Figure A-1 illustrates the baseline best practice configuration required to set up basic VSS enabled network. The circle indicates the essential steps required to create the VSS systems from standalone. The red text highlights the important CLI information with VSS configuration. Comments are provided in blue italic font.

**Figure A-1  Overall VSS-Enabled Campus Best Practice Configuration Summary**

1. **Switch 1**
   - interface Port-channel1
     - description VSL Link from Switch 1
     - no switchport
     - no ip address
     - switch virtual link 1
     - mls qos trust cos
     - no mls qos channel-consistency
   - switch virtual domain 10
     - switch mode virtual
     - mac-address use-virtual
     - dual-active detection pagp trust channel-group 202

2. **Switch 2**
   - interface Port-channel2
     - description VSL Link from Switch 2
     - no switchport
     - no ip address
     - switch virtual link 2
     - mls qos trust cos
     - no mls qos channel-consistency

3. **Switch 1**
   - interface ten 1/5/4
     - channel-group 1 mode on
   - interface ten 1/1/1
     - channel-group 1 mode on
   - interface GigabitEthernet1/8/23
     - description Access Switch
     - switchport trunk encapsulation dot1q
     - switchport trunk native vlan 202
     - switchport trunk allowed vlan 2,102
     - channel-protocol pagp
     - channel-group 202 mode desirable

3. **Switch 2**
   - interface ten 2/5/4
     - channel-group 2 mode on
   - interface ten 2/1/1
     - channel-group 2 mode on
   - interface GigabitEthernet2/8/23
     - description Access Switch
     - switchport trunk encapsulation dot1q
     - switchport trunk native vlan 202
     - switchport trunk allowed vlan 2,102
     - channel-protocol pagp
     - channel-group 202 mode desirable
End-to-End Device Configurations

The end-to-end devices configuration is categorized into three major sections. Each section configuration contains specific CLI which is a required as part of best practice configuration and corresponding explanation.

- VSS and L2 Domain- Includes above base configuration as well as L2 domain configuration
- Access-layer- Sample L2 domain configuration
- L3 Domain - Includes global L3 configuration for VSS and core routers. Then separate section for specifics topologies (ECMP and MEC) for EIGRP and OSPF. In addition, the core devices configuration shown below are standalone router/devices.

VSS Specific

VSS Global Configuration

```
switch virtual domain 10 ! Must configure unique domain ID
switch mode virtual
switch 1 priority 110 ! Not needed, helps in operational mgmt
switch 2 priority 100 ! Not needed, helps in operational mgmt
dual-active exclude interface GigabitEthernet1/5/3 ! Connectivity to VSS during dual active
mac-address use-virtual ! Required for consistent MAC address
dual-active detection pagp trust channel-group 202 ! Enhanced PAgP based dual active detection
redundancy ! Default SSO Enabled
main-cpu
auto-sync running-config
mode sso
```

Switch 1

```
interface Port-channel1 ! Unique port-channel number for SW 1
description VSL Link from Switch 1
no switchport
no ip address
switch virtual link 1 ! Defines switch ID for SW 1
mls qos trust cos
no mls qos channel-consistency
interface ten 1/5/4
channel-group 1 mode on ! EC mode is ON - EtherChannel Management Protocol off
interface ten 1/1/1
channel-group 1 mode on
```

Switch 2

```
interface Port-channel2 ! Unique port-channel number for SW 1
description VSL Link from Switch 2
no switchport
no ip address
switch virtual link 2 ! Defines switch ID for SW 2
mls qos trust cos
no mls qos channel-consistency
interface ten 2/5/4
```
channel-group 2 mode on

interface ten 2/1/1
channel-group 2 mode on

Layer-2 Domain

vss

udld enable
vtp domain campus-test
vtp mode transparent

spanning-tree mode rapid-pvst
no spanning-tree optimize bpdu transmission
spanning-tree extend system-id
spanning-tree vlan 2-999 priority 24576

port-channel load-balance src-dst-mixed-ip-port

vlan 400
  name L2_Spaned_VLAN_400

vlan 450
  name L2_Spaned_VLAN_450

vlan 500
  name L2_Spaned_VLAN_500

vlan 550
  name L2_Spaned_VLAN_550

vlan 600
  name L2_Spaned_VLAN_600

vlan 650
  name L2_Spaned_VLAN_650

vlan 900
  name NetMgmt_VLAN_900

vlan 999
  name Unused_Port_VLAN_999

vlan 2
  name cr7-3750-Stack-Data-VLAN

vlan 102
  name cr7-3750-Stack-Voice-VLAN

interface Vlan2
  Sample VLAN interface configuration
  ip address 10.120.2.1 255.255.255.0
  no ip redirects
  no ip unreachables
  ip flow ingress
  ip pim sparse-mode
  logging event link-status
  hold-queue 150 in
  hold-queue 150 out

