



NEXUS 7K DEVOPS MENU

Custom Menu and Troubleshooting command set for Data Center Client



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APPLIED METHODOLOGIES

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1.0 What is actually displayed to OPS at Nexus 7k Admin VDC login

```
***** State U DC NEXUS ADMIN VDC OPS Command Set*****  
*****Enter command followed by Enter*****
```

```
    Type v          to Display Configured VDCs  
    Type sec        to Go to Secure VDC  
    Type wr         to Save Configuration all VDCs  
    Type sniff      to Conduct Control Plane Summary Sniff  
    Type sniffdet   to Conduct Control Plane Detail Sniff  
    Type m          to recall this help menu
```

LOC2-DC1#

1.1 NX-OS Admin VDC alias commands and menu script configuration

```
echo "          ***** State U DC NEXUS ADMIN Command Set *****"  
echo "          *****Enter command followed by Enter*****"  
echo "          "  
echo "          Type v          to Display Configured VDCs"  
echo "          Type sec        to Go to Secure VDC"  
echo "          Type wr         to Save Configuration all VDCs"  
echo "          Type sniff      to Conduct Control Plane Summary Sniff"  
echo "          Type sniffdet   to Conduct Control Plane Detail Sniff"  
echo "          Type m          to recal this help menu"
```

```
cli alias name sniff ethanalyzer local interface inband decode-internal limit-captured-frames 100  
cli alias name wr copy run start vdc-all  
cli alias name sniffdet ethanalyzer local interface inband limit-captured-frames 100 detail  
cli alias name v show vdc  
cli alias name sec swichto vdc iodc2secure  
cli alias name m run-script bootflash:adminmenu | exclude echo
```

2.0 What is displayed to OPS at main production VDC login

```
***** State U DC NEXUS Secure VDC OPS Command Set *****  
*****Enter command followed by Enter*****
```

```
Type v          to Display Configured VDCs  
Type sw        to Return to ADMIN VDC  
Type wr        to Save Configuration  
Type netflow   to Display netflow activity  
Type fpauthon  to Enable FP Authentication  
Type fpauthoff to Disable FP Authentication  
Type ooson     to Enable switch in ISIS Out of Service mode  
Type oosoff    to Disable ISIS Out of Service mode and set boot  
Type stormon  to Enable Storm Control on DCI and PO Interfaces  
Type stormoff  to Disable Storm Control on DCI and PO Interfaces
```

```
*****  
*****OUTPUT & TOP N COMMANDS FOR TROUBLESHOOTING*****  
*****SET TERM LENGTH to 45+ for best results*****
```

```
Type des       to Display Interface Descriptions  
Type up        to Display Interfaces UP  
Type down      to Display Interfaces Down  
Type dcicount  to Display DCI Interface load counters  
Type dci       to Display DCI Interface stats  
Type macyoung  to Display Dynamic MAC Address refresh  
Type macold    to Display Dynamic MAC Addresses aging  
Type vdcmac    to Display Internal MACs assigned to VDC  
Type stpevent  to Display STP Event History real time  
Type stpoot    to Display STP root (This bridge is root)  
Type stpicon   to Display STP Inconsistent Ports  
Type VPC       to Display General VPC information/status  
Type pkl       to display VPC Peer Keep Alive Status  
Type po        to Display VPC Port-channel Summary  
Type id        to Display FP Switch Hostnames  
Type neighbor  to Display FP ISIS adjacency details  
Type fpstats   to Display FP ISIS SFP/LSP stats - look for increments  
Type fproute   to Display FP Routes in top N  
Type fpevent   to Display FP event history  
Type fpconflict to Display FP resource conflicts and transitions  
Type fpdata    to Display FP ISIS Database and Ftag Graphs  
Type ftagtrees to Display FP ISIS Multicast FTAG Tree details  
Type cpu       to Display switch CPU utilization TOP N  
Type cpuhist   to Display switch CPU utilization history  
Type sysup     to Display switch uptime  
Type m         to Display this HELP MENU
```

