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1 Introduzione

Il presente documento si propone di definire un collegamento tra VDC (Virtual Context Domain) all'interno di una coppia di Nexus N7K Cisco e di un collegamento tra 2xN7K - 1xN5K - 1xN2K-FEX

2 Collegamento VDC tra Nexus N7K

Architettura di riferimento:

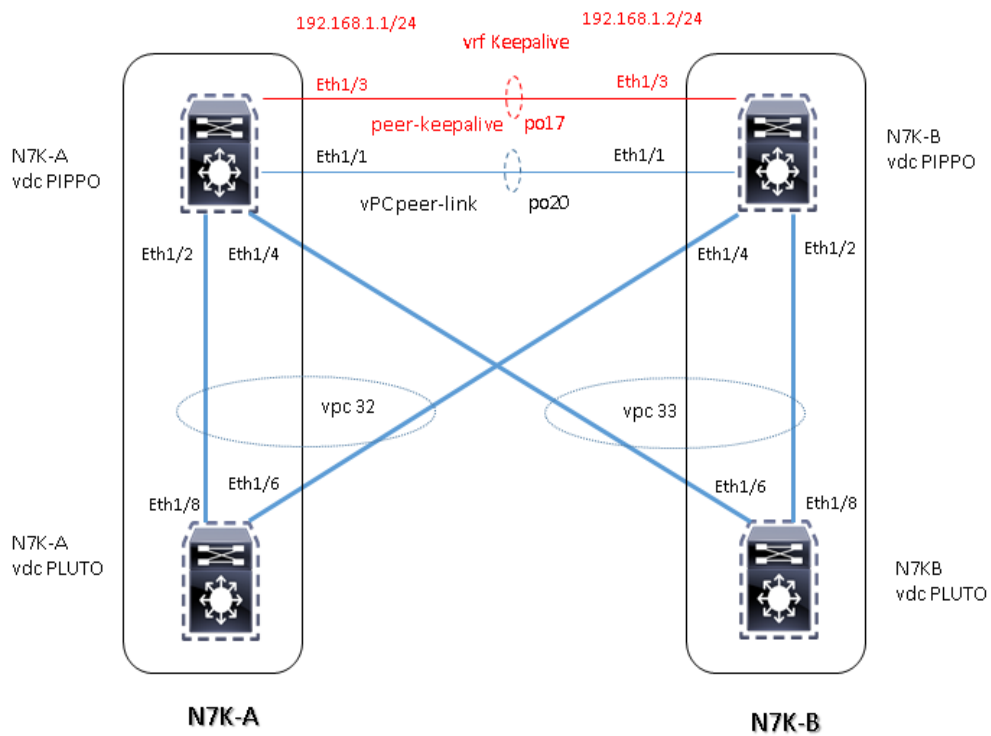


Figura 1: VDC connection between Nexus Devices

Configurazioni di riferimento:

