# Nexus(NX-OS)提示和技巧

## 目錄

## 簡介

本文檔介紹一些可以增強NX-OS故障排除體驗的快速提示和技巧。

## 快速十六進位制/解碼器轉換

十六進位制表示十進位制，十進位制表示十進位制

```
NX-OS# dec 0x89
137
NX-OS# hex 137
0x89
```

## 一次執行多個CLI

CLI代表命令列介面

```
N7k-LabSW# show clock ; show switchname ; show license host-id
19:10:59.016 UTC Mon Apr 04 2016
N7k-LabSW
License hostid: VDH=TBM14354170
```

 #也適用於配置：

```
N7k-LabSW# conf t ; hostname N7k-LabSW-DEFAULT ; end
```

```
Enter configuration commands, one per line.  End with CNTL/Z.
N7k-LabSW-DEFAULT#
```
#完成CLI所用的時間：


```
N7k-LabSW# show clock ; show run | ex .* ; show clock
07:56:08.709 UTC Tue Apr 05 2016
07:56:08.834 UTC Tue Apr 05 2016
```

# 使用CLI變數


```
N7k-LabSW# show cli variables
VSH Variable List (* = session vars)
----------------
SWITCHNAME="N7k-LabSW"
TIMESTAMP="2016-04-05-08.34.18"

N7k-LabSW# tac-pac bootflash:$(SWITCHNAME)-$(TIMESTAMP)-show-tech-all.gz
N7k-LabSW# dir bootflash: | i show-tech-all
   15091722    Apr 05 08:41:27 2016  N7k-LabSW-2016-04-05-08.35.57-show-tech-all.gz
```
還可以建立自己的變數：

[CCO參考](#)

# 自定義終端設定

1)避免終端會話超時：


```
N7k-LabSW# show terminal | i Timeout
Session Timeout: 30 minutes

N7k-LabSW# terminal session-timeout ?
 <0-525600>  Enter timeout in minutes, 0 to disable

N7k-LabSW# terminal session-timeout 0
N7k-LabSW# show terminal | i Timeout
Session Timeout: 0 minutes
```
2)設定顯示終端的寬度/長度：

當不希望長寬輸出中斷到新行時，非常方便


```
N7k-LabSW# show terminal | i Width
Length: 25 lines, Width: 98 columns

N7k-LabSW# terminal width 300
N7k-LabSW# show terminal | i Width
Length: 25 lines, Width: 300 columns
```

# 根據需要延遲命令執行


```
N7k-LabSW# show clock ; sleep 10 ; show clock
19:27:07.435 UTC Mon Apr 04 2016
19:27:17.445 UTC Mon Apr 04 2016
```

# 訪問路由環境/VRF

VRF代表虛擬路由和轉送

運行特定VRF的CLI，而無需每次向命令新增VRF **<>**:

```
N7k-LabSW# routing-context vrf management
N7k-LabSW%management# sh ip route
IP Route Table for VRF "management"
'*' denotes best ucast next-hop
'**' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]
'%<string>' in via output denotes VRF <string>

0.0.0.0/0, ubest/mbest: 1/0
   *via 10.48.61.129, [1/0], 1w4d, static
10.48.61.128/26, ubest/mbest: 1/0, attached
   *via 10.48.61.150, mgmt0, [0/0], 1w4d, direct
10.48.61.150/32, ubest/mbest: 1/0, attached
   *via 10.48.61.150, mgmt0, [0/0], 1w4d, local

N7k-LabSW%management#
N7k-LabSW%management# routing-context vrf default
N7k-LabSW# sh ip route
IP Route Table for VRF "default"
'*' denotes best ucast next-hop
'**' denotes best mcast next-hop
'[x/y]' denotes [preference/metric]
'%<string>' in via output denotes VRF <string>
```