Enhanced hash algorithm
VSS—Multi-Chassis EtherChannel

**PAgP**

```plaintext
interface GigabitEthernet1/8/23 ! Interface on SW 1
   description Access Switch Facing Interface
   switchport
   switchport trunk encapsulation dot1q
   switchport trunk native vlan 202
   switchport mode dynamic desirable ! Trunk mod dynamic and desirable
   switchport trunk allowed vlan 2,102,400,450,500,550,600,650,900 ! Only allow need VLANs for a given trunk
   logging event link-status ! Logging for link status
   logging event trunk-status ! Logging for trunk status
   logging event bundle-status ! Logging for port-channel status
   load-interval 30
   mls qos trust dscp
   channel-protocol pagp
   channel-group 202 mode desirable ! Define Port-channel, PAGP mode desirable

interface GigabitEthernet2/8/23 ! Interface on SW 2
   description Access Switch Facing Interface
   switchport
   switchport trunk encapsulation dot1q
   switchport trunk native vlan 202
   switchport mode dynamic desirable
   switchport trunk allowed vlan 2,102,400,450,500,550,600,650,900
   logging event link-status
   logging event trunk-status
   logging event bundle-status
   load-interval 30
   mls qos trust dscp
   load-interval 30
   channel-protocol pagp
   channel-group 202 mode desirable
```

```plaintext
channel-group 202 mode desirable ! Define Port-channel, PAGP mode desirable
interface Port-channel202 ! Automatically created by defining at interfaces
   description Access Switch MEC
   switchport
   switchport trunk encapsulation dot1q
   switchport trunk native vlan 202
   switchport trunk allowed vlan 2,102,400,450,500,550,600,650,900
   logging event link-status
   logging event spanning-tree status ! STP logging enabled on port-channel
   load-interval 30
   mls qos trust dscp
   spanning-tree portfast ! Optional - helps during initialization
   hold-queue 2000 out
```

**LACP**

**LACP Sample Configuration**

```plaintext
interface GigabitEthernet1/8/23
   description Access Switch Facing Interface
   switchport
   switchport trunk encapsulation dot1q
   switchport trunk native vlan 202
   switchport mode dynamic desirable
   switchport trunk allowed vlan 2,102,400,450,500,550,600,650,900
   logging event link-status
```
logging event trunk-status
logging event bundle-status
load-interval 30
mls qos trust dscp
channel-protocol lacp
channel-group 202 mode active
hold-queue 2000 out

interface GigabitEthernet2/8/23
  description Access Switch Facing Interface
  switchport
  switchport trunk encapsulation dot1q
  switchport trunk native vlan 202
  switchport mode dynamic desirable
  switchport trunk allowed vlan 2,102,400,450,500,550,600,650,900
logging event link-status
logging event trunk-status
logging event bundle-status
load-interval 30
mls qos trust dscp
channel-protocol lacp
channel-group 202 mode active
hold-queue 2000 out

interface Port-channel202 ! Automatically created by defining at interfaces
description Access Switch MEC
  switchport
  switchport trunk encapsulation dot1q
  switchport trunk native vlan 202
  switchport trunk allowed vlan 2,102,400,450,500,550,600,650,900
logging event link-status
logging event spanning-tree status
load-interval 30
mls qos trust dscp
spanning-tree portfast ! Optional - helps during initialization
hold-queue 2000 out

Access-Layer Switch

Sample Configuration (Platform Specific Configuration Varies)

interface GigabitEthernet0/27
description Uplink to VSS Switch Gig 1/8/24
  switchport
  switchport trunk encapsulation dot1q
  switchport trunk native vlan 203
  switchport mode dynamic desirable
  switchport trunk allowed vlan 3,103,400,450,500,550,600,650,900
  logging event link-status
  logging event trunk-status
  logging event bundle-status
  carrier-delay msec 0
  srr-queue bandwidth share 1 70 25 5
  srr-queue bandwidth shape 3 0 0 0
  priority-queue out
  mls qos trust dscp
  channel-protocol pagp
  channel-group 1 mode desirable