Config VDC Nexus N7K-A

```
N7K-A# sh running-config
!Command: show running-config
version 5.2(3a)
hostname N7K-A
no vdc combined-hostname
vdc N7K-A-PIPPA id 1
  limit-resource vlan minimum 16 maximum 4094
  limit-resource monitor-session minimum 0 maximum 2
  limit-resource monitor-session-erspan-dst minimum 0 maximum 23
  limit-resource vrf minimum 2 maximum 4096
  limit-resource port-channel minimum 0 maximum 768
  limit-resource u4route-mem minimum 96 maximum 96
  limit-resource u6route-mem minimum 24 maximum 24
  limit-resource m4route-mem minimum 58 maximum 58
  limit-resource m6route-mem minimum 8 maximum 8
vdc N7K-A-PLUTO id 2
  allocate interface Ethernet1/6,Ethernet1/8
  boot-order 1
  limit-resource vlan minimum 16 maximum 4094
  limit-resource monitor-session minimum 0 maximum 2
  limit-resource monitor-session-erspan-dst minimum 0 maximum 23
  limit-resource vrf minimum 2 maximum 4096
  limit-resource port-channel minimum 0 maximum 768
  limit-resource u4route-mem minimum 8 maximum 8
  limit-resource u6route-mem minimum 4 maximum 4
  limit-resource m4route-mem minimum 8 maximum 8
  limit-resource m6route-mem minimum 5 maximum 5
!
feature tacacs+
cfs eth distribute
feature bgp
feature pbr
feature udld
feature interface-vlan
feature hsrp
```

```
feature lACP
feature vpc
feature vtp
feature bfd
!
vtp mode transparent
!
vlan 5
  name AA
vlan 6
  name BB
vlan 130
  name CC
vlan 813
  name DD
vlan 1000
  name NATIVE
!
spanning-tree port type edge bpduguard default
spanning-tree vlan 5,6,130,813,1000 priority 4096
!
lACP system-priority 8192
port-channel load-balance src-dst l4port
!
vpc domain 20
  role priority 8192
  system-priority 8192
  peer-keepalive destination 192.168.1.2 source 192.168.1.1 vrf keepalive
  peer-gateway
  auto-recovery
  ip arp synchronize
!
interface port-channel17
  description to-N7K-B-keepalive
  vrf member keepalive
  ip address 192.168.1.1/24
!
!
```

```
interface port-channel20
  description to-N7K-peerlink
  switchport
  switchport mode trunk
  switchport trunk native vlan 1000
  spanning-tree port type network
  vpc peer-link
!
interface port-channel32
  description to_N7K-A-PLUTO
  switchport
  switchport mode trunk
  switchport trunk native vlan 1000
  switchport trunk allowed vlan 5-6,130,813
  vpc 32
!
interface port-channel33
  description to-N7K-B-PLUTO
  switchport
  switchport mode trunk
  switchport trunk native vlan 1000
  switchport trunk allowed vlan 5-6,130,813
  vpc 33
!
interface Ethernet1/1
  description to_N7K-B-peerlink
  switchport
  switchport mode trunk
  switchport trunk native vlan 1000
  channel-group 20 mode active
  no shutdown
!
interface Ethernet1/2
  description to-N7K-A-PLUTO
  switchport
  switchport mode trunk
  switchport trunk native vlan 1000
```

```
switchport trunk allowed vlan 5-6,130,813
channel-group 32 mode active
no shutdown
!
interface Ethernet1/3
description to_N7K-B-keepalive
channel-group 17 mode active
no shutdown
!
interface Ethernet1/4
description to-N7K-B-PLUTO
switchport
switchport mode trunk
switchport trunk native vlan 1000
switchport trunk allowed vlan 5-6,130,813
channel-group 33 mode active
no shutdown
!
N7K-A-PLUTO# sh running-config
!Command: show running-config
!
version 5.2(3a)
hostname BO-VMX012-L3
!
feature tacacs+
cfs eth distribute
feature bgp
feature pbr
feature udld
feature interface-vlan
feature hsrp
feature lacp
feature bfd
!
vlan 5
name AA
vlan 6
```

```
name BB
vlan 130
name CC
vlan 813
name DD
vlan 1000
name NATIVE
!
interface port-channel32
description to-N7K-PIPPO
switchport
switchport mode trunk
switchport trunk native vlan 1000
switchport trunk allowed vlan 5-6,130,813
spanning-tree port type normal
!
interface Ethernet1/6
description to-N7K-PIPPO
switchport
switchport mode trunk
switchport trunk native vlan 1000
switchport trunk allowed vlan 5,6-130,813
channel-group 32 mode active
no shutdown
!
interface Ethernet1/8
description to-N7K-PIPPO
switchport
switchport mode trunk
switchport trunk native vlan 1000
switchport trunk allowed vlan 5,6-130,813
channel-group 32 mode active
no shutdown
!
```

