \"bd0\" showing receive errors on hostname lab0200-
smf-primary-1\"" "type: Communications Alarm" ]

[lab0200-smf/labceed22] cee# show alerts active detail network-receive-error 15abab75c8fc
alerts active detail network-receive-error 15abab75c8fc
 severity    major
 type        "Communications Alarm"
 startsAt    2021-10-26T21:17:01.913Z
 source      lab0200-smf-primary-1
 summary     "Network interface \"eno6\" showing receive errors on hostname lab0200-smf-primary-
1\""
```

```
 labels      [ "alertname: network-receive-errors" "cluster: lab0200-smf_cee-labceed22"
"component: node-exporter" "controller_revision_hash: 75c4cb979f" "device: eno6" "hostname:
lab0200-smf-primary-1" "instance: 10.192.1.42:9100" "job: kubernetes-pods" "monitor: prometheus"
"namespace: cee-labceed22" "pod: node-exporter-47xmm" "pod_template_generation: 1" "replica:
lab0200-smf_cee-labceed22" "severity: major" ]
 annotations [ "summary: Network interface \"eno6\" showing receive errors on hostname lab0200-
smf-primary-1\"" "type: Communications Alarm" ]
```

Status valideren van knooppunt, poortadapter

Validering van knooppunt en pod van primaire VIP

Log in K8s Primaire VIP van de Rack2 om de status van de bronknooppunt en -pod te valideren.

In het voorbeeld, allebei zijn in een goede staat: Klaar voor gebruik.

```
cloud-user@lab0200-smf-primary-1:~$ kubectl get nodes
NAME                         STATUS   ROLES                  AGE    VERSION
lab0200-smf-primary-1   Ready    control-plane          105d   v1.21.0
lab0200-smf-primary-2   Ready    control-plane   105d   v1.21.0
lab0200-smf-primary-3   Ready    control-plane   105d   v1.21.0
lab0200-smf-worker-1   Ready    <none>                 105d   v1.21.0
lab0200-smf-worker-2   Ready    <none>                 105d   v1.21.0
lab0200-smf-worker-3   Ready    <none>                 105d   v1.21.0
lab0200-smf-worker-4   Ready    <none>                 105d   v1.21.0
lab0200-smf-worker-5   Ready    <none>                 105d   v1.21.0

cloud-user@lab0200-smf-primary-1:~$ kubectl get pods -A -o wide | grep node-exporter--47xmm
cee-labceed22     node-exporter-47xmm                                       1/1     Running   0
        18d    10.192.1.44       lab0200-smf-primary-1   <none>           <none>
```

Poortvalidaties van K8s Primary VIP

Valideren van bd0- en eno6-interfaces zijn UP met **ip-adres | grep eno6** en **ip-adres | Gem. bd0**.

> **Opmerking:** Wanneer het filter voor bd0 is toegepast, wordt eno6 in het uitvoerdocument weergegeven. De reden hiervoor is dat eno5 en eno6 zijn geconfigureerd als gebonden interfaces onder bd0, wat kan worden gevalideerd in de SMI Cluster-implementator.

```
cloud-user@lab0200-smf-primary-1:~$ ip addr | grep eno6
3: eno6: <BROADCAST,MULTICAST,SECONDARY,UP,LOWER_UP> mtu 1500 qdisc mq primary bd0 state UP
group default qlen 1000

cloud-user@lab0200-smf-primary-1:~$ ip addr | grep bd0
2: eno5: <BROADCAST,MULTICAST,SECONDARY,UP,LOWER_UP> mtu 1500 qdisc mq primary bd0 state UP
group default qlen 1000
3: eno6: <BROADCAST,MULTICAST,SECONDARY,UP,LOWER_UP> mtu 1500 qdisc mq primary bd0 state UP
group default qlen 1000
12: bd0: <BROADCAST,MULTICAST,PRIMARY,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default
qlen 1000
13: vlan111@bd0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default
qlen 1000
14: vlan112@bd0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc noqueue state UP group default
qlen 1000
182: cali7a166bd093d@if4: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1440 qdisc noqueue state UP
```

```
group default
```

Poortvalidaties van SMI Cluster-implementator

Log in op de **VIP van Cluster Manager** en vervolgens toegang tot het Operations (OPS) Center op-center-smi-cluster-implementator.