LOC2-DC1-DC1SECURE#

2.1 NX-OS Secure VDC alias commands and menu script configuration

```

echo "***** StateU DC NEXUS ADMIN Command Set *****"
echo "*****Enter command followed by Enter*****"
echo "
echo "          Type v          to Display Configured VDCs"
echo "          Type sw          to Return to ADMIN VDC"
echo "          Type wr          to Save Configuration"
echo "          Type netflow     to Display netflow activity"
echo "          Type fpauthon    to Enable FP Authentication"
echo "          Type fpauthoff   to Disable FP Authentication"
echo "          Type ooson       to Enable switch in ISIS Out of Service mode"
echo "          Type oosoff      to Disable ISIS Out of Service mode and set boot"
echo "          Type stormon     to Enable Storm Control on DCI and PO Interfaces"
echo "          Type stormoff    to Disable Storm Control on DCI and PO Interfaces"
echo "*****"
echo "***** OUTPUT & TOP N COMMANDS FOR TROUBLESHOOTING *****"
echo "*****SET TERM LENGTH to 45+ for best results*****"
echo "
echo "          Type intdes      to Display Interface Descriptions"
echo "          Type up          to Display Interfaces UP"
echo "          Type down        to Display Interfaces Down"
echo "          Type dcicount    to Display DCI Interface load counters"
echo "          Type dci         to Display DCI Interface stats"
echo "          Type macyoung    to Display Dynamic MAC Address refresh"
echo "          Type macold      to Display Dynamic MAC Addresses aging"
echo "          Type vdcmac      to Display Internal MACs assigned to VDC"
echo "          Type stpevent    to Display STP Event History real time"
echo "          Type stpboot     to Display STP root (This bridge is root)"
echo "          Type stpicon     to Display STP Inconsistent Ports"
echo "          Type vpcinfo     to Display General VPC information/status"
echo "          Type pkl         to display VPC Peer Keep Alive Status"
echo "          Type po          to Display VPC Port-channel Summary"
echo "          Type id          to Display FP Switch Hostnames"
echo "          Type neighbor    to Display FP ISIS adjacency details"
echo "          Type fpstats     to Display FP ISIS SFP/LSP stats - look for increments"
echo "          Type fproute     to Display FP Routes in top N"
echo "          Type fpevent     to Display FP event history"
echo "          Type fpconflict  to Display FP resource conflicts and transitions"
echo "          Type fpdata      to Display FP ISIS Database and Ftag Graphs"
echo "          Type ftagtrees   to Display FP ISIS Multicast FTAG Tree details"
echo "          Type cpu         to Display switch CPU utilization TOP N"
echo "          Type cpuhist     to Display switch CPU utilization history"
echo "          Type sysup       to Display switch uptime"
echo "          Type m           to Display this HELP MENU"

```

```
cli alias name intdes sh int description; fix for another name
cli alias name up sh int status up | top
cli alias name down sh int status down | top
cli alias name dcicount sh int eth 3/41 counters brief load-interval 1 | top
cli alias name dci sh int eth 3/41 | top
cli alias name macyoung sh mac address-table dynamic | grep "dynamic 0" | top
cli alias name macold sh mac address-table dynamic | exclude "dynamic 0" | top 1
cli alias name vdcmac sh vdc internal mac_address_table
cli alias name stpevent sh spanning-tree internal_event-history all | top
cli alias name stproot sh spanning-tree root
cli alias name stpicon sh spanning-tree inconsistentports
cli alias name vpcinfo sh vpc
cli alias name pk1 sh vpc peer-keepalive
cli alias name po sh port-channel sum
cli alias name id sh fab isis hostname switch-id
cli alias name neighbor sh fab isi adjacency det
cli alias name fpstats sh fabricpath isis statistics
cli alias name fproute sh fabricpath route detail | top
cli alias name fpevent show fabricpath isis internal event-history events
cli alias name fpconflict show fabricpath conflict all
cli alias name fpdata sh fabricpath isis database detail
cli alias name ftags sh fabricpath isis switch-id
cli alias name ftagtrees sh l2 multicast trees
cli alias name cpu sh system resources | top
cli alias name cpuhist sh processes cpu history | top
cli alias name sysup sh system uptime
cli alias name m run-script bootflash:secmenu | exclude echo
```