Tabella 1: configurazione L2 VDC Nexus N7K-A

Config VDC Nexus N7K-B

```
N7K-B# sh running-config
!Command: show running-config
version 5.2(3a)
hostname N7K-A
no vdc combined-hostname
vdc N7K-B-PIPP0 id 1
  limit-resource vlan minimum 16 maximum 4094
  limit-resource monitor-session minimum 0 maximum 2
  limit-resource monitor-session-erspan-dst minimum 0 maximum 23
  limit-resource vrf minimum 2 maximum 4096
  limit-resource port-channel minimum 0 maximum 768
  limit-resource u4route-mem minimum 96 maximum 96
  limit-resource u6route-mem minimum 24 maximum 24
  limit-resource m4route-mem minimum 58 maximum 58
  limit-resource m6route-mem minimum 8 maximum 8
vdc N7K-B-PLUTO id 2
  allocate interface Ethernet1/6,Ethernet1/8
  boot-order 1
  limit-resource vlan minimum 16 maximum 4094
  limit-resource monitor-session minimum 0 maximum 2
  limit-resource monitor-session-erspan-dst minimum 0 maximum 23
  limit-resource vrf minimum 2 maximum 4096
  limit-resource port-channel minimum 0 maximum 768
  limit-resource u4route-mem minimum 8 maximum 8
  limit-resource u6route-mem minimum 4 maximum 4
  limit-resource m4route-mem minimum 8 maximum 8
  limit-resource m6route-mem minimum 5 maximum 5
!
feature tacacs+
cfs eth distribute
feature bgp
feature pbr
feature udd
feature interface-vlan
```



```
feature hsrp
feature lacp
feature vpc
feature vtp
feature bfd
!
vtp mode transparent
!
vlan 5
  name AA
vlan 6
  name BB
vlan 130
  name CC
vlan 813
  name DD
vlan 1000
  name NATIVE
!
spanning-tree port type edge bpduguard default
spanning-tree vlan 5,6,130,813,1000 priority 8192
!
lacp system-priority 8192
port-channel load-balance src-dst l4port
!
vpc domain 20
  system-priority 8192
  peer-keepalive destination 192.168.1.1 source 192.168.1.2 vrf keepalive
  peer-gateway
  auto-recovery
  ip arp synchronize
!
interface port-channel17
  description to-N7K-A-keepalive
  vrf member keepalive
  ip address 192.168.1.2/24
!
!
```

```
interface port-channel20
  description to-N7K-peerlink
  switchport
  switchport mode trunk
  switchport trunk native vlan 1000
  spanning-tree port type network
  vpc peer-link
!
interface port-channel32
  description to_N7K-A-PLUTO
  switchport
  switchport mode trunk
  switchport trunk native vlan 1000
  switchport trunk allowed vlan 5-6,130,813
  vpc 32
!
interface port-channel33
  description to-N7K-B-PLUTO
  switchport
  switchport mode trunk
  switchport trunk native vlan 1000
  switchport trunk allowed vlan 5-6,130,813
  vpc 33
!
interface Ethernet1/1
  description to_N7K-B-peerlink
  switchport
  switchport mode trunk
  switchport trunk native vlan 1000
  channel-group 20 mode active
  no shutdown
!
interface Ethernet1/2
  description to-N7K-B-PLUTO
  switchport
  switchport mode trunk
  switchport trunk native vlan 1000
```

```
switchport trunk allowed vlan 5-6,130,813
channel-group 32 mode active
no shutdown
!
interface Ethernet1/3
description to_N7K-A-keepalive
channel-group 17 mode active
no shutdown
!
interface Ethernet1/4
description to-N7K-A-PLUTO
switchport
switchport mode trunk
switchport trunk native vlan 1000
switchport trunk allowed vlan 5-6,130,813
channel-group 33 mode active
no shutdown
!
N7K-B-PLUTO# sh running-config
!Command: show running-config
!
version 5.2(3a)
hostname BO-VMX012-L3
!
feature tacacs+
cfs eth distribute
feature bgp
feature pbr
feature udld
feature interface-vlan
feature hsrp
feature lacp
feature bfd
!
vlan 5
name AA
vlan 6
```

```
name BB
vlan 130
name CC
vlan 813
name DD
vlan 1000
name NATIVE
!
interface port-channel33
description to-N7K-PIPPO
switchport
switchport mode trunk
switchport trunk native vlan 1000
switchport trunk allowed vlan 5-6,130,813
spanning-tree port type normal
!
interface Ethernet1/6
description to-N7K-PIPPO
switchport
switchport mode trunk
switchport trunk native vlan 1000
switchport trunk allowed vlan 5,6-130,813
channel-group 33 mode active
no shutdown
!
interface Ethernet1/8
description to-N7K-PIPPO
switchport
switchport mode trunk
switchport trunk native vlan 1000
switchport trunk allowed vlan 5,6-130,813
channel-group 33 mode active
no shutdown
!
```