interface GigabitEthernet0/28
description Uplink to VSS Switch Gig 2/8/24
  switchport trunk encapsulation dot1q
  switchport trunk native vlan 203
Appendix A      VSS-Enabled Campus Best Practice Configuration Example

switchport trunk allowed vlan 3,103,400,450,500,550,600,650,900
switchport mode dynamic desirable
logging event link-status
logging event trunk-status
logging event bundle-status
carrier-delay msec 0
srr-queue bandwidth share 1 70 25 5
srr-queue bandwidth shape 3 0 0 0
priority-queue out
mls qos trust dscp
channel-protocol pagg
channel-group 1 mode desirable

interface Port-channel1 ! Automatically created by defining at interfaces
description EC Uplink to VSS
switchport trunk encapsulation dot1q
switchport trunk native vlan 203
switchport trunk allowed vlan 3,103,400,450,500,600,650,900
switchport mode dynamic desirable
logging event link-status
logging event spanning-tree status
carrier-delay msec 0
spanning-tree portfast ! Optional - helps during initialization

Layer-3 Domain

The Layer 3 domain represents VSS interconnection to the core-layer. The core-layer devices configuration shown below are standalone router/switch.

Global Configuration

mls ip cef load-sharing <option> ! Apply Campus Best Practices

Multicast

VSS
ip multicast-routing
ip pim rp-address 10.122.100.1 GOOD-IPMC override ! RP mapping with filter

ip access-list standard GOOD-IPMC
permit 224.0.1.39
permit 224.0.1.40
permit 239.192.240.0 0.0.3.255
permit 239.192.248.0 0.0.3.255

Core 1 Standalone Router (No VSS)

Core RP ANYCAST - Primary

ip multicast-routing

interface Loopback0
description MSDP PEER INT ! MSDP Loopback
ip address 10.122.10.1 255.255.255.255
interface Loopback1
description ANYCAST RP ADDRESS (PRIMARY) ! Anycast RP Primary
ip address 10.122.100.1 255.255.255.255

interface Loopback2
description Garbage-CAN RP
ip address 2.2.2.2 255.255.255.255

interface Port-channel1 ! Core 1- Core2 L3 for MSDP
description Channel to Peer Core Node dampening
ip address 10.122.0.18 255.255.255.254
ip pim sparse-mode
load-interval 30
carrier-delay msec 0
mls qos trust dscp

ip access-list standard GOOD-IPMC
permit 224.0.1.39
permit 224.0.1.40
permit 239.192.240.0 0.0.3.255
permit 239.192.248.0 0.0.3.255

ip msdp peer 10.122.10.2 connect -source Loopback0 ! MSDP Configuration
ip msdp description 10.122.10.2 ANYCAST-PEER-6k-core-2
ip msdp cache -sa-state
ip msdp originator-id Loopback0

Core 2 Standalone Router (No VSS)

ip multicast-routing

interface Loopback0
description MSDP PEER INT
ip address 10.122.10.2 255.255.255.255

interface Loopback1
description ANYCAST RP ADDRESS
ip address 10.122.100.1 255.255.255.255 ! Secondary ANYCAST RP
delay 600

interface Loopback2
description Garbage-CAN RP
ip address 2.2.2.2 255.255.255.255

interface Port-channel1
description Channel to Peer Core node dampening
ip address 10.122.0.19 255.255.255.254
ip pim sparse-mode
load-interval 30
carrier-delay msec 0
mls qos trust dscp

ip pim rp-address 10.122.100.1 GOOD-IPMC override
ip access-list standard GOOD-IPMC
permit 224.0.1.39
permit 224.0.1.40
permit 239.192.240.0 0.0.3.255
permit 239.192.248.0 0.0.3.255
ip msdp peer 10.122.10.1 connect-source Loopback0
ip msdp description 10.122.10.1 ANYCAST-PEER-6k-core-1
ip msdp cache SA-state
ip msdp originator-id Loopback0

eigrp MEC

vss

router eigrp 100
  passive-interface default
  no passive-interface Port-channel200
  no passive-interface Port-channel201
  network 10.0.0.0
eigrp log-neighbor-warnings
eigrp log-neighbor-changes
  no auto-summary
eigrp router-id 10.122.102.1
eigrp event-log-size 3000
nsf ! Enable NSF Capability