```
cloud-user@lab-deployer-cm-primary:~$ kubectl get svc -n smi-cm
NAME                                          TYPE        CLUSTER-IP       EXTERNAL-IP
PORT(S)                                                   AGE
cluster-files-offline-smi-cluster-deployer    ClusterIP   10.102.53.184    <none>
8080/TCP                                                  110d
iso-host-cluster-files-smi-cluster-deployer   ClusterIP   10.102.38.70     172.16.1.102
80/TCP                                                    110d
iso-host-ops-center-smi-cluster-deployer      ClusterIP   10.102.83.54     172.16.1.102
3001/TCP                                                  110d
netconf-ops-center-smi-cluster-deployer       ClusterIP   10.102.196.125   10.241.206.65
3022/TCP,22/TCP                                           110d
ops-center-smi-cluster-deployer               ClusterIP   10.102.12.170    <none>
8008/TCP,2024/TCP,2022/TCP,7681/TCP,3000/TCP,3001/TCP   110d
squid-proxy-node-port                         NodePort    10.102.72.168    <none>
3128:32572/TCP                                            110d

cloud-user@lab-deployer-cm-primary:~$ ssh -p 2024 admin@10.102.12.170
admin@10.102.12.170's password:
     Welcome to the Cisco SMI Cluster Deployer on lab-deployer-cm-primary
     Copyright © 2016-2020, Cisco Systems, Inc.
     All rights reserved.
admin connected from 172.16.1.100 using ssh on ops-center-smi-cluster-deployer-5cdc5f94db-bnxqt
[lab-deployer-cm-primary] SMI Cluster Deployer#
```

Controleer de cluster, de defaults, interfaces en parametermodus voor de node. In het voorbeeld **lab0200-smf.**

```
[lab-deployer-cm-primary] SMI Cluster Deployer#  show running-config clusters
clusters lab0200-smf
 environment lab0200-smf-deployer_1
…
 node-defaults initial-boot netplan ethernets eno5
 dhcp4 false
 dhcp6 false
 exit
 node-defaults initial-boot netplan ethernets eno6
 dhcp4 false
 dhcp6 false
 exit
 node-defaults initial-boot netplan ethernets enp216s0f0
 dhcp4 false
 dhcp6 false
 exit
 node-defaults initial-boot netplan ethernets enp216s0f1
 dhcp4 false
 dhcp6 false
 exit
 node-defaults initial-boot netplan ethernets enp94s0f0
 dhcp4 false
 dhcp6 false
 exit
```

```
 node-defaults initial-boot netplan ethernets enp94s0f1
 dhcp4 false
 dhcp6 false
 exit
node-defaults initial-boot netplan bonds bd0
 dhcp4      false
 dhcp6      false
 optional   true
 interfaces [ eno5 eno6 ]
 parameters mode      active-backup
 parameters mii-monitor-interval 100
 parameters fail-over-mac-policy active
 exit
```

In de Primaire VIP valideren fouten en/of dalingen op interfaces bd0 en eno6.

Wanneer beide interfaces een druppel hebben, moet de UCS of Leaf switch hardware worden gecontroleerd op eventuele hardwareproblemen.