Tabella 2: configurazione L2 VDC Nexus N7K-B

3 Collegamento di accesso 2xN7K - 1xN5K - 1xN2K-FEX

Architettura di riferimento:

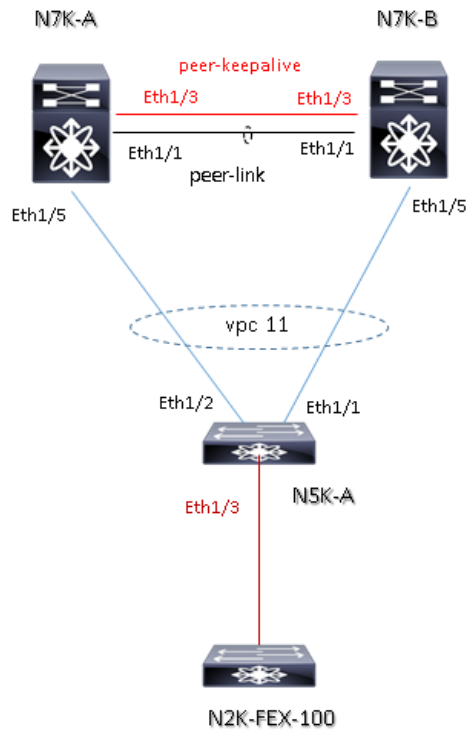


Figura 2: collegamento di accesso 2xN7K – 1xN5K- 1xN2K-FEX100

Configurazioni di riferimento:

N5K: collegamento vpc verso il FEX100 + coppia N7K di distribuzione

N5K-C# sh running-config

!Command: show running-config

!

version 7.1(4)N1(1)

hostname N5K-C

!

feature telnet

feature tacacs+

cfs eth distribute

feature bgp

feature udd

feature interface-vlan

feature hsrp

feature lacp

feature vpc

feature lldp

feature vtp

feature fex

!

vtp mode transparent

!

fex 100

pinning max-links 1

description "FEX100"

!

vlan 5

name AA

vlan 6

name BB

vlan 130

name CC

vlan 813

name DD

vlan 1000

```
name NATIVE
!
spanning-tree vlan 1, 9, 10, 13, 813, 1000 priority 61440
!
interface port-channel11
  description to-N7K
  switchport mode trunk
  switchport trunk native vlan 1000
  switchport trunk allowed vlan 5,6-130,813
!
interface port-channel100
  description ACCESSO-FEX100
  switchport mode fex-fabric
  fex associate 100
!
interface Ethernet1/1
  description to-N7K-B
  switchport mode trunk
  switchport trunk native vlan 1000
  switchport trunk allowed vlan 5,6-130,813
  speed auto
  channel-group 11 mode active

interface Ethernet1/2
  description to-N7K-A
  switchport mode trunk
  switchport trunk native vlan 1000
  switchport trunk allowed vlan 5,6-130,813
  speed auto
  channel-group 11 mode active
!
interface Ethernet1/3
  description to-FEX100
  switchport mode fex-fabric
  fex associate 100
  channel-group 100
!
```

```
interface Ethernet100/1/1
  description PC-vlan5
  switchport access vlan 5
  no shutdown
!
interface Ethernet100/1/3
  description PC-vlan6
  switchport access vlan 6
  no shutdown
!
```

Tabella 3: collegamento di accesso N5K-C verso la coppia di N7K e verso il FEX N2K

