



APPENDIX **A**

Configurations

This section is designed to provide a sample full configuration for the Top of Rack Cisco ASR 9001 Router and Cisco Nexus 9396PX Switch relative to the VMS Pod.

- [ASR 9001 Sample Full Configuration, page A-1](#)
- [Nexus 9396PX Sample Full Configuration, page A-3](#)

ASR 9001 Sample Full Configuration

This section provides a full sample configuration for the Top of Rack Cisco ASR 9001 Router in support of the VMS Pod.

```
hostname ASR9K-1
clock timezone EST -5
clock summer-time EDT recurring
telnet vrf mgmt ipv4 server max-servers 30
!
username vmsadmin
  group sysadmin
  group root-system
  secret 0 ciscovms
!
aaa authentication login default local line
!
vrf mgmt
  description ASR9k Management VRF
  address-family ipv4 unicast
  !
  vrf vms_mgmt
  description VMS Management Interfaces VRF
  address-family ipv4 unicast
  !
  vrf external
  description VMS External Facing Interfaces VRF
  address-family ipv4 unicast
  !
!
line console
  secret 0 ciscosecret
!
line default
  timestamp
  exec-timeout 60 0
  session-timeout 60 0
  transport input telnet ssh
```

```

transport preferred ssh
!
ftp client vrf mgmt passive
ftp client vrf mgmt username vmsftpuser
ftp client vrf mgmt password vmsftppassword
ftp client vrf mgmt source-interface MgmtEth0/RSP0/CPU0/0
!
tftp client vrf mgmt source-interface MgmtEth0/RSP0/CPU0/0
!
ipv4 virtual address vrf mgmt 10.100.0.6 255.255.255.0
ipv4 virtual address use-as-src-addr
!
interface Bundle-Ether1
description Inter-connection with ToR Nexus Switch
mtu 9200
!
interface Bundle-Ether1.101
description orch-internet
vrf external
ipv4 address 11.17.1.1 255.255.255.0
encapsulation dot1q 101
!
interface Bundle-Ether1.102
description vnf-outside
vrf external
ipv4 address 11.17.16.1 255.255.240.0
encapsulation dot1q 102
!
interface Bundle-Ether1.103
description vnf-internet
vrf external
ipv4 address 11.17.32.1 255.255.240.0
encapsulation dot1q 103
!
interface Bundle-Ether1.150
description *** Customer Lab Internet Connection ***
vrf external
ipv4 address 11.17.0.2 255.255.255.252
encapsulation dot1q 150
!
interface Bundle-Ether1.200
description cimc-mgmt
vrf vms_mgmt
ipv4 address 10.10.1.1 255.255.255.0
encapsulation dot1q 200
!
interface Bundle-Ether1.201
description pxe-osmgmt
vrf vms_mgmt
ipv4 address 10.20.0.1 255.255.240.0
encapsulation dot1q 201
!
interface Bundle-Ether1.202
description app-mgmt
vrf vms_mgmt
ipv4 address 10.10.2.1 255.255.255.0
encapsulation dot1q 202
!
interface Bundle-Ether1.203
description orch-mgmt
vrf vms_mgmt
ipv4 address 10.10.3.1 255.255.255.0
encapsulation dot1q 203
!

```

```

interface Bundle-Ether1.204
description vnf-mgmt
vrf vms_mgmt
ipv4 address 10.20.16.1 255.255.240.0
encapsulation dot1q 204
!
interface TenGigE0/0/2/0
description *** To ToR Nexus 9300 Switch Eth 1/45 ***
bundle id 1 mode active
carrier-delay up 10000 down 0
load-interval 30
!
interface TenGigE0/0/2/1
description *** To ToR Nexus 9300 Switch Eth 1/46 ***
bundle id 1 mode active
carrier-delay up 10000 down 0
load-interval 30
!
interface MgmtEth0/RSP0/CPU0/0
vrf mgmt
ipv4 address 10.100.0.6 255.255.255.0
!
router static
vrf mgmt
address-family ipv4 unicast
0.0.0.0/0 10.100.0.1
!
vrf external
address-family ipv4 unicast
0.0.0.0/0 11.17.0.1
!
!
vrf vms_mgmt
address-family ipv4 unicast
!
!
ssh server v2
ssh server vrf mgmt
ssh timeout 60
!