interface Port-channel200 ! Create L3 MEC Interface first
description 20 GIG MEC to CORE-1 (cr2-6500-1 4/1-4/3)
o no switchport
  dampening
  ip address 10.122.0.26 255.255.255.254
  ip flow ingress
  ip pim sparse-mode
  ip summary-address eigrp 100 10.125.0.0 255.255.0.0 5 ! Summarization for Access-subnets
  ip summary-address eigrp 100 10.120.0.0 255.255.0.0 5
  logging event link-status
  load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out
!
interface Port-channel201
  description 20 GIG to CORE-2 (cr2-6500-1 4/1-4/3)
o no switchport
  dampening
  ip address 10.122.0.21 255.255.255.254
  ip flow ingress
  ip pim sparse-mode
  ip summary-address eigrp 100 10.125.0.0 255.255.0.0 5
  ip summary-address eigrp 100 10.120.0.0 255.255.0.0 5
  logging event link-status
  load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out
!
interface TenGigabitEthernet1/2/1
  description 10 GigE to Core 1
  no switchport
  no ip address
  logging event link-status
  logging event bundle-status
  load-interval 30
carrier-delay msec 0
mls qos trust dscp channel-protocol pagp channel-group 200 mode desirable hold-queue 2000 in hold-queue 2000 out
!
interface TenGigabitEthernet1/2/2
description 10 GigE to Core 2
no switchport
no ip address
logging event link-status
logging event bundle-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp channel-protocol pagp channel-group 201 mode desirable hold-queue 2000 in hold-queue 2000 out
interface TenGigabitEthernet2/2/1
description to core 1
no switchport
no ip address
logging event link-status
logging event bundle-status
logging event spanning-tree status
load-interval 30
mls qos trust dscp channel-protocol pagp channel-group 200 mode desirable hold-queue 2000 in hold-queue 2000 out
interface TenGigabitEthernet2/2/2
description 10 GigE to Core 2
no switchport
no ip address
logging event link-status
logging event bundle-status
load-interval 30
mls qos trust dscp channel-protocol pagp channel-group 201 mode desirable hold-queue 2000 in hold-queue 2000 out

Core 1 Standalone Router (No VSS)

router eigrp 100
  passive-interface default
  no passive-interface Port-channel1
  no passive-interface Port-channel20
  no passive-interface Port-channel221
  network 10.0.0.0
  no auto-summary
eigrp log-neighbor-warnings
eigrp log-neighbor-changes
eigrp event-log-size 3000

interface Port-channel20
description 20 Gig MEC to VSS 1/2/1 2/2/1
dampening
ip address 10.122.0.27 255.255.255.254
ip flow ingress
ip pim sparse-mode
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out

Core 2 Standalone Router (No VSS)

router eigrp 100
passive-interface default
no passive-interface Port-channel1
no passive-interface Port-channel120
no passive-interface Port-channel221
network 10.0.0.0
no auto-summary
eigrp log-neighbor-warnings
eigrp log-neighbor-changes
eigrp event-log-size 3000

interface Port-channel21
description 20 Gig to VSS 1/2-2/2-2
ip address 10.122.0.20 255.255.255.254
ip flow ingress
ip pim sparse-mode
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out

EIGRP ECMP

VSS

router eigrp 100
passive-interface default
no passive-interface TenGigabitEthernet1/2/1
no passive-interface TenGigabitEthernet1/2/2
no passive-interface TenGigabitEthernet2/2/1
no passive-interface TenGigabitEthernet2/2/2
network 10.0.0.0
no auto-summary
eigrp router-id 10.122.102.1
eigrp log-neighbor-warnings
eigrp log-neighbor-changes
eigrp event-log-size 3000
nsf ! Enable NSF Capability

interface TenGigabitEthernet1/2/1
description 10 GigE to Core 1
no switchport
dampening
ip address 10.122.0.26 255.255.255.254
ip flow ingress
ip pim sparse-mode
ip summary-address eigrp 100 10.120.0.0 255.255.0.0 5
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out
!
interface TenGigabitEthernet1/2/2
description 10 GigE to Core 2
no switchport
dampening
ip address 10.122.0.23 255.255.255.254
ip flow ingress
ip pim sparse-mode
ip summary-address eigrp 100 10.120.0.0 255.255.0.0 5
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out
!
interface TenGigabitEthernet2/2/1
description to Core 2
no switchport
dampening
ip address 10.122.0.32 255.255.255.254
ip flow ingress
ip pim sparse-mode
ip summary-address eigrp 100 10.120.0.0 255.255.0.0 5
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out
!
interface TenGigabitEthernet2/2/2
description 10 GigE to Core 2
no switchport
dampening
ip address 10.122.0.20 255.255.255.254
ip flow ingress
ip pim sparse-mode
ip summary-address eigrp 100 10.120.0.0 255.255.0.0 5
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out