3.0 Some output from command set commands

```
#####Nexus 7k FP Overload BIT ALWAYS ON #####
#####FOR SERVICE USE#####
#####2014 AMILABS#####

fabricpath domain default
set-overload-bit always

###DONE SW NOW NON TRANSIT###

#####Nexus 7k FP Overload BIT to Startup #####
#####FOR Reload USE#####
#####2014 AMILABS#####

fabricpath domain default
set-overload-bit on-startup 60

###DONE SW NOW BACK to Overload at Startup###

#####Nexus 7k FP Storm Control disabled #####
#####FOR normal or emergency use on critical links#####
#####2014 AMILABS#####

interface port-channel31
no storm-control broadcast level 50.00
no storm-control multicast level 50.00
no storm-control unicast level 50.00

interface Ethernet3/41
no storm-control broadcast level 50.00
no storm-control multicast level 50.00
no storm-control unicast level 50.00

###DONE Storm Control Now disabled###

#####Nexus 7k FP Storm Control enabled #####
#####FOR normal or emergency use on critical links#####
#####2014 AMILABS#####

interface port-channel31
storm-control broadcast level 50.00
storm-control multicast level 50.00
storm-control unicast level 50.00

interface Ethernet3/41
storm-control broadcast level 50.00
storm-control multicast level 50.00
storm-control unicast level 50.00

###DONE Storm Control Now Enabled###
```

```
#####Nexus 7k FP Interface Authentication ON#####
#####2014 AMILABS#####

#####Nexu 7k FP global LSP and SNP Authentication####
#####2014 AMILABS#####

fabricpath domain default
authentication-type md5
authentication key-chain fp-key-chain
authentication-check

#####Interface level for DCI Hello PDU Authentication####
interface Ethernet3/41
fabricpath isis authentication-type md5
fabricpath isis authentication key-chain fp-key-chain

#####Nexus 7k FP Interface Authentication OFF#####
#####2014 AMILABS#####

#####Nexu 7k FP global LSP and SNP Authentication####
#####2014 AMILABS#####

fabricpath domain default
no authentication-type md5
no authentication key-chain fp-key-chain
no authentication-check

#####Interface level for DCI Hello PDU Authentication####
interface Ethernet3/41
no fabricpath isis authentication-type md5
no fabricpath isis authentication key-chain fp-key-chain
```

4.0 Embedded Event Manager Applets to flip/flap interfaces for testing use

```
event manager applet flap
  description "***State U DC Migration Int. Flapping applet v1.0****"
  action 1.5 cli command "config t"
  action 2.0 cli command "eth 3/41"
  action 2.5 cli command "shut"
  action 3.0 cli command "no shut"
  action 3.5 cli command "end"
  action 4.0 cli exit
event manager applet flap1
  action 1.5 cli command config term
  action 2.0 cli command eth 3/41
  action 2.5 cli command shut
  action 3.0 cli command sh int eth 3/41 brie
  action 3.5 cli command no shut
  action 4.0 cli command sh int eth 3/41 brie
  action 4.5 cli sh int eth3/41 brie
```


5.0 State U Core 65k VSS OPS Menu

```
Server "LOC2VSS-SW1"   Line 0   Terminal-type (unknown)
***** State U ISTB1 VSS Router Management Menu *****
 1      Display HSRP State
 2      Display LACP Neighbors
 3      Display Port-channel 200
 4      Display Portchannel 200 summary
 5      Display VSS CDP Neighbors
 6      Display VSS OSPF Neighbors
 7      Display VSS Port-channel
 8      Display VSS Link
 9      Display VSS Dual Active state
10     Display VSS Role
11     Display VSS Redundancy
12     Display VSS VSL LMP Neighbors
13     Display VSS RRP Summary
14     Display IP Routing Summary
15     STORM CONTROL ON FOR PO200
16     STORM CONTROL OFF FOR PO200
17     PORT-CHANNEL TO IO KILL SWITCH ***OFF BY Default**
18     RESUME PORT-CHANNEL TO IO
19     L3 TO State U CORE KILL SWITCH ***OFF BY Default**
20     RESUME L3 PATH TO ASU CORE
21     CLEAR all interface counters
22     DOS ON
23     DOS OFF
24     IP NBAR ON
25     IP NBAR OFF
30     Exit ASU Menu for CLI
```