```

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Nexus 9396PX Sample Full Configuration

This section provides a full sample configuration for the Top of Rack Cisco Nexus 9396PX Switch in support of the VMS Pod.

```

hostname N9396-1
clock timezone EST -5 0
clock summer-time EDT

feature telnet
feature udd
feature lacp

username vmsadmin password 0 ciscovms role network-admin
no password strength-check
spanning-tree mode mst
copp profile lenient

```

```
vlan 101-103,150,200-204
vlan 101
  name orch-internet
vlan 102
  name vnf-outside
vlan 103
  name vnf-internet
vlan 150
  name public
vlan 200
  name cimc-mgmt
vlan 201
  name pxe-osmgmt
vlan 202
  name app-mgmt
vlan 203
  name orch-mgmt
vlan 204
  name vnf-mgmt

spanning-tree mst configuration
  name vms-pod
  instance 1 vlan 1-4000
vrf context management
  ip route 0.0.0.0/0 10.100.0.1

interface port-channel1
  description Inter-connection with ToR ASR Router
  switchport mode trunk
  switchport trunk allowed vlan 101-103,150,200-204
  logging event port link-status
  mtu 9216

interface port-channel3
  description Interconnection to Customer Lab Router (Internet)
  switchport mode access
  switchport access vlan 150
  spanning-tree port type edge
  spanning-tree bpduguard enable
  spanning-tree bpdufilter enable
  logging event port link-status

interface port-channel2201
  description To UCS C220 (1) 10Gs
  switchport mode trunk
  switchport trunk allowed vlan 101-103,202-204
  spanning-tree port type edge trunk
  mtu 9216
  logging event port link-status

interface port-channel2202
  description To UCS C220 (2) 10Gs
  switchport mode trunk
  switchport trunk allowed vlan 101-103,202-204
  spanning-tree port type edge trunk
  mtu 9216
  logging event port link-status

interface port-channel2203
  description To UCS C220 (3) 10Gs
  switchport mode trunk
  switchport trunk allowed vlan 101-103,202-204
  spanning-tree port type edge trunk
```

```
mtu 9216
logging event port link-status

interface port-channel2204
description To UCS C220 (4) 10Gs
switchport mode trunk
switchport trunk allowed vlan 101-103,202-204
spanning-tree port type edge trunk
mtu 9216
logging event port link-status

interface port-channel2205
description To UCS C220 (5) 10Gs
switchport mode trunk
switchport trunk allowed vlan 101-103,202-204
spanning-tree port type edge trunk
mtu 9216
logging event port link-status

interface port-channel2401
description To UCS C240 (1) 10Gs
switchport mode trunk
switchport trunk allowed vlan 101-103,202-204
spanning-tree port type edge trunk
mtu 9216
logging event port link-status

interface port-channel2402
description To UCS C240 (2) 10Gs
switchport mode trunk
switchport trunk allowed vlan 101-103,202-204
spanning-tree port type edge trunk
mtu 9216
logging event port link-status

interface port-channel2403
description To UCS C240 (3) 10Gs
switchport mode trunk
switchport trunk allowed vlan 101-103,202-204
spanning-tree port type edge trunk
mtu 9216
logging event port link-status

interface Ethernet1/1
description To UCS C220 (1) 10G-1
switchport mode trunk
mtu 9216
logging event port link-status
channel-group 2201 mode active

interface Ethernet1/2
description To UCS C220 (1) 10G-2
switchport mode trunk
mtu 9216
logging event port link-status
channel-group 2201 mode active

interface Ethernet1/3
description To UCS C220 (2) 10G-1
switchport mode trunk
mtu 9216
logging event port link-status
channel-group 2202 mode active
```

```
interface Ethernet1/4
  description To UCS C220 (2) 10G-2
  switchport mode trunk
  mtu 9216
  logging event port link-status
  channel-group 2202 mode active

interface Ethernet1/5
  description To UCS C220 (3) 10G-1
  switchport mode trunk
  mtu 9216
  logging event port link-status
  channel-group 2203 mode active

interface Ethernet1/6
  description To UCS C220 (3) 10G-2
  switchport mode trunk
  mtu 9216
  logging event port link-status
  channel-group 2203 mode active

interface Ethernet1/7
  description To UCS C220 (4) 10G-1
  switchport mode trunk
  mtu 9216
  logging event port link-status
  channel-group 2204 mode active

interface Ethernet1/8
  description To UCS C220 (4) 10G-2
  switchport mode trunk
  mtu 9216
  logging event port link-status
  channel-group 2204 mode active

interface Ethernet1/9
  description To UCS C220 (5) 10G-1
  switchport mode trunk
  mtu 9216
  logging event port link-status
  channel-group 2205 mode active

interface Ethernet1/10
  description To UCS C220 (5) 10G-2
  switchport mode trunk
  mtu 9216
  logging event port link-status
  channel-group 2205 mode active

interface Ethernet1/11
  description To UCS C240 (1) 10G-1
  switchport mode trunk
  spanning-tree port type edge trunk
  mtu 9216
  logging event port link-status
  channel-group 2401 mode active