# 連線到LC時為各自VDC運行CLI:N7k特定

VDC代表虛擬裝置環境

LC代表線路卡

N7K代表Nexus 7000

連線到LC後，CLI針對預設VDC運行，或者需要指定相關命令的VDC編號。

相反，您可以像路由環境一樣在VDC #空間中運行CLI。

範例：

```
N7k-LabSW# attach module 4
Attaching to module 4 ...
To exit type 'exit', to abort type '$.'
module-4# show hardware mac address-table
FE | Valid| PI| BD  |     MAC     | Index| Stat| SW  | Modi| Age| Tmr| GM| Sec| TR| NT| RM|
RMA| Cap| Fld|Always| PV | RD| NN| UC|PI_E8| VIF | SWID| SSWID|  LID
   |     |   |      |             |      |     |  ic |     | fied|Byte| Sel|   | ure| AP| FY|
   |  |TURE|   | Learn|   |   |   |   |     |     |     |      |    |
---+------+---+------+--------------+-------+-----+-----+-----+----+----+---+----+---+---+----+-
---+----+----+------|----|---|---|---|-----|-----|-----|------|-------
  4   1    1   2     0023.ac66.1dc1 0x010c7   1    0x000   0    0    0    1   0   0   0
  0    0    0    0    0   0x00 0  0   0   0    0x000 0x000  0x000 0x010c7
```

```
 5     1     1    2      0023.ac66.1dc1  0x010c7   1   0x000   0    0     0     1    0    0    0
0     0     0     0     0   0x00  0   0    0     0    0x000 0x000  0x000 0x010c7
Command outputs from Default VDC are pulled here


module-4# vdc 6  >>>>>>> switches LC to pull this VDC specific outputs only
module-4# show hardware mac address-table
```

| FE | Valid | PI | BD | MAC | Index | Stat | SW | Modi | Age | Tmr | GM | Sec | TR | NT | RM | RMA | Cap | Fld | Always | PV | RD | NN | UC | PI_E8 | VIF | SWID | SSWID | LID |
|----|-------|----|----|-----|-------|------|-----|------|------|------|-----|------|-----|-----|-----|-----|-----|-----|--------|-----|-----|-----|-----|-------|-----|------|-------|-----|
| | | | | | | | | ic | | fied | Byte | Sel | | ure | AP | FY | | | TURE | | Learn | | | | | | | | | | | |
| 0 | 1 | 1 | 92 | 0023.ac66.1dc6 | 0x010c7 | 1 | 0x000 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0x00 | 0 | 0 | 0 | 0 | 0x000 | 0x000 | 0x000 | 0x010c7 |
| 0 | 1 | 0 | 91 | 0019.3074.9c02 | 0x00414 | 0 | 0x009 | 0 | 118 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0x00 | 1 | 0 | 1 | 0 | 0x000 | 0x000 | 0x000 | 0x00414 |

# 在Linux核心和NX-OS之間來回切換，而不退出調試外掛

```
N5600-Lab# load dplugg
Loading plugin version 7.1(1)N1(1)
################################################################
 Warning: debug-plugin is for engineering internal use only!
 For security reason, plugin image has been deleted.
################################################################
Successfully loaded debug-plugin!!!
Linux(debug)# vsh >>>>> Moves back to NX-OS prompt
Cisco Nexus Operating System (NX-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2015, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained in this software are
owned by other third parties and used and distributed under
license. Certain components of this software are licensed under
the GNU General Public License (GPL) version 2.0 or the GNU
Lesser General Public License (LGPL) Version 2.1. A copy of each
such license is available at
http://www.opensource.org/licenses/gpl-2.0.php and
http://www.opensource.org/licenses/lgpl-2.1.php
N5600-Lab# show clock
20:20:07.468 UTC Mon Apr 04 2016
N5600-Lab# exit >>>>> Moves back to Linux prompt
Linux(debug)#
Linux(debug)# clock
Mon Apr  4 20:20:13 2016   -0.282195 seconds UTC
```

**NOTE**: "Debug Plugin" should only be used in presence of Cisco TAC and is not available for customer use.
Please do not modify any setting unless guided by Cisco TAC.

