

配置思科NCS的1002 (Rosco)软件与报警和性能数据监听

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简介

本文与Cisco网络收敛系统的(NCS)1002 (Rosco)报警和性能数据监听一起描述基本软件配置步骤。

先决条件

要求

Cisco 建议您了解以下主题：

- NCS1002
- 有光学产品知识的Cisco IOS XR平台特殊化系统

使用的组件

本文档中的信息基于以下软件和硬件版本：

- NCS1002
- Cisco IOS XR VM控制台登录

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络实际，请保证您了解所有命令潜在影响。

背景信息

NCS1002是传送充分地可编程的一个2个纵向分配(RU)系统，在超出与使用的3000 km当前光纤的距离的高带宽容量(至250 Gbps)波长。供给动力由业界领先的Cisco IOS XR操作系统，思科NCS 1002提供稳健功能例如第三方应用程序做主机、计算机对计算机(M2M)接口、远测术和灵活包交付。

NCS 1002提供这些好处：

- 支持2 Tbps产能
- 传输100，200或者250 Gbps每个在同一个平台的波长通过软件供应
- 传输10个GE和100个GE在同一个平台通过软件供应
- 支持网格少调整弹性网格密集型波分复用(DWDM)的
- 支持不同的调制格式(PM-QPSK或PM-16QAM)
- 支持最大光学性能的7%或20%软的决策(SD) FEC
- 允许自动化的安装，配置和监视
- 支持根据配置方便的另外下一代(杨)型号API的M2M
- 支持远测术客栈SUB型号的代理程序设备监控

配置

集合和请验证管理IP

在您开始前：

- 咨询您的网络管理员或系统计划程序为管理端口获得IP地址和子网掩码
- 保证管理端口连接对管理网络

```
RP/0/RP0/CPU0:DBX2#conf t
```

```
Thu Feb 11 07:45:28.810 UTC
```

```
RP/0/RP0/CPU0:DBX2(config)#interface mgmtEth 0/RP0/CPU0/0
```

```
RP/0/RP0/CPU0:DBX2(config-if)#ipv4 address 172.20.165.151/24
```

```
RP/0/RP0/CPU0:DBX2(config-if)#no shutdown
```

```
RP/0/RP0/CPU0:DBX2(config-if)#commit
```

```
RP/0/RP0/CPU0:DBX2#sh ipv4 interface brief
```

```
Thu Feb 11 07:44:21.811 UTC
```

Interface	IP-Address	Status	Protocol	Vrf-Name
MgmtEth0/RP0/CPU0/0	172.20.165.151	Up	Up	default

```
RP/0/RP0/CPU0:DBX2#
```

验证软件版本

```
RP/0/RP0/CPU0:DBX2#show version
```

```
Thu Feb 11 07:52:26.846 UTC
```

```
Cisco IOS XR Software, Version 6.0.0
```

```
Copyright (c) 2013-2015 by Cisco Systems, Inc.
```

```
Build Information:
```

```
Built By      : alnguyen
```

```
Built On      : Thu Dec 24 01:05:17 PST 2015
```

```
Build Host    : iox-lnx-005
```

```
Workspace     : /auto/srcarchive16/production/6.0.0/ncs1k/workspace
```

```
Version       : 6.0.0
```

```
Location      : /opt/cisco/XR/packages/
```

```
cisco NCS1002 () processor
```

```
System uptime is 21 hours, 2 minutes
```

```
RP/0/RP0/CPU0:DBX2#
```

验证硬件状态

```
RP/0/RP0/CPU0:DBX2#show platform
```

```
Thu Feb 11 10:06:43.448 UTC
```

Node name	Node type	Node state	Admin state	Config state
-----------	-----------	------------	-------------	--------------