```
cloud-user@lab0200-smf-primary-1:~$  ifconfig bd0
bd0: flags=5187<UP,BROADCAST,RUNNING,PRIMARY,MULTICAST>  mtu 1500
       inet6 fe80::8e94:1fff:fef6:53cd  prefixlen 64  scopeid 0x20<link>
       ether 8c:94:1f:f6:53:cd  txqueuelen 1000  (Ethernet)
       RX packets 47035763777  bytes 19038286946282 (19.0 TB)
       RX errors 49541  dropped 845484  overruns 0  frame 49541
       TX packets 53797663096  bytes 32320571418654 (32.3 TB)
       TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

cloud-user@lab0200-smf-primary-1:~$  ifconfig eno6
eno6: flags=6211<UP,BROADCAST,RUNNING,SECONDARY,MULTICAST>  mtu 1500
       ether 8c:94:1f:f6:53:cd  txqueuelen 1000  (Ethernet)
       RX packets 47035402290  bytes 19038274391478 (19.0 TB)
       RX errors 49541  dropped 845484  overruns 0  frame 49541
       TX packets 53797735337  bytes 32320609021235 (32.3 TB)
       TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

De UCS-server identificeren

UCS-servervalidatie vanuit SMI-clusterimplementator

Start **tonen in werking stellen-configuratieclusters <clusternaam>-knooppunten <nodenaam>** in de SMI Cluster-implementator om het CIMC-IP-adres van de UCS-server te achterhalen.

```
[lab-deployer-cm-primary] SMI Cluster Deployer# show running-config clusters lab0200-smf nodes
primary-1
clusters lab0200-smf
nodes primary-1
 maintenance  false
 host-profile cp-data-r2-sysctl
 k8s node-type       primary
 k8s ssh-ip          10.192.1.42
 k8s sshd-bind-to-ssh-ip true
 k8s node-ip         10.192.1.42
 k8s node-labels smi.cisco.com/node-type oam
 exit
 k8s node-labels smi.cisco.com/node-type-1 proto
 exit
```

```
 ucs-server cimc user admin
...
 ucs-server cimc ip-address 172.16.1.62
...
 exit
```

SSH in het CIMC IP-adres 172.16.1.62 via Active CM en valideer de servernaam.

In het voorbeeld is de servernaam LAB0200-Server8-02.

```
cloud-user@lab-deployer-cm-primary:~$ ssh admin@172.16.1.62
Warning: Permanently added '172.16.1.62' (RSA) to the list of known hosts.
admin@172.16.1.62's password:
LAB0200-Server8-02#
```

> **Opmerking:** Bevestig de naam van de server in de Customer Information Questionnaire (CIQ), indien de CIQ beschikbaar is.

De primaire VIP-poorten en UCS-netwerkinterfaces in kaart brengen

Controleer op primaire VIP de fysieke interfacenamen van eno6 met de opdracht **ls -la /sys/class/net**. Als **lscpi** wordt gebruikt om het eno6-apparaat te identificeren, moet poort **1d:00.1** worden gebruikt om **eno6** te identificeren.

```
cloud-user@lab0200-smf-primary-1:~$ ls -la /sys/class/net
total 0
drwxr-xr-x  2 root root    0 Oct 12 06:18 .
drwxr-xr-x 87 root root    0 Oct 12 06:18 ..
lrwxrwxrwx  1 root root    0 Oct 12 06:18 bd0 -> ../../devices/virtual/net/bd0
lrwxrwxrwx  1 root root    0 Oct 12 06:18 bd1 -> ../../devices/virtual/net/bd1
…
lrwxrwxrwx  1 root root    0 Oct 12 06:18 eno5 ->
../../devices/pci0000:17/0000:17:00.0/0000:18:00.0/0000:19:01.0/0000:1b:00.0/0000:1c:00.0/0000:1
d:00.0/net/eno5
lrwxrwxrwx  1 root root    0 Oct 12 06:18 eno6 ->
../../devices/pci0000:17/0000:17:00.0/0000:18:00.0/0000:19:01.0/0000:1b:00.0/0000:1c:00.0/0000:1
d:00.1/net/eno6
```

> **Opmerking:** De **lspci** toont informatie over alle apparaten op de UCS-server zoals MLOM, SLOM, PCI, enzovoort. De apparateninformatie kan worden gebruikt om met de namen van de interfaces in **ls -la/sys/class/net** beveloutput in kaart te brengen.