Core 1 Standalone Router (No VSS)

router eigrp 100
passive-interface default
no passive-interface TenGigabitEthernet4/1
no passive-interface TenGigabitEthernet4/3
network 10.0.0.0
no auto-summary
eigrp log-neighbor-warnings
eigrp log-neighbor-changes
eigrp event-log-size 3000

interface TenGigabitEthernet4/1
  description To VSS Ten 1/2/1
dampening
  ip address 10.122.0.27 255.255.255.254
  ip flow ingress
  ip pim sparse-mode
  logging event link-status
  load-interval 30
  carrier-delay msec 0
  mls qos trust dscp
  hold-queue 2000 in
  hold-queue 2000 out

interface TenGigabitEthernet4/3
  description To VSS Ten 2/2/1
dampening
  ip address 10.122.0.33 255.255.255.254
  ip flow ingress
  ip pim sparse-mode
  logging event link-status
  logging event bundle-status
  load-interval 30
  carrier-delay msec 0
  mls qos trust dscp
  hold-queue 2000 in
  hold-queue 2000 out

Core 2 Standalone Router (No VSS)

router eigrp 100
  passive-interface default
  no passive-interface TenGigabitEthernet4/1
  no passive-interface TenGigabitEthernet4/3
  network 10.0.0.0
  no auto-summary
  eigrp log-neighbor-warnings
  eigrp log-neighbor-changes
  eigrp event-log-size 3000

interface TenGigabitEthernet4/1
  description To VSS Ten 1/2/2
dampening
  ip address 10.122.0.22 255.255.255.254
  ip flow ingress
  ip pim sparse-mode
  logging event link-status
  load-interval 30
  carrier-delay msec 0
  mls qos trust dscp
  hold-queue 2000 in
  hold-queue 2000 out

interface TenGigabitEthernet4/3
  description To VSS Ten 2/2/2
dampening
  ip address 10.122.0.21 255.255.255.254
  ip flow ingress
  ip pim sparse-mode
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out

OSPF MEC

VSS

router ospf 100
router-id 10.122.0.235
log-adjacency-changes detail
auto-cost reference-bandwidth 20000  Optional
nsf  Enable NSF Capability
area 120 stub no-summary
area 120 range 10.120.0.0 255.255.0.0 cost 10
area 120 range 10.125.0.0 255.255.0.0 cost 10
passive-interface default
no passive-interface Port-channel200
no passive-interface Port-channel201
network 10.120.0.0 0.0.255.255 area 120
network 10.122.0.0 0.0.255.255 area 0
network 10.125.0.0 0.0.255.255 area 120

interface Port-channel200
description 20 Gig MEC to VSS (cr2-6500-1 4/1-4/3)
no switchport
dampening
ip address 10.122.0.26 255.255.255.254
ip flow ingress
ip pim sparse-mode
ip ospf network point-to-point
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out

interface Port-channel201
description 20 Gig to VSS (cr2-6500-1 4/1-4/3)
no switchport
dampening
ip address 10.122.0.21 255.255.255.254
ip flow ingress
ip pim sparse-mode
ip ospf network point-to-point
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out
Core 1 Standalone Router No VSS)

```text
router ospf 100
  router-id 10.254.254.7
  log-adjacency-changes detail ! Helps in NSF Restart Activities
  auto-cost reference-bandwidth 20000 ! Optional
  passive-interface default
  no passive-interface Port-channel1
  no passive-interface Port-channel20
  network 10.122.0.0 0.0.255.255 area 0

interface Port-channel20
  description 20 Gig MEC to VSS 1/2/1 2/2/1
  dampening
  ip address 10.122.0.27 255.255.255.254
  ip flow ingress
  ip pim sparse-mode
  ip ospf network point-to-point
  logging event link-status
  load-interval 30
  carrier-delay msec 0
  mls qos trust dscp
  hold-queue 2000 in
  hold-queue 2000 out
```

Core 2 Standalone Router (No VSS)

```text
router ospf 100
  router-id 10.254.254.7
  log-adjacency-changes detail
  auto-cost reference-bandwidth 20000 ! Optional
  passive-interface default
  no passive-interface Port-channel1
  no passive-interface Port-channel20
  network 10.122.0.0 0.0.255.255 area 0

interface Port-channel21
  description 20 Gig to VSS 1/2/2-2/2/2
  dampening
  ip address 10.122.0.20 255.255.255.254
  ip flow ingress
  ip pim sparse-mode
  ip ospf network point-to-point
  logging event link-status
  load-interval 30
  carrier-delay msec 0
  mls qos trust dscp
  hold-queue 2000 in
  hold-queue 2000 out
```