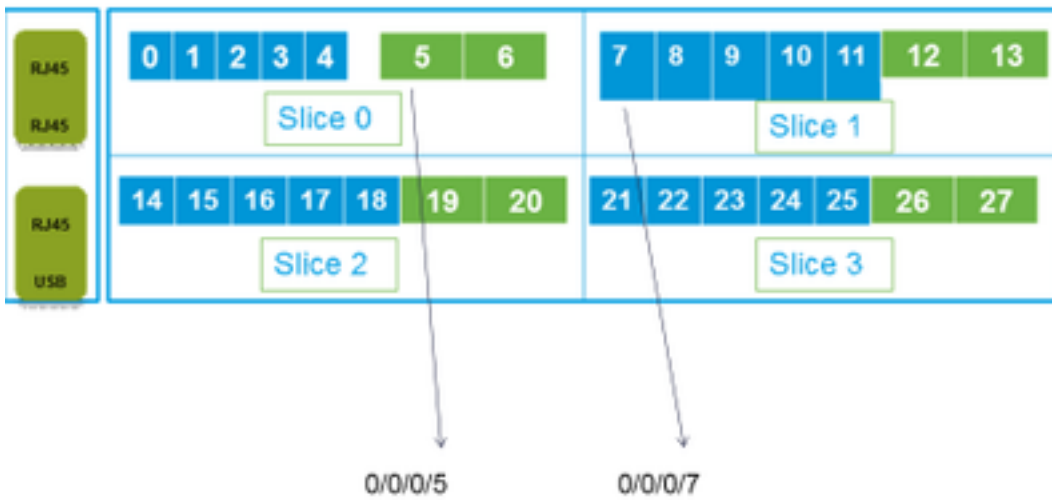
0/RP0	NCS1K-CNTRLR	OPERATIONAL	UP	NSHUT
-------	--------------	-------------	----	-------

```
RP/0/RP0/CPU0:DBX2#
```

配置并且验证片式

如镜像所显示，NCS1002的波尔特表示是。

Port addressing on NCS1K



```
RP/0/RP0/CPU0:DBX2#conf t
```

```
Thu Feb 11 08:53:44.390 UTC
```

```
RP/0/RP0/CPU0:DBX2(config)#hw-module location 0/RP0/CPU0 slice 3 client bitrate 100 trunk
bitrate 200$
```

```
RP/0/RP0/CPU0:DBX2(config)#commit
```

```
Thu Feb 11 08:54:16.383 UTC
```

```
RP/0/RP0/CPU0:DBX2(config)#end
```

```
RP/0/RP0/CPU0:DBX2#show hw-module slice 3
```

```
Thu Feb 11 08:55:05.100 UTC
```

```
Slice ID: 3
```

```
Status: Provisioning In Progress
```

```
Client Bitrate: 100
```

```
Trunk Bitrate: 200
```

```
DP FPGA Version: H14 (CURRENT)
```

```
Client Port - Trunk Port CoherentDSP0/0/0/26 CoherentDSP0/0/0/27
```

```
Traffic Split Percentage
```

```
HundredGigEctrlr0/0/0/21 100 0
```

```
HundredGigEctrlr0/0/0/22 100 0
```

```
HundredGigEctrlr0/0/0/24 0 100
```

```
HundredGigEctrlr0/0/0/25 0 100
```

RP/0/RP0/CPU0:DBX2#

支持NCS1k流量组合：

5 x 40G à 2 x 100G
5 x 40G à 1 x 200G
5 x 40G à 1 x 250G
20 x 10G à 2 x 100G
20 x 10G à 1 x 200G
20 x 10G à 1 x 250G
2 x 100G à 2 x 100G
4 x 100G à 2 x 200G
5 x 100G à 2 x 250G

SNMP

- 配置在Cisco IOS XR的SNMP V2C

您需要为了启用SNMP V2c获得/设置请求的配置：

```
RP/0/0/CPU0:smart-prp16#conf t
RP/0/0/CPU0:smart-prp16(config)#
RP/0/0/CPU0:smart-prp16(config)#snmp-server community public RW SystemOwner
RP/0/0/CPU0:smart-prp16(config)#commit
RP/0/0/CPU0:smart-prp16#
RP/0/0/CPU0:smart-prp16#show running-config snmp-server
snmp-server community public RW SystemOwner
```

Explanation of Configuration:

In configuration "public" is the community string and it be any text.