N7K-A: config vpc to accesso Nexus N5K + FEX100

```
N7K-A# sh running-config
!Command: show running-config
version 5.2(3a)
hostname N7K-A
!
feature tacacs+
cfs eth distribute
feature bgp
feature pbr
feature udd
feature interface-vlan
feature hsrp
feature lacp
feature vpc
feature vtp
feature bfd
!
vtp mode transparent
```



```
!  
vlan 5  
  name AA  
vlan 6  
  name BB  
vlan 130  
  name CC  
vlan 813  
  name DD  
vlan 1000  
  name NATIVE  
!  
spanning-tree port type edge bpduguard default  
spanning-tree vlan 5,6,130,813,1000 priority 4096  
!  
lacp system-priority 8192  
port-channel load-balance src-dst l4port  
!  
vpc domain 20  
  role priority 8192  
  system-priority 8192  
  peer-keepalive destination 192.168.1.2 source 192.168.1.1 vrf keepalive  
  peer-gateway  
  auto-recovery  
  ip arp synchronize  
!  
interface port-channel17  
  description to-N7K-B-keepalive  
  vrf member keepalive  
  ip address 192.168.1.1/24  
!  
interface port-channel20  
  description to-N7K-peerlink  
  switchport  
  switchport mode trunk  
  switchport trunk native vlan 1000  
  spanning-tree port type network  
  vpc peer-link
```

```
!  
  
interface port-channel11  
  description to_BO-VFX003  
  switchport  
  switchport mode trunk  
  switchport trunk native vlan 1000  
  switchport trunk allowed vlan 5,6,130,813  
  vpc 11  
!  
  
interface Ethernet1/5  
  description to_N5K-C-accesso  
  switchport  
  switchport mode trunk  
  switchport trunk native vlan 1000  
  switchport trunk allowed vlan 5,6,130,813  
  channel-group 11 mode active  
  no shutdown  
!
```

Tabella 4: collegamento N7K-A verso l'accesso N5K in vpc

N7KB: config vpc to accesso Nexus N5K + FEX100

```
N7K-B# sh running-config  
!  
!Command: show running-config  
version 5.2(3a)  
hostname N7K-A  
no vdc combined-hostname  
!  
feature tacacs+  
cfs eth distribute  
feature bgp  
feature pbr
```

```
feature udld
feature interface-vlan
feature hsrp
feature lacp
feature vpc
feature vtp
feature bfd
!
vtp mode transparent
!
vlan 5
  name AA
vlan 6
  name BB
vlan 130
  name CC
vlan 813
  name DD
vlan 1000
  name NATIVE
!
spanning-tree port type edge bpduguard default
spanning-tree vlan 5,6,130,813,1000 priority 8192
!
lacp system-priority 8192
port-channel load-balance src-dst l4port
!
vpc domain 20
  system-priority 8192
  peer-keepalive destination 192.168.1.1 source 192.168.1.2 vrf keepalive
  peer-gateway
  auto-recovery
  ip arp synchronize
!
interface port-channel17
  description to-N7K-A-keepalive
  vrf member keepalive
  ip address 192.168.1.2/24
```

```
!  
!  
interface port-channel20  
  description to-N7K-peerlink  
  switchport  
  switchport mode trunk  
  switchport trunk native vlan 1000  
  spanning-tree port type network  
  vpc peer-link  
!  
interface port-channel11  
  description to-N5K-accesso  
  switchport  
  switchport mode trunk  
  switchport trunk native vlan 1000  
  switchport trunk allowed vlan 5,6-130,813  
  flowcontrol send on  
  vpc 11  
!  
interface Ethernet1/5  
  description to-N5K-accesso  
  switchport  
  switchport mode trunk  
  switchport trunk native vlan 1000  
  switchport trunk allowed vlan 5,6-130,813  
  flowcontrol send on  
  channel-group 11 mode active  
  no shutdown  
!
```

Tabella 5: collegamento N7K-B verso l'accesso N5K in vpc