OSPF ECMP

VSS

```text
router ospf 100
  router-id 10.122.0.235
  log-adjacency-changes detail
  auto-cost reference-bandwidth 20000 ! Optional
  nsf ! Enable NSF Capability
  area 120 stub no-summary
```
area 120 range 10.120.0.0 255.255.0.0 cost 10
area 120 range 10.125.0.0 255.255.0.0 cost 10
passive-interface default
no passive-interface TenGigabitEthernet 1/2/1
no passive-interface TenGigabitEthernet 1/2/2
no passive-interface TenGigabitEthernet 2/2/1
no passive-interface TenGigabitEthernet 2/2/2
network 10.120.0.0 0.0.255.255 area 120
network 10.122.0.0 0.0.255.255 area 0
network 10.125.0.0 0.0.255.255 area 120

interface TenGigabitEthernet 1/2/1
  description 10 GigE to Core 1
  no switchport
dampening
  ip address 10.122.0.26 255.255.255.254
  ip flow ingress
  ip pim sparse-mode
  ip ospf network point-to-point
  logging event link-status
  load-interval 30
carrier-delay msec 0
  mls qos trust dscp
  hold-queue 2000 in
  hold-queue 2000 out

interface TenGigabitEthernet 1/2/2
  description 10 GigE to Core 2
  no switchport
dampening
  ip address 10.122.0.23 255.255.255.254
  ip flow ingress
  ip pim sparse-mode
  ip ospf network point-to-point
  logging event link-status
  load-interval 30
carrier-delay msec 0
  mls qos trust dscp
  hold-queue 2000 in
  hold-queue 2000 out

interface TenGigabitEthernet 2/2/1
  description to Core 1
  no switchport
dampening
  ip address 10.122.0.32 255.255.255.254
  ip flow ingress
  ip pim sparse-mode
  ip ospf network point-to-point
  logging event link-status
  load-interval 30
carrier-delay msec 0
  mls qos trust dscp
  hold-queue 2000 in
  hold-queue 2000 out

interface TenGigabitEthernet 2/2/2
  description 10 GigE to Core 2
  no switchport
dampening
  ip address 10.122.0.20 255.255.255.254
  ip flow ingress
ip pim sparse-mode
ip ospf network point-to-point
logging event link-status
load-interval 30
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out

Core 1 Standalone Router (No VSS)

router ospf 100
router-id 10.254.254.7
log-adjacency-changes detail
auto-cost reference-bandwidth 20000 ! Optional
passive-interface default
no passive-interface GigabitEthernet2/5
no passive-interface TenGigabitEthernet4/1
no passive-interface TenGigabitEthernet4/3
no passive-interface Port-channel1
network 10.122.0.0 0.0.255.255 area 0

interface TenGigabitEthernet4/1
description To VSS Ten1/2/1
dampening
ip address 10.122.0.27 255.255.255.254
ip flow ingress
ip pim sparse-mode
ip ospf network point-to-point
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out
!
interface TenGigabitEthernet4/3
description To VSS Ten2/2/1
dampening
ip address 10.122.0.33 255.255.255.254
ip flow ingress
ip pim sparse-mode
ip ospf network point-to-point
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out

Core 2 Standalone Router (No VSS)

router ospf 100
router-id 10.254.254.7
log-adjacency-changes detail
auto-cost reference-bandwidth 20000 ! Optional
passive-interface default
no passive-interface GigabitEthernet2/5
no passive-interface TenGigabitEthernet4/1
no passive-interface TenGigabitEthernet4/3
no passive-interface Port-channel1
network 10.122.0.0 0.0.255.255 area 0
interface TenGigabitEthernet4/1
description To VSS Ten 1/2/2
dampening
ip address 10.122.0.22 255.255.255.254
ip flow ingress
ip pim sparse-mode
ip ospf network point-to-point
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out
!
!
interface TenGigabitEthernet4/3
description To VSS Ten 2/2/2
dampening
ip address 10.122.0.21 255.255.255.254
ip flow ingress
ip pim sparse-mode
ip ospf network point-to-point
logging event link-status
load-interval 30
carrier-delay msec 0
mls qos trust dscp
hold-queue 2000 in
hold-queue 2000 out