The Options RW and SystemOwner provides Read/Write to the entire system, including admin plane. If you need access to just the SDR (secure Domain Router),

then you can choose option "SDROwner"

You can also apply an Access list to the SNMP server. You can use command.

```
#snmp-server community public RW SDROwner my_acl_ravi
```

Where my_acl_ravi is an ACL.

Use command to verify the SNMP configuration.

```
RP/0/RP0/CPU0:DBX2#show snmp group
```

Thu Feb 11 09:09:48.303 UTC

```
groupname: public                security model:snmpv1
readview : vldefault            writeview:
```

```
notifyview: vldefault
row status: active
groupname: public                security model:snmpv2c
readview : vldefault            writeview:
notifyview: vldefault
row status: active
```

- 配置在Cisco IOS XR的SNMP V3 :
遵从步骤 :

SNMPV3

Configure an SNMP View

Command Syntax:

```
snmp-server view view-name oid-tree included
```

Where

view-name: is the name of the View
oid-tree: Object identifier (OID) of the ASN.1 subtree to be included or excluded from the view. To identify the subtree, specify a text string consisting of numbers, such as 1.3.6.2.4, or a word, such as system. Replace a single sub-identifier with the asterisk wildcard to specify a subtree family; for example 1.3.*.4.

```
RP/0/RP1/CPU0:akki(config)#snmp-server view view1 1.3 included
RP/0/RP1/CPU0:akki(config)#commit
```

```
RP/0/RP1/CPU0:akki#show snmp view
view1 org - included nonVolatile active
vldefault iso - included nonVolatile active
RP/0/RP1/CPU0:akki#
```

- 配置SNMP组 :

```
RP/0/RP1/CPU0:akki(config)#snmp-server group group1 v3 priv write view1 read view1
RP/0/RP1/CPU0:akki(config)#commit
RP/0/RP1/CPU0:akki#show running-config snmp-server group snmp-server group group1 v3 priv read
view1 write view1
```

```
RP/0/RP1/CPU0:akki#show snmp group groupname: group1 security model:usm readview : view1
writeview: view1 notifyview: vldefault row status: nonVolatile
```

```
RP/0/RP1/CPU0:akki#
```

- 配置SNMP用户 :

```
RP/0/RP1/CPU0:akki(config)#snmp-server user user1 group1 v3 auth md5 clear lab priv des56 clear
lab SystemOwner
RP/0/RP1/CPU0:akki(config)#commit
RP/0/RP1/CPU0:akki(config)#
RP/0/RP1/CPU0:akki#
```

```
RP/0/RP1/CPU0:akki#show snmp users
User name: user1
Engine ID: localSnmpID
storage-type: nonvolatile active
```

```
RP/0/RP1/CPU0:akki#show running-config snmp-server user
snmp-server user user1 group1 v3 auth md5 encrypted 13091610 priv des56 encrypted 09404F0B
SystemOwner
```

```
RP/0/RP1/CPU0:akki#
```

So far we need lines for V3 SNMP

```
RP/0/RP1/CPU0:akki#show running-config snmp-server
snmp-server user user1 group1 v3 auth md5 encrypted 13091610 priv des56 encrypted 09404F0B
SystemOwner
snmp-server view view1 1.3 included
snmp-server group group1 v3 priv read view1 write view1
```

使用此您设置在路由器的配置V3请求的。

[V3 SNMP请求的](#) 参考的 [安装主机](#)。

远测术

放出远测术让用户的直接数据到分析和故障排除目的的一个已配置的接收方为了维护网络的健康。这通过有效利用M2M通信的功能达到。

传统上，组织使用下拉菜单型号收集数据，客户端拉从网元的数据。当有超过网络的，一个网络管理站此下拉菜单型号，然而，不扩展。这些传统技术不迎合路由器的所有基础信息，并且他们要求人工干预。

