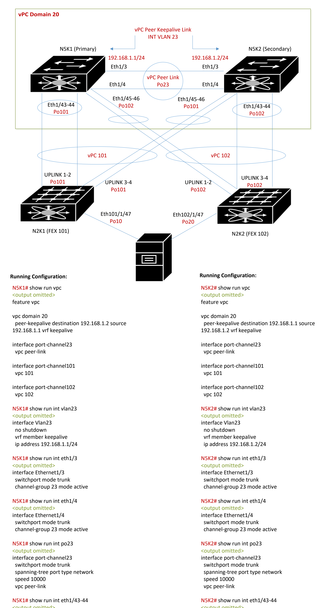
vPC Domain 20



Running Configuration:

```
N5K1# show run vpc
<output omitted>
feature vpc

vpc domain 20
  peer-keepalive destination 192.168.1.2 source
192.168.1.1 vrf keepalive

interface port-channel23
  vpc peer-link

interface port-channel101
  vpc 101

interface port-channel102
  vpc 102

N5K1# show run int vlan23
<output omitted>
interface Vlan23
  no shutdown
  vrf member keepalive
  ip address 192.168.1.1/24

N5K1# show run int eth1/3
<output omitted>
interface Ethernet1/3
  switchport mode trunk
  channel-group 23 mode active

N5K1# show run int eth1/4
<output omitted>
interface Ethernet1/4
  switchport mode trunk
  channel-group 23 mode active

N5K1# show run int po23
<output omitted>
interface port-channel23
  switchport mode trunk
  spanning-tree port type network
  speed 10000
  vpc peer-link

N5K1# show run int eth1/43-44
<output omitted>
interface Ethernet1/43
  switchport mode fex-fabric
  fex associate 101
  channel-group 101

interface Ethernet1/44
  switchport mode fex-fabric
  fex associate 101
  channel-group 101

N5K1# show run int po101
<output omitted>
interface port-channel101
  switchport mode fex-fabric
  fex associate 101
  vpc 101

N5K1# show run int eth1/45-46
<output omitted>
interface Ethernet1/45
  switchport mode fex-fabric
  fex associate 102
  channel-group 102

interface Ethernet1/46
  switchport mode fex-fabric
  fex associate 102
  channel-group 102

N5K1# show run int po102
<output omitted>
interface port-channel102
  switchport mode fex-fabric
  fex associate 102
  vpc 102

N5K1# show run int eth101/1/47
<output omitted>
interface Ethernet101/1/47
  switchport access vlan 101
  channel-group 10

N5K1# show run int po10
<output omitted>
interface port-channel10
  switchport access vlan 101
  speed 10000

N5K1# show run int eth102/1/47
<output omitted>
interface Ethernet102/1/47
  switchport access vlan 102
  channel-group 20

N5K1# show run int po20
<output omitted>
interface port-channel20
  switchport access vlan 102
  speed 10000
```

Running Configuration:

```
N5K2# show run vpc
<output omitted>
feature vpc

vpc domain 20
  peer-keepalive destination 192.168.1.1 source
192.168.1.2 vrf keepalive

interface port-channel23
  vpc peer-link

interface port-channel101
  vpc 101

interface port-channel102
  vpc 102

N5K2# show run int vlan23
<output omitted>
interface Vlan23
  no shutdown
  vrf member keepalive
  ip address 192.168.1.2/24

N5K2# show run int eth1/3
<output omitted>
interface Ethernet1/3
  switchport mode trunk
  channel-group 23 mode active

N5K2# show run int eth1/4
<output omitted>
interface Ethernet1/4
  switchport mode trunk
  channel-group 23 mode active

N5K2# show run int po23
<output omitted>
interface port-channel23
  switchport mode trunk
  spanning-tree port type network
  speed 10000
  vpc peer-link

N5K2# show run int eth1/43-44
<output omitted>
interface Ethernet1/43
  switchport mode fex-fabric
  fex associate 101
  channel-group 101

interface Ethernet1/44
  switchport mode fex-fabric
  fex associate 101
  channel-group 101

N5K2# show run int po101
<output omitted>
interface port-channel101
  switchport mode fex-fabric
  fex associate 101
  vpc 101

N5K2# show run int eth1/45-46
<output omitted>
interface Ethernet1/45
  switchport mode fex-fabric
  fex associate 102
  channel-group 102

interface Ethernet1/46
  switchport mode fex-fabric
  fex associate 102
  channel-group 102

N5K2# show run int po102
<output omitted>
interface port-channel102
  switchport mode fex-fabric
  fex associate 102
  vpc 102

N5K2# show run int eth101/1/47
<output omitted>
interface Ethernet101/1/47
  switchport access vlan 101
  channel-group 10

N5K2# show run int po10
<output omitted>
interface port-channel10
  switchport access vlan 101
  speed 10000

N5K2# show run int eth102/1/47
<output omitted>
interface Ethernet102/1/47
  switchport access vlan 102
  channel-group 20

N5K2# show run int po20
<output omitted>
interface port-channel20
  switchport access vlan 102
