! Define the hostname

hostname Nexus-Switch

! Enable feature for VLANs

feature vlan

! Enable feature for interface configuration

feature interface-vlan

! Enable feature for IP routing

feature ospf

! Enable feature for IPsec

feature ipsec

! Create VLANs

vlan 10

name Marketing

exit

vlan 20

name Sales

exit

vlan 30

name Engineering

exit

! Configure interface VLANs for Layer 3 connectivity

interface Vlan10

ip address 192.168.0.1/23

no shutdown

exit

interface Vlan20

ip address 192.168.0.2/23

no shutdown

exit

interface Vlan30

ip address 192.168.0.3/23

no shutdown

exit

! Assign VLANs to interfaces (example for Ethernet interfaces)

interface Ethernet1/1

switchport mode access

switchport access vlan 10

no shutdown

exit

interface Ethernet1/2

switchport mode access

switchport access vlan 20

no shutdown

exit

interface Ethernet1/3

switchport mode access

switchport access vlan 30

no shutdown

exit

! Configure a trunk port for inter-VLAN communication

interface Ethernet1/4

switchport mode trunk

switchport trunk allowed vlan 10,20,30

no shutdown

exit

! Configure routing (if needed)

ip routing

! Configure OSPF for dynamic routing

router ospf 1

network 192.168.0.0/23 area 0

exit

! Configure a site-to-site VPN (using IPsec)

! Assuming that the VPN peer IP is 203.0.113.1

! Configure the crypto map

crypto map VPN-MAP 10 ipsec-isakmp

set peer 203.0.113.1

set transform-set VPN-SET

match address VPN-ACL

exit

! Define the transform set

crypto ipsec transform-set VPN-SET esp-aes esp-sha-hmac

! Create an access list for VPN traffic

ip access-list extended VPN-ACL

permit ip 192.168.0.0 0.0.1.255 203.0.113.0 0.0.0.255

exit

! Apply the crypto map to the interface connected to the internet

interface Ethernet1/5

ip address x.x.x.x y.y.y.y ! replace with your public IP and subnet

crypto map VPN-MAP

no shutdown

exit

! End of configuration