跟随链路：

https://www.cisco.com/c/en/us/td/docs/iosxr/Telemetry/Telemetry-Config-Guide/Telemetry-Config-Guide_chapter_011.html

Netconf和SSH

Netconf提供机制安装，操作和删除网络设备的配置。

Netconf协议提供一套操作管理设备配置和获取设备状态信息。

- 验证k9sec包的安装
- 生成安全壳SSH的加密密钥与使用加密密钥生成dsa命令
- 配置SSH

```
RP/0/RP0/CPU0:ios# configure
```

```
RP/0/RP0/CPU0(config)# ssh server v2
```

```
RP/0/RP0/CPU0(config)# ssh server netconf port 830
```

```
RP/0/RP0/CPU0(config)# ssh server netconf vrf default
```

Note:波尔特830是默认Netconf端口。

- **配置Netconf :**

```
RP/0/RP0/CPU0:ios# configure
```

```
RP/0/RP0/CPU0(config)# netconf-yang agent ssh
```

- **显示netconf杨的客户端详细信息，运行显示netconf杨客户端in命令EXEC模式。**

```
RP/0/RP0/CPU0:ios# show netconf-yang clients
```

```
Tue Dec 8 07:49:14.846 UTC
```

```
Netconf clients
```

```
client session ID| NC version| client connect time| last OP time| last OP type|
```

```
<lock>|
```

```
1188487019| 1.1| 0d 16h 56m 50s| 01:17:13| get|
```

```
No|
```

- **显示netconf杨的统计详细信息，运行显示netconf杨statistics命令在EXEC模式。**

```
RP/0/RP0/CPU0:ios# show netconf-yang statistics
```

```
Tue Dec 8 07:49:45.506 UTC
```

```
Summary statistics
```

```
# requests| total time| min time per request| max time per request| avg time per request|other  
0| 0h 0m 0s 0ms| 0h 0m 0s 0ms| 0h 0m
```

```
0s 0ms| 0h 0m 0s 0ms|
```

```
0s 0ms| 0h 0m 0s 0ms|
```

```
Statistics for session with ID: 1188487019
```

```
<snip>
```

- **调试并且验证Netconf，运行显示netconf杨trace命令在EXEC模式。**

```
RP/0/RP0/CPU0:ios# show netconf-yang trace
```

```
Tue Dec 8 07:50:54.590 UTC
```

```
[12/08/15 07:30:37.851 UTC 1046d3 4942] TRC: nc_sm_session_find_session_id:1386 Found session
```

```
3027026318 0x1852f68
```

```
[12/08/15 07:30:37.851 UTC 1046d4 4942] DBG: nc_sm_yfw_response_cb:2816 Received OK response for  
session-id '3027026318', for message-id '856615', which has 'NO ERROR' and 'DATA'
```

```
[12/08/15 07:30:37.851 UTC 1046d5 4942] TRC: nc_sm_yfw_response_complete:2700 DATA element in  
chunk
```

```
state: CONTINUE
```

```
<snip>
```


验证光学PM (客户端QSFP和建立中继CFP)

- 客户端端口的PM :

For current PM data

```
RP/0/RP0/CPU0:DBX2#show controllers optics 0/0/0/0 pm current 15-min/24-hour optics 1
```

```
RP/0/RP0/CPU0:DBX2#show controllers optics 0/0/0/0 pm current 15-min/24-hour optics 2
```

```
RP/0/RP0/CPU0:DBX2#show controllers optics 0/0/0/0 pm current 15-min/24-hour optics 3
```

```
RP/0/RP0/CPU0:DBX2#show controllers optics 0/0/0/0 pm current 15-min/24-hour optics 4
```