  speed 10000
```

Basic Verification Commands:

```
N5K1# ping 192.168.1.2 vrf keepalive
PING 192.168.1.2 (192.168.1.2): 56 data bytes
64 bytes from 192.168.1.2: icmp_seq=0 ttl=254 time=1.258 ms
64 bytes from 192.168.1.2: icmp_seq=1 ttl=254 time=0.972 ms
64 bytes from 192.168.1.2: icmp_seq=2 ttl=254 time=0.97 ms
64 bytes from 192.168.1.2: icmp_seq=3 ttl=254 time=0.922 ms
64 bytes from 192.168.1.2: icmp_seq=4 ttl=254 time=0.953 ms

--- 192.168.1.2 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 0.922/1.015/1.258 ms

N5K1# show ulan brief

VLAN Name                             Status    Ports
----------------------------------------------------------------
<output omitted>
23   keepalive                        active    Po23, Eth1/3, Eth1/4
101  VLAN0101                         active    Po10, Po23, Eth1/3, Eth1/4
                                                Eth101/1/47
102  VLAN0102                         active    Po20, Po23, Eth1/3, Eth1/4
                                                Eth102/1/47

N5K1# show vpc role

vPC Role status
----------------------------------------------------------------
vPC role                              : primary
Dual Active Detection Status          : 0
vPC system-mac                        : 00:23:04:ee:be:14
vPC system-priority                   : 32667
vPC local system-mac                  : 8c:60:4f:2c:14:81
vPC local role-priority               : 32667

N5K1# show vpc peer-keepalive

vPC keep-alive status          : peer is alive
--Peer is alive for            : (4936) seconds, (715) msec
--Send status                  : Success
--Last send at                 : 2022.05.11 14:57:36 127 ms
--Sent on interface            : Vlan23
--Receive status               : Success
--Last receive at              : 2022.05.11 14:57:36 127 ms
--Received on interface        : Vlan23
--Last update from peer        : (0) seconds, (849) msec

vPC Keep-alive parameters
--Destination                  : 192.168.1.2
--Keepalive interval           : 1000 msec
--Keepalive timeout            : 5 seconds
--Keepalive hold timeout       : 3 seconds
--Keepalive vrf                keepalive
--Keepalive udp port           3200
--Keepalive tos                192

N5K1# show vpc
Legend:
                (*) - local vPC is down, forwarding via vPC peer-link

vPC domain id                     : 20
Peer status                       : peer adjacency formed ok
vPC keep-alive status             : peer is alive
Configuration consistency status  : success
Per-vlan consistency status       : success
Type-2 consistency status         : success
vPC role                          : primary
Number of vPC configured          : 100
Peer Gateway                      : Disabled
Dual-active excluded VLANs        : -
Graceful Consistency Check        : Enabled
Operational Layer3 Peer-router    : Disabled
Auto-recovery status              : Enabled (timeout = 240 seconds)

vPC Peer-link status
---------------------------------------------------------------------
id   Port   Status Active vlans
--   ----   ------ -------------------------------------------------
1    Po23   up     1,23,101-102

vPC status
----------------------------------------------------------------------------
id   Port   Status Consistency Reason                Active vlans
--   ----   ------ ----------- ------                ------------
101  Po101  up     success     success               -
102  Po102  up     success     success               -
<output omitted>
262153 Po10    up     success     success               101

262163 Po20    up     success     success               102

N5K1# show vpc consistency-parameters global

  Legend:
    Type 1 : vPC will be suspended in case of mismatch

Name                  Type  Local Value            Peer Value
-------------         ----  ---------------------  -----------------------
QoS                   3     (7) 0 (1) 3 (2) 4 (3)  (7) 0 (1) 3 (2) 4 (3)
                            (4) 5 (5) 6 (6) 7      (4) 5 (5) 6 (6) 7