>>

```

menu STATEU title ^C ***** STATEU ISTB1 VSS Router Management Menu ***** ^C
menu STATEU prompt ^C >> ^C
menu STATEU text 1 Display HSRP State
menu STATEU command 1 sh standby brie
menu STATEU options 1 pause
menu STATEU text 2 Display LACP Neighbors
menu STATEU command 2 show lacp nei
menu STATEU options 2 pause
menu STATEU text 3 Display Port-channel 200
menu STATEU command 3 show interface po200
menu STATEU options 3 pause
menu STATEU text 4 Display Portchannel 200 summary
menu STATEU command 4 Show int po200 sum
menu STATEU options 4 pause
menu STATEU text 5 Display VSS CDP Neighbors
menu STATEU command 5 show cdp nei
menu STATEU options 5 pause
menu STATEU text 6 Display VSS OSPF Neighbors
menu STATEU command 6 show ip ospf neighbor
menu STATEU options 6 pause
menu STATEU text 7 Display VSS Port-channel
menu STATEU command 7 sh switch virtual link port-channel
menu STATEU options 7 pause
menu STATEU text 8 Display VSS Link
menu STATEU command 8 show swi virtual link
menu STATEU options 8 pause
menu STATEU text 9 Display VSS Dual Active state
menu STATEU command 9 sh swi virtual dual-active summary
menu STATEU options 9 pause
menu STATEU text 10 Display VSS Role
menu STATEU command 10 sh swi virtual role det
menu STATEU options 10 pause
menu STATEU text 11 Display VSS Redundancy
menu STATEU command 11 sh swi vir redundancy
menu STATEU options 11 pause
menu STATEU text 12 Display VSS VSL LMP Neighbors
menu STATEU command 12 sh vsl lmp neighbors
menu STATEU options 12 pause
menu STATEU text 13 Display VSS RRP Summary
menu STATEU command 13 sh vsl rrp summary
menu STATEU options 13 pause
menu STATEU text 14 Display IP Routing Summary
menu STATEU command 14 sh ip route summary
menu STATEU options 14 pause
menu STATEU text 15 STORM CONTROL ON FOR PO200
menu STATEU command 15 stormon
menu STATEU text 16 STORM CONTROL OFF FOR PO200
menu STATEU command 16 stormoff
menu STATEU text 17 PORT-CHANNEL TO IO KILL SWITCH ***OFF BY Default**
menu STATEU command 17 PO200OFFIO
menu STATEU text 18 RESUME PORT-CHANNEL TO IO
menu STATEU command 18 PO200ON
menu STATEU text 19 L3 TO STATEU CORE KILL SWITCH ***OFF BY Default**
menu STATEU text 20 RESUME L3 PATH TO STATEU CORE
menu STATEU command 20 STATEUCOREON
menu STATEU text 21 CLEAR all interface counters
menu STATEU command 21 clear counters
menu STATEU text 22 DOS ON
menu STATEU command 22 doson
menu STATEU text 23 DOS OFF
menu STATEU command 23 dosoff
menu STATEU text 24 IP NBAR ON
menu STATEU command 24 nbaron

```

```
menu STATEU text 25 IP NBAR OFF
menu STATEU command 25 nbaroff
menu STATEU text 30 Exit STATEU Menu for CLI
menu STATEU command 30 menu-exit
menu STATEU clear-screen
menu STATEU status-line
menu STATEU default 30
!
```

6.0 Cisco Nexus Python Use

Using the built in Python interpreter for some future DEVOPS type functions.

Some quick python scripts to run on switches using the CheckPortDiscards() function and the cisco.cli() function.

http://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus5000/sw/python/api/python_api/API_functions.html#wp1053131

```
import os
import sys
import cisco - your main one
import socket - if you want to use some socket functions for client/server
tcp use.
```

Some python pseudo code as an example - a while loop would be better.

```
def ipinput():
    output = cisco.cli('show hostname')
    print(output)
    ipadd = raw_input('Enter IP address : ')
    clear()
    print(ipadd, "thank you")
    cisco.cli("ping", ipadd)
    yn = raw_input('is this correct(Y/N: ')
    if raw_input = 'y':
        cisco.cli("config t")
        cisco.cli("interface vlan2")
        cisco.cli("ip address", ipadd)
        cisco.cli("end")
        cisco.cli("show interface vlan2")
    elif raw_input = 'n'
        print("Let's try again")
    def ipinput()

print(time.asctime())

fproute = "show fabricpath route"
cisco.cli(fproute)

cisco.cli("config t")
cisco.cli("ping 1.1.1.1")
```

```
for screen clearing
def clear():
    print('\n' * 50)

def cls():
    os.system(['clear','cls'][os.name == 'nt'])

class hostname:
    def hosts():
        host = socket.gethostname()
        print("show hostname using sockets object")
        cisco.cli('show hostname')
        print("show hostname using nexus object")
        print(host)

Test read of a config file
7kDC1# >>> testfile = open('/bootflash/FPAUTHON7k.cfg')
7kDC1# >>> auth = testfile.read()
7kDC1# >>> print(auth)
```