For History PM data

```
RP/0/RP0/CPU0:DBX2#show controllers optics 0/0/0/0 pm history 15-min/24-hour optics 1 bucket <1-32/1-12>
```

```
RP/0/RP0/CPU0:DBX2#show controllers optics 0/0/0/0 pm history 15-min/24-hour optics 2 bucket <1-32/1-12>
```

```
RP/0/RP0/CPU0:DBX2#show controllers optics 0/0/0/0 pm history 15-min/24-hour optics 3 bucket <1-32/1-12>
```

```
RP/0/RP0/CPU0:DBX2#show controllers optics 0/0/0/0 pm history 15-min/24-hour optics 4 bucket <1-32/1-12>
```

- 中继CFP端口的PM :

当前PM数据 :

```
RP/0/RP0/CPU0:DBX2#show controllers optics 0/0/0/5 pm current 15-min/24-hour optics 1
```

历史记录PM数据 :

```
RP/0/RP0/CPU0:DBX2#show controllers optics 0/0/0/5 pm history 15-min/24-hour optics 1 bucket 1
```

验证在客户端端口的以太网PM

- 客户端QSFP端口 :

```
RP/0/RP0/CPU0:DBX2#show controllers hundredGigEctrlr 0/0/0/0 pm current 15-min/24-hour ether
```

```
RP/0/RP0/CPU0:DBX2#show controllers hundredGigEctrlr 0/0/0/0 pm history 15-min ether <1-32>
```

```
RP/0/RP0/CPU0:DBX2#show controllers hundredGigEctrlr 0/0/0/0 pm history 24-hour ether
```

- 中继CFP端口 :

```
RP/0/RP0/CPU0:DBX2#show controllers coherentDSP 0/0/0/5 pm current 15-min otn
```

```
RP/0/RP0/CPU0:DBX2#show controllers coherentDSP 0/0/0/5 pm current 15-min fec
```

```
RP/0/RP0/CPU0:DBX2#show controllers coherentDSP 0/0/0/5 pm history 15-min fec <1-32>
```

```
RP/0/RP0/CPU0:DBX2#show controllers coherentDSP 0/0/0/5 pm history 24-hour fec
```

验证报警(当前和历史记录)在波尔特和系统

- 运行命令的当前报警：

```
RP/0/RP0/CPU0:DBX2#show alarms brief card location 0/RP0/CPU0 active
```

```
Thu Feb 11 10:12:21.886 UTC
```

```
-----  
Active Alarms  
-----
```

Location	Severity	Group	Set Time	Description
0/0 Removal	Critical	Controller	02/10/2016 10:51:33	Optics0/0/0/10 - Improper
0/0 Removal	Critical	Controller	02/10/2016 10:51:33	Optics0/0/0/11 - Improper

```
[snippet]
```

- 运行命令的历史记录报警：

```
RP/0/RP0/CPU0:DBX2#show alarms brief card location 0/RP0/CPU0 history
```

```
Thu Feb 11 10:14:13.070 UTC
```

```
-----  
History Alarms  
-----
```

Location	Severity	Group	Set Time	Description
0/0 Differential Group Delay	Minor	Controller	02/10/2016 10:51:33	Optics0/0/0/5 - Optics High
			02/10/2016 10:52:01	
0/0 Range Chromatic Dispersion	Minor	Controller	02/10/2016 10:51:33	Optics0/0/0/5 - Optics Out of
			02/10/2016 10:52:01	

```
[snippet]
```

Note:输出从NSC1002的版本6.0.0捕获。

验证

使用本部分可确认配置能否正常运行。

验证进程在此条款的配置部分单个报道。

故障排除

目前没有针对此配置的故障排除信息。

相关信息

- http://www.cisco.com/c/en/us/td/docs/optical/ncs1000/dwdm-system-setup-guide/b-system-setup-ncs1002_chapter_010.html#task_37FE9449C1004631B8CEB859BB191F9E
- http://www.cisco.com/c/en/us/td/docs/optical/ncs1000/dwdm-cli-reference/ncs1002commandreference_chapter_00.html
- [技术支持和文档 - Cisco Systems](#)