Network QoS (MTU)     3     (1538, 0, 0, 0, 0, 0)  (1538, 0, 0, 0, 0, 0)
Network Qos (Pause)   2     (F, F, F, F, F, F)     (F, F, F, F, F, F)
Input Queuing (Bandwidth) 2 (100, 0, 0, 0, 0, 0)   (100, 0, 0, 0, 0, 0)
Input Queuing (Absolute Priority)  2  (F, F, F, F, F, F)  (F, F, F, F, F, F)
Output Queuing (Bandwidth)  2  (100, 0, 0, 0, 0, 0)  (100, 0, 0, 0, 0, 0)
Output Queuing (Absolute Priority)  2  (F, F, F, F, F, F)  (F, F, F, F, F, F)
Vlan to Vn-segment Map  1     No Relevant Maps     No Relevant Maps
STP Mode              1     Rapid-PVST           Rapid-PVST
STP Disabled          1     None                 None
STP MST Region Name   1     "                    "
STP MST Region Revision  1  0                    0
STP MST Region Instance to 1
  VLAN Mapping
STP Loopguard         1     Disabled             Disabled
STP Bridge Assurance  1     Enabled              Enabled
STP Port Type, Edge   1     Normal, Disabled,    Normal, Disabled,
BPDUFilter, Edge BPDUGuard  Disabled             Disabled
STP MST Simulate PVST 1     Enabled              Enabled
Interface-vlan admin up   2 23                   23
Interface-vlan routing    2 1,23                 1,23
capability
IGMP Snooping Group-Limit 2 4000                 4000
Allowed VLANs         -     1,23,101-102         1,23,101-102
Local suspended VLANs -     -                    -

N5K1# show port-channel summ
Flags:  D - Down        P - Up in port-channel (members)
        I - Individual  H - Hot-standby (LACP only)
        s - Suspended   r - Module-removed
        S - Switched    R - Routed
        U - Up (port-channel)
        M - Not in use. Min-links not met

----------------------------------------------------------------------------
Group Port-       Type  Protocol  Member Ports
      Channel
----------------------------------------------------------------------------
10    Po10(SU)    Eth   NONE      Eth101/1/47(P)
20    Po20(SU)    Eth   NONE      Eth102/1/47(P)
23    Po23(SU)    Eth   LACP      Eth1/3(P)  Eth1/4(P)
101   Po101(SU)   Eth   NONE      Eth1/43(P) Eth1/44(P)
102   Po102(SU)   Eth   NONE      Eth1/45(P) Eth1/46(P)

N5K1# show int fex-fabric
----------------------------------------------------------------------------
Fabric    Fabric    Fex   FEX       Fex
Fex Port  Port State  Uplink  Model     Serial
----------------------------------------------------------------------------
101 Eth1/43   Active  1     N2K-C2248PQ-10GE  FOC18418219
101 Eth1/44   Active  5     N2K-C2248PQ-10GE  FOC18418219
101 Eth1/45   Active  9     N2K-C2248PQ-10GE  FOC17380067
102 Eth1/46   Active  5     N2K-C2248PQ-10GE  FOC17380067

N5K1# show fex
----------------------------------------------------------------------------
FEX       FEX       FEX       FEX       Fex
Number    Description  State   Model     Serial
----------------------------------------------------------------------------
101       FEX0101   Online    N2K-C2248PQ-10GE  FOC18418219
102       FEX0102   Online    N2K-C2248PQ-10GE  FOC17380067

N5K1# show fex 101
FEX: 101 Description: FEX0101  state: Online
  FEX version: 7.3(0)N1(1) [Switch version: 7.3(0)N1(1)]
  Extender Serial: FOC18418219
  Extender Model: N2K-C2248PQ-10GE, Part No: 73-14775-03
  Pinning-mode: static  Max-links: 1
  Fabric port for control traffic: Eth1/43
  FCoE Admin: false
  FCoE Oper: true
  FCoE FEX AA Configured: false
  Fabric interface state:
    Po101 - Interface Up. State: Active
    Eth1/43 - Interface Up. State: Active
    Eth1/44 - Interface Up. State: Active

N5K1# show fex 102
FEX: 102 Description: FEX0102  state: Online
  FEX version: 7.3(0)N1(1) [Switch version: 7.3(0)N1(1)]
  Extender Serial: FOC17380067
  Extender Model: N2K-C2248PQ-10GE, Part No: 73-14775-03
  Pinning-mode: static  Max-links: 1
  Fabric port for control traffic: Eth1/45
  FCoE Admin: false
  FCoE Oper: true
  FCoE FEX AA Configured: false
  Fabric interface state:
    Po102 - Interface Up. State: Active
    Eth1/45 - Interface Up. State: Active
    Eth1/46 - Interface Up. State: Active
```

Basic Verification Commands:

```
N5K2# ping 192.168.1.1 vrf keepalive
PING 192.168.1.1 (192.168.1.1): 56 data bytes
64 bytes from 192.168.1.1: icmp_seq=0 ttl=254 time=4.71 ms
64 bytes from 192.168.1.1: icmp_seq=1 ttl=254 time=0.791 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=254 time=0.777 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=254 time=0.789 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=254 time=0.793 ms

--- 192.168.1.1 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 0.789/1.582/4.71 ms

N5K2# show ulan brief

VLAN Name                             Status    Ports
----------------------------------------------------------------
<output omitted>
23   keepalive                        active    Po23, Eth1/3, Eth1/4
101  VLAN0101                         active    Po10, Po23, Eth1/3, Eth1/4
                                                Eth101/1/47
102  VLAN0102                         active    Po20, Po23, Eth1/3, Eth1/4
                                                Eth102/1/47

N5K2# show vpc role

vPC Role status
----------------------------------------------------------------
vPC role                              : secondary
Dual Active Detection Status          : 0
vPC system-mac                        : 00:23:04:ee:be:14
vPC system-priority                   : 32667
vPC local system-mac                  : 8c:60:4f:4d:f9:3c
vPC local role-priority               : 32667

N5K2# show vpc peer-keepalive

vPC keep-alive status          : peer is alive
--Peer is alive for            : (6214) seconds, (122) msec
--Send status                  : Success
--Last send at                 : 2022.05.11 15:19:39 276 ms
--Sent on interface            : Vlan23
--Receive status               : Success
--Last receive at              : 2022.05.11 15:19:39 276 ms
--Received on interface        : Vlan23
--Last update from peer        : (0) seconds, (231) msec

vPC Keep-alive parameters
--Destination                  : 192.168.1.1
--Keepalive interval           : 1000 msec
--Keepalive timeout            : 5 seconds
--Keepalive hold timeout       : 3 seconds
--Keepalive vrf                keepalive
--Keepalive udp port           3200
--Keepalive tos                192

N5K2# show vpc
Legend:
                (*) - local vPC is down, forwarding via vPC peer-link

vPC domain id                     : 20
Peer status                       : peer adjacency formed ok
vPC keep-alive status             : peer is alive
Configuration consistency status  : success
Per-vlan consistency status       : success
Type-2 consistency status         : success
vPC role                          : secondary
Number of vPC configured          : 100
Peer Gateway                      : Disabled
Dual-active excluded VLANs        : -
Graceful Consistency Check        : Enabled
Operational Layer3 Peer-router    : Disabled
Auto-recovery status              : Enabled (timeout = 240 seconds)

vPC Peer-link status
---------------------------------------------------------------------
id   Port   Status Active vlans
--   ----   ------ -------------------------------------------------
1    Po23   up     1,23,101-102

vPC status
----------------------------------------------------------------------------
id   Port   Status Consistency Reason                Active vlans
--   ----   ------ -----------  ------               ------------
101  Po101  up     success     success               -
102  Po102  up     success     success               -
<output omitted>
262153 Po10    up     success     success               101

262163 Po20    up     success     success               102

N5K2# show vpc consistency-parameters global

  Legend:
    Type 1 : vPC will be suspended in case of mismatch

Name                  Type  Local Value            Peer Value
-------------         ----  ---------------------  -----------------------
QoS                   3     (7) 0 (1) 3 (2) 4 (3)  (7) 0 (1) 3 (2) 4 (3)
                            (4) 5 (5) 6 (6) 7      (4) 5 (5) 6 (6) 7
Network QoS (MTU)     3     (1538, 0, 0, 0, 0, 0)  (1538, 0, 0, 0, 0, 0)