interface Ethernet1/12
  description To UCS C240 (1) 10G-2
  switchport mode trunk
  spanning-tree port type edge trunk
  mtu 9216
  logging event port link-status
  channel-group 2401 mode active
```

```
interface Ethernet1/13
  description To UCS C240 (2) 10G-1
  switchport mode trunk
  spanning-tree port type edge trunk
  mtu 9216
  logging event port link-status
  channel-group 2402 mode active

interface Ethernet1/14
  description To UCS C240 (2) 10G-2
  switchport mode trunk
  spanning-tree port type edge trunk
  mtu 9216
  logging event port link-status
  channel-group 2402 mode active

interface Ethernet1/15
  description To UCS C240 (3) 10G-1
  switchport mode trunk
  spanning-tree port type edge trunk
  mtu 9216
  logging event port link-status
  channel-group 2403 mode active

interface Ethernet1/16
  description To UCS C240 (3) 10G-2
  switchport mode trunk
  spanning-tree port type edge trunk
  mtu 9216
  logging event port link-status
  channel-group 2403 mode active

interface Ethernet1/17
  description UCS 220 (1) 1G-1 pxe-osmgmt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/18
  description UCS 220 (1) 1G-2 orch-internet
  switchport mode access
  switchport access vlan 101
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/19
  description UCS 220 (2) 1G-1 pxe-osmgmt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/20
  description UCS 220 (2) 1G-2 pxe-osmgmt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216
```

```
interface Ethernet1/21
  description UCS 220 (3) 1G-1 pxe-osmgmt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/22
  description UCS 220 (3) 1G-2 pxe-osmgmt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/23
  description UCS 220 (4) 1G-1 pxe-osmgmt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/24
  description UCS 220 (4) 1G-2 pxe-osmgmt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/25
  description UCS 220 (5) 1G-1 pxe-osmgmt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/26
  description UCS 220 (5) 1G-2 pxe-osmgmt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/27
  description UCS 240 (1) 1G-1 pxe-osmgmt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/28
  description UCS 240 (1) 1G-2 pxe-osmgmt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216
```



```
interface Ethernet1/29
  description UCS 240 (2) 1G-1 pxe-osmgt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/30
  description UCS 240 (2) 1G-2 pxe-osmgt
  switchport mode access
  switchport access vlan 201
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/31
  description UCS 240 (3) 1G-1 pxe-net
  switchport mode access
  switchport access vlan 51
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/32
  description UCS 240 (3) 1G-2 net-osmgt
  switchport mode access
  switchport access vlan 125
  spanning-tree port type edge
  logging event port link-status
  mtu 9216

interface Ethernet1/33
  description UCS C220 (1) CIMC
  switchport mode access
  switchport access vlan 200
  spanning-tree port type edge
  logging event port link-status

interface Ethernet1/34
  description UCS C220 (2) CIMC
  switchport mode access
  switchport access vlan 200
  spanning-tree port type edge
  logging event port link-status

interface Ethernet1/35
  description UCS C220 (3) CIMC
  switchport mode access
  switchport access vlan 200
  spanning-tree port type edge
  logging event port link-status

interface Ethernet1/36
  description UCS C220 (4) CIMC
  switchport mode access
  switchport access vlan 200
  spanning-tree port type edge
  logging event port link-status

interface Ethernet1/37
  description UCS C220 (5) CIMC
  switchport mode access
```

```
switchport access vlan 200
spanning-tree port type edge
logging event port link-status

interface Ethernet1/38
description UCS C240 (1) CIMC
switchport mode access
switchport access vlan 200
spanning-tree port type edge
logging event port link-status

interface Ethernet1/39
description UCS C240 (2) CIMC
switchport mode access
switchport access vlan 200
spanning-tree port type edge
logging event port link-status

interface Ethernet1/40
description UCS C240 (3) CIMC
switchport mode access
switchport access vlan 200
spanning-tree port type edge
logging event port link-status

interface Ethernet1/45
description *** To ToR ASR 9001 Te 0/0/2/0 ***
switchport mode trunk
logging event port link-status
channel-group 1 mode active

interface Ethernet1/46
description *** To ToR ASR 9001 Te 0/0/2/1 ***
switchport mode trunk
logging event port link-status
channel-group 1 mode active

interface Ethernet 1/48
description *** To Customer Lab Router (Internet) ***
switchport mode access
switchport access vlan 150
channel-group 3 mode active

interface mgmt0
vrf member management
ip address 10.100.0.4/24

line console
line vty
```