In het voorbeeld behoort poort 1d:0.1 tot de interface **MLOM** en **eno6**. De **eno5** is een 1d:00.0 MLOM poort.

```
cloud-user@lab0200-smf-primary-1:~$ lspci
……
1d:00.0 Ethernet controller: Cisco Systems Inc VIC Ethernet NIC (rev a2)
1d:00.1 Ethernet controller: Cisco Systems Inc VIC Ethernet NIC (rev a2)
3b:00.0 Ethernet controller: Intel Corporation Ethernet Controller 10G X550T (rev 01)
3b:00.1 Ethernet controller: Intel Corporation Ethernet Controller 10G X550T (rev 01)
```

```
5e:00.0 Ethernet controller: Intel Corporation Ethernet Controller XL710 for 40GbE QSFP+ (rev
02)
5e:00.1 Ethernet controller: Intel Corporation Ethernet Controller XL710 for 40GbE QSFP+ (rev
02)
d8:00.0 Ethernet controller: Intel Corporation Ethernet Controller XL710 for 40GbE QSFP+ (rev
02)
d8:00.1 Ethernet controller: Intel Corporation Ethernet Controller XL710 for 40GbE QSFP+ (rev
02)
```

In de CIMC GUI match met het MLOM MAC-adres op **ifconfig-**uitvoer van primaire VIP.