Network Qos (Pause)   2     (F, F, F, F, F, F)     (F, F, F, F, F, F)
Input Queuing (Bandwidth) 2 (100, 0, 0, 0, 0, 0)   (100, 0, 0, 0, 0, 0)
Input Queuing (Absolute Priority)  2  (F, F, F, F, F, F)  (F, F, F, F, F, F)
Output Queuing (Bandwidth)  2  (100, 0, 0, 0, 0, 0)  (100, 0, 0, 0, 0, 0)
Output Queuing (Absolute Priority)  2  (F, F, F, F, F, F)  (F, F, F, F, F, F)
Vlan to Vn-segment Map  1     No Relevant Maps     No Relevant Maps
STP Mode              1     Rapid-PVST           Rapid-PVST
STP Disabled          1     None                 None
STP MST Region Name   1     "                    "
STP MST Region Revision  1  0                    0
STP MST Region Instance to 1
  VLAN Mapping
STP Loopguard         1     Disabled             Disabled
STP Bridge Assurance  1     Enabled              Enabled
STP Port Type, Edge   1     Normal, Disabled,    Normal, Disabled,
BPDUFilter, Edge BPDUGuard  Disabled             Disabled
STP MST Simulate PVST 1     Enabled              Enabled
Interface-vlan admin up   2 23                   23
Interface-vlan routing    2 1,23                 1,23
capability
IGMP Snooping Group-Limit 2 4000                 4000
Allowed VLANs         -     1,23,101-102         1,23,101-102
Local suspended VLANs -     -                    -

N5K2# show port-channel summ
Flags:  D - Down        P - Up in port-channel (members)
        I - Individual  H - Hot-standby (LACP only)
        s - Suspended   r - Module-removed
        S - Switched    R - Routed
        U - Up (port-channel)
        M - Not in use. Min-links not met

----------------------------------------------------------------------------
Group Port-       Type  Protocol  Member Ports
      Channel
----------------------------------------------------------------------------
10    Po10(SU)    Eth   NONE      Eth101/1/47(P)
20    Po20(SU)    Eth   NONE      Eth102/1/47(P)
23    Po23(SU)    Eth   LACP      Eth1/3(P)  Eth1/4(P)
101   Po101(SU)   Eth   NONE      Eth1/43(P) Eth1/44(P)
102   Po102(SU)   Eth   NONE      Eth1/45(P) Eth1/46(P)

N5K2# show int fex-fabric
----------------------------------------------------------------------------
Fabric    Fabric    Fex   FEX       Fex
Fex Port  Port State  Uplink  Model     Serial
----------------------------------------------------------------------------
102 Eth1/43   Active  9     N2K-C2248PQ-10GE  FOC17380067
102 Eth1/44   Active  13    N2K-C2248PQ-10GE  FOC17380067
101 Eth1/45   Active  9     N2K-C2248PQ-10GE  FOC18418219
101 Eth1/46   Active  13    N2K-C2248PQ-10GE  FOC18418219

N5K2# show fex
----------------------------------------------------------------------------
FEX       FEX       FEX       FEX       Fex
Number    Description  State   Model     Serial
----------------------------------------------------------------------------
101       FEX0101   Online    N2K-C2248PQ-10GE  FOC18418219
102       FEX0102   Online    N2K-C2248PQ-10GE  FOC17380067

N5K2# show fex 101
FEX: 101 Description: FEX0101  state: Online
  FEX version: 7.3(0)N1(1) [Switch version: 7.3(0)N1(1)]
  Extender Serial: FOC18418219
  Extender Model: N2K-C2248PQ-10GE, Part No: 73-14775-03
  Pinning-mode: static  Max-links: 1
  Fabric port for control traffic: Eth1/45
  FCoE Admin: false
  FCoE Oper: true
  FCoE FEX AA Configured: false
  Fabric interface state:
    Po101 - Interface Up. State: Active
    Eth1/45 - Interface Up. State: Active
    Eth1/46 - Interface Up. State: Active

N5K2# show fex 102
FEX: 102 Description: FEX0102  state: Online
  FEX version: 7.3(0)N1(1) [Switch version: 7.3(0)N1(1)]
  Extender Serial: FOC17380067
  Extender Model: N2K-C2248PQ-10GE, Part No: 73-14775-03
  Pinning-mode: static  Max-links: 1
  Fabric port for control traffic: Eth1/43
  FCoE Admin: false
  FCoE Oper: true
  FCoE FEX AA Configured: false
  Fabric interface state:
    Po102 - Interface Up. State: Active
    Eth1/43 - Interface Up. State: Active
    Eth1/44 - Interface Up. State: Active
```

*Created by Matthew Rich, TCE, Cisco Systems, Inc.