 或者，可以直接從調試外掛運行NX-OS CLI:


```
Linux(debug)# vsh -c "show switchname"
N5600-Lab
Linux(debug)# vsh -c "show module"
Mod Ports Module-Type                          Model                 Status
--- ----- -------------------------------- -------------------- -----------
1   52    Nexus 56128P Supervisor          N5K-C56128P-SUP      active *

Mod  Sw            Hw      World-Wide-Name(s) (WWN)
---  ------------- ------  -----------------------------------------------------
1    7.1(1)N1(1)   1.1     --
```

# 直接通過VSH載入配置

## VSH代表虛擬shell

```
NEXUS-LABSWICTH# echo "hostname LAB" | vsh
LAB#

Mon Apr  4 20:51:14 2016:type=update:id=10.61.236.97@pts/1:user=admin:cmd=echo "hostname LAB" |
vsh (SUCCESS)
Mon Apr  4 20:51:14 2016:type=start:id=vsh.9326:user=admin:cmd=
Mon Apr  4 20:51:14 2016:type=update:id=vsh.9326:user=admin:cmd=configure terminal ; hostname
LAB (SUCCESS)

LAB# echo "hostname NEXUS-LABSWITCH" | vsh
NEXUS-LABSWITCH#

Mon Apr  4 20:51:23 2016:type=update:id=10.61.236.97@pts/1:user=admin:cmd=echo "hostname NEXUS-
LABSWITCH" | vsh (SUCCESS)
Mon Apr  4 20:51:23 2016:type=start:id=vsh.9390:user=admin:cmd=
Mon Apr  4 20:51:23 2016:type=update:id=vsh.9390:user=admin:cmd=configure terminal ; hostname
NEXUS-LABSWITCH (SUCCESS)

N5600-Lab# show run | i hostname | sed "s/N5600-Lab/N56128/" | vsh
N56128#
N56128# show accounting log | last 3
Mon Apr  4 21:23:23 2016:type=start:id=vsh.6762:user=admin:cmd=
Mon Apr  4 21:23:23 2016:type=update:id=vsh.6762:user=admin:cmd=configure terminal ; hostname
N56128 (SUCCESS)
Mon Apr  4 21:23:23 2016:type=stop:id=vsh.6762:user=admin:cmd=

N5600-Lab# echo "hostname N56128" > bootflash:CLI
N5600-Lab#
N5600-Lab# show file CLI
hostname N56128
N5600-Lab# show file CLI | vsh
N56128#
```

# 使用Diffs — 列出計數器之間的差異

## Diff代表差異

```
N5600-Lab# show int mgmt0 | diff
N5600-Lab# show int mgmt0 | diff
11,12c11,12
<    9393 input packets 829764 bytes
<141 unicast packets 3715 multicast packets
---
>    9395 input packets 830217 bytes
>142 unicast packets 3716 multicast packets
15,16c15,16
<    214 output packets 47396 bytes
<27 unicast packets 181 multicast packets
---
>    215 output packets 47640 bytes
>27 unicast packets 182 multicast packets
```

# 使用Watch CLI - 7.0(3)I2(x)後特定於N9k

N9K代表Nexus 9000

```
BRU-N9K3-1# watch differences interval 1 show int mgmt0 counter

Every 1.0s:  vsh -c "show int mgmt0
counter"
                                  Mon Apr  4 23:42:27 2016
```