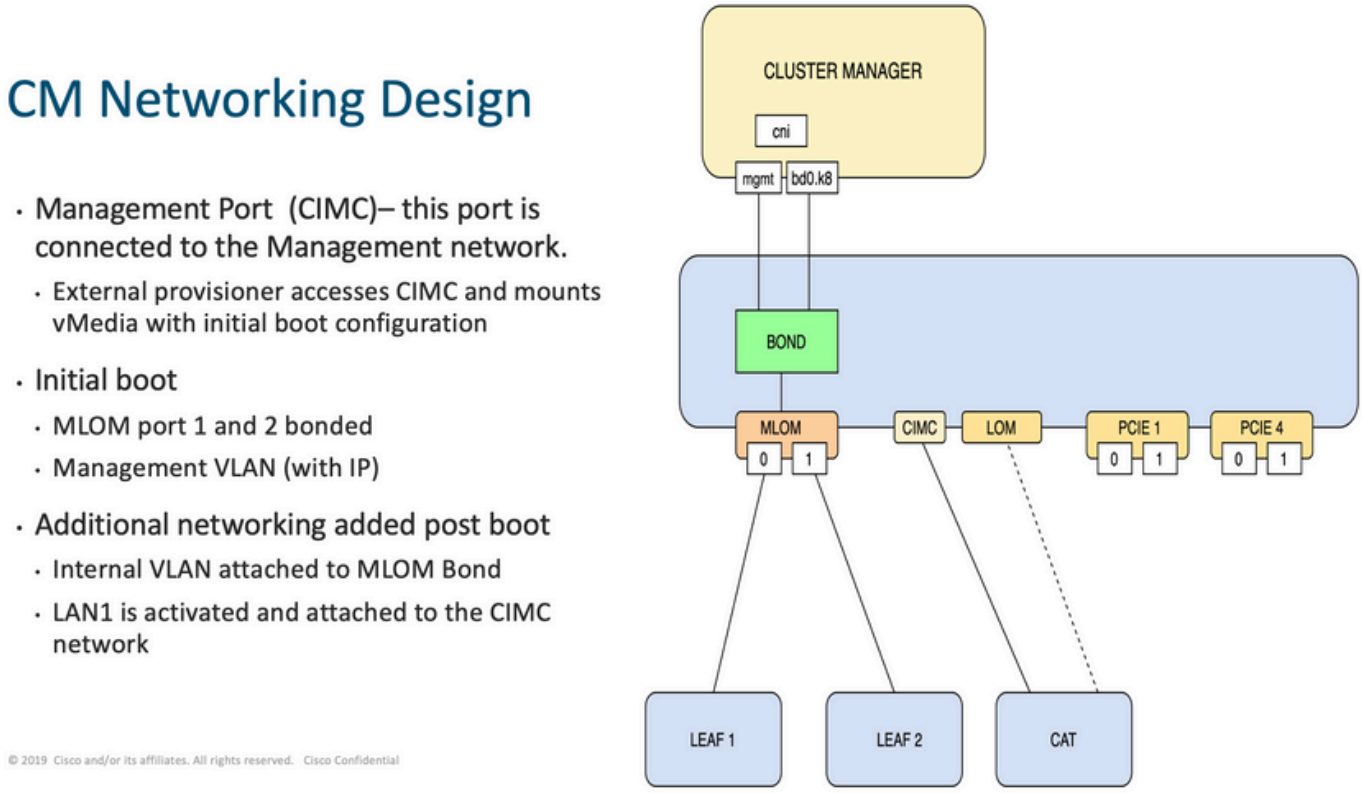
```
cloud-user@lab0200-smf-primary-1:~$  ifconfig bd0
bd0: flags=5187<UP,BROADCAST,RUNNING,PRIMARY,MULTICAST>  mtu 1500
       inet6 fe80::8e94:1fff:fef6:53cd  prefixlen 64  scopeid 0x20<link>
       ether 8c:94:1f:f6:53:cd  txqueuelen 1000  (Ethernet)
       RX packets 47035763777  bytes 19038286946282 (19.0 TB)
       RX errors 49541  dropped 845484  overruns 0  frame 49541
       TX packets 53797663096  bytes 32320571418654 (32.3 TB)
       TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0


cloud-user@lab0200-smf-primary-1:~$  ifconfig eno6
eno6: flags=6211<UP,BROADCAST,RUNNING,SECONDARY,MULTICAST>  mtu 1500
       ether 8c:94:1f:f6:53:cd  txqueuelen 1000  (Ethernet)
       RX packets 47035402290  bytes 19038274391478 (19.0 TB)
       RX errors 49541  dropped 845484  overruns 0  frame 49541
       TX packets 53797735337  bytes 32320609021235 (32.3 TB)
       TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

Identificeer de Switch

In het Cluster Manager-netwerk, zoals in de afbeelding wordt getoond, is het **MLOM (eno5/eno6)** verbonden met bladzijden 1 en 2.

> **Opmerking:** Valideer bladeren hostnames in CIQ, als de CIQ beschikbaar is.



Log in op zowel Leaves als begroet de naam van de server.

In het voorbeeld zijn de LAB0200-Server8-02 MLOM- en MLOM-interfaces verbonden met de interfaces **Eth1/49** op Leaf1 en Leaf2.

```
Leaf1# sh int description | inc LAB0200-Server8-02
Eth1/10       eth    40G     PCIE-01-2-LAB0200-Server8-02
Eth1/30       eth    40G     PCIE-02-2-LAB0200-Server8-02
Eth1/49       eth    40G     LAB0200-Server8-02 MLOM-P2
```

```
Leaf2# sh int description | inc LAB0200-Server8-02
Eth1/10       eth    40G     PCIE-01-1-LAB0200-Server8-02
Eth1/30       eth    40G     PCIE-02-1-LAB0200-Server8-02
Eth1/49       eth    40G     LAB0200-Server8-02 MLOM-P1
```

Oplossing

> **Belangrijk:** Ieder probleem heeft zijn eigen analyse nodig. Als er geen fouten worden gevonden aan de kant van Nexus, controleer dan de UCS-serverinterfaces op fouten.

In het scenario is het probleem gerelateerd aan de koppelingsfout op Leaf1 **int eth1/49** die is verbonden met LAB0200-Server8-02 MLOM eno6.

De UCS-server is gevalideerd en er is geen hardwareprobleem gevonden, MLOM en poorten waren in een goede staat.

Leaf1 liet TX Output fouten zien:

```
Leaf1# sh int Eth1/49
Ethernet1/49 is up
admin state is up, Dedicated Interface
 Hardware: 10000/40000/100000 Ethernet, address: e8eb.3437.48ca (bia e8eb.3437.48ca)
 Description: LAB0200-Server8-02 MLOM-P2
 MTU 9216 bytes, BW 40000000 Kbit , DLY 10 usec
 reliability 255/255, txload 1/255, rxload 1/255
 Encapsulation ARPA, medium is broadcast
 Port mode is trunk
 full-duplex, 40 Gb/s, media type is 40G
 Beacon is turned off
 Auto-Negotiation is turned on  FEC mode is Auto
 Input flow-control is off, output flow-control is off
 Auto-mdix is turned off
 Rate mode is dedicated
 Switchport monitor is off
 EtherType is 0x8100
 EEE (efficient-ethernet) : n/a
   admin fec state is auto, oper fec state is off
 Last link flapped 5week(s) 6day(s)
 Last clearing of "show interface" counters never
 12 interface resets
 Load-Interval #1: 30 seconds
   30 seconds input rate 162942488 bits/sec, 26648 packets/sec
   30 seconds output rate 35757024 bits/sec, 16477 packets/sec
   input rate 162.94 Mbps, 26.65 Kpps; output rate 35.76 Mbps, 16.48 Kpps
 Load-Interval #2: 5 minute (300 seconds)
   300 seconds input rate 120872496 bits/sec, 22926 packets/sec
   300 seconds output rate 54245920 bits/sec, 17880 packets/sec
   input rate 120.87 Mbps, 22.93 Kpps; output rate 54.24 Mbps, 17.88 Kpps
 RX
   85973263325 unicast packets  6318912 multicast packets  55152 broadcast packets
   85979637389 input packets  50020924423841 bytes
   230406880 jumbo packets  0 storm suppression bytes
   0 runts  0 giants  0 CRC  0 no buffer
   0 input error  0 short frame  0 overrun   0 underrun  0 ignored
   0 watchdog  0 bad etype drop  0 bad proto drop  0 if down drop
   0 input with dribble  0 input discard
   0 Rx pause
  TX
   76542979816 unicast packets  88726302 multicast packets  789768 broadcast packets
   76632574981 output packets  29932747104403 bytes
   3089287610 jumbo packets
   79095 output error  0 collision  0 deferred  0 late collision
   0 lost carrier  0 no carrier  0 babble  0 output discard
   0 Tx pause
```

De "netwerk-ontvangen-fout"waarschuwing werd opgelost met kabelvervanging op **int eth1/49 Leaf1**.

De laatste storing van de interfacekaart werd vlak voor de kabelvervanging gemeld.

```
2021 Nov 17 07:36:48 TPLF0201 %BFD-5-SESSION_STATE_DOWN: BFD session 1090519112 to neighbor
10.22.101.1 on interface Vlan2201 has gone down. Reason: Control
Detection Time Expired.
2021 Nov 17 07:37:30 TPLF0201 %BFD-5-SESSION_STATE_DOWN: BFD session 1090519107 to neighbor
10.22.101.2 on interface Vlan2201 has gone down. Reason: Control
Detection Time Expired.
2021 Nov 18 05:09:12 TPLF0201 %ETHPORT-5-IF_DOWN_LINK_FAILURE: Interface Ethernet1/48 is down
(Link failure)
```

De waarschuwingen worden gewist op eno6/bd0 van het label22 na de vervanging van de kabel.

```
[lab0200-smf/labceed22] cee# show alerts active summary
NAME UID SEVERITY STARTS AT SOURCE SUMMARY
-------------------------------------------------------------------------------------------------
-----------------------------------------------------
watchdog a62f59201ba8 minor 11-02T05:57:18 System This is an alert meant to ensure that the
entire alerting pipeline is functional. This ale...
```

Over deze vertaling

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