

Suggerimenti e suggerimenti Nexus (NX-OS)

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Introduzione

In questo documento vengono forniti alcuni suggerimenti rapidi che possono migliorare la risoluzione dei problemi con NX-OS.

Conversione Quick Hex/Dec

Hex sta per Hexa Decimal , Dec per Decimal

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

Esecuzione simultanea di più CLI

CLI è l'acronimo di Command Line Interface

```
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
```

Funziona anche per la configurazione:

```
N7k-LabSW# conf t ; hostname N7k-LabSW-DEFAULT ; end
Enter configuration commands, one per line. End with CNTL/Z.
N7k-LabSW-DEFAULT#
```

Tempo necessario per il completamento di una CLI:

```
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
```

Utilizzo delle variabili CLI

```
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
```

È inoltre possibile creare variabili personalizzate:

[Riferimento CCO](#)

Personalizzare le impostazioni del terminale

1) Evitare timeout di sessione del terminale:

```
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) Impostare la larghezza/lunghezza del terminale del display:

Si rivela utile quando non si desidera che l'output venga suddiviso in una nuova riga per gli output a lunga larghezza

```
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
```

Ritardare l'esecuzione dei comandi in base alle esigenze

```
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

Accesso a Routing-Context/VRF

VRF è l'acronimo di Virtual Routing and Forwarding

Eseguire i CLI per un VRF specifico senza aggiungere sempre VRF <> al comando:

```
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>
```

Esecuzione di CLI per il rispettivo VDC quando collegato al LC: Specifico N7k

VDC è l'acronimo di Virtual Device Context

LC sta per Line Card

N7K è l'acronimo di Nexus 7000

Una volta collegati al controller di dominio locale, i CLI vengono eseguiti rispetto al controller di dominio virtuale predefinito oppure è necessario specificare il numero VDC per il comando correlato.

È invece possibile eseguire i CLI nello spazio # VDC come nel contesto di routing.

Esempio:

```
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

```

Passaggio avanti e indietro tra il kernel Linux e NX-OS senza uscire dal plug-in di debug

```

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.
In alternativa, è possibile eseguire le CLI di NX-OS direttamente dal plug-in di debug:

```
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              --
```

<snipped>

Caricamento della configurazione direttamente tramite VSH

VSH è l'acronimo di Virtual Shell

```
NEXUS-LABSWITCH# 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#
```

Utilizzo di differenze - Elenca le differenze tra i contatori

Diff sta per Difference

```
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
```

Utilizzo di Watch CLI - specifico per N9k dalla versione 7.0(3)I2(x)

N9K sta per 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

[CCO reference](#)

Verifica utilizzo CPU internamente

CPU è l'acronimo di Central Processing Unit

Questo comando restituisce un output ogni 5 secondi (è possibile modificare) sul processo che utilizza la CPU. e restituisce lo stesso output del comando linux **top**:

```
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
```

Versione build interna

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)
```