# 在內部檢查CPU使用情況

CPU代表中央處理器

此命令每5秒（可以更改）提供一個輸出，指出哪個進程正在消耗CPU。其輸出與linux top命令**相同**
:

```
NEXUS# show system internal processes cpu 5 | no-more
top - 12:41:55 up 117 days, 17:00, 5 users, load average: 0.44, 0.50, 0.55 Tasks: 2883 total, 2
running, 1022 sleeping, 0 stopped, 1859 zombie Cpu(s): 1.0%us, 0.9%sy, 0.0%ni, 98.0%id, 0.0%wa,
0.0%hi, 0.1%si, 0.0%st Mem: 32744992k total, 14563132k used, 18181860k free, 61308k buffers
Swap: 0k total, 0k used, 0k free, 4091160k cached PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+
COMMAND 18465 admin 20 0 5200 3108 1148 R 16.6 0.0 0:00.17 top 6389 root 20 0 699m 53m 14m S 3.3
0.2 113:49.07 netstack 18473 root 20 0 97940 3804 2796 R 3.3 0.0 0:00.02 vsh 10 root 15 -5 0 0 0
S 1.7 0.0 9:10.85 ksoftirqd/2 4876 root 15 -5 369m 27m 6564 S 1.7 0.1 67:33.91 sysmgr 9581 svc-
isan 20 0 446m 41m 11m S 1.7 0.1 21:16.15 isis_l2mp 1 root 20 0 1980 652 572 S 0.0 0.0 3:02.73
init 2 root 15 -5 0 0 0 S 0.0 0.0 0:00.03 kthreadd 3 root RT -5 0 0 0 S 0.0 0.0 0:00.49
migration/0 4 root 15 -5 0 0 0 S 0.0 0.0 22:48.66 ksoftirqd/0 5 root -2 -5 0 0 0 S 0.0 0.0
0:00.00 watchdog/0 6 root RT -5 0 0 0 S 0.0 0.0 0:00.65 migration/1 7 root 15 -5 0 0 0 S 0.0 0.0
2:27.70 ksoftirqd/1 top - 12:42:01 up 117 days, 17:00, 5 users, load average: 0.37, 0.48, 0.54
Tasks: 2887 total, 1 running, 1027 sleeping, 0 stopped, 1859 zombie Cpu(s): 1.0%us, 0.9%sy,
0.0%ni, 98.0%id, 0.0%wa, 0.0%hi, 0.1%si, 0.0%st Mem: 32744992k total, 14562360k used, 18182632k
free, 61308k buffers Swap: 0k total, 0k used, 0k free, 4091160k cached PID USER PR NI VIRT RES
SHR S %CPU %MEM TIME+ COMMAND 18502 admin 20 0 5200 3112 1148 R 18.5 0.0 0:00.17 top 6389 root
20 0 699m 53m 14m S 1.7 0.2 113:49.08 netstack 6402 root -2 0 366m 13m 8660 S 1.7 0.0 1032:41
clx 9015 root 20 0 482m 21m 11m S 1.7 0.1 225:45.72 pm 10066 svc-isan 20 0 403m 22m 9.9m S 1.7
0.1 268:31.28 ospf 10487 svc-isan 20 0 354m 9992 6596 S 1.7 0.0 194:52.11 ecp 1 root 20 0 1980
652 572 S 0.0 0.0 3:02.73 init 2 root 15 -5 0 0 0 S 0.0 0.0 0:00.03 kthreadd 3 root RT -5 0 0 0
S 0.0 0.0 0:00.49 migration/0 4 root 15 -5 0 0 0 S 0.0 0.0 22:48.66 ksoftirqd/0 5 root -2 -5 0 0
0 S 0.0 0.0 0:00.00 watchdog/0 6 root RT -5 0 0 0 S 0.0 0.0 0:00.65 migration/1 7 root 15 -5 0 0
0 S 0.0 0.0 2:27.70 ksoftirqd/1
```

# 發佈內部生成版本

N7k/N9k

```
N7k-LabSW# show version internal build-identifier
Kickstart image file: bootflash:///n7000-s2-kickstart.6.2.10.bin :  S102
System image file: bootflash:///n7000-s2-dk9.6.2.10.bin :  S102

BRU-N9K3-1# show version internal build-identifier
nxos image file: bootflash:///nxos.7.0.3.I2.2a.bin :  S30
```
N5k/6k:

```
N5600-Lab# show platform fwm info global | i FwM
        FwM build Details: Built at Sat Apr 18 11:11:18 PDT 2015 on nuo-sw-build40 in directory
/auto/n5kiluka/daily_build/iplus/nexus/522/src/build by buildsa)
```