

SWITCH A1 (C2960)

```
===== SWITCH A1 (C2960) =====
Current configuration : 1915 bytes
!
version 15.0
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname SWA1
!
!
!
ip ssh version 2
ip domain-name campus.lab
!
username netadmin secret 5 $1$mERr$5.a6P4JqbNiMX0lusIfka/
!
!
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
 switchport trunk allowed vlan 10,20,30,40
 switchport mode trunk
 spanning-tree portfast trunk
!
interface FastEthernet0/2
 switchport trunk allowed vlan 10,20,30,40
 switchport mode trunk
 spanning-tree portfast trunk
!
interface FastEthernet0/3
 description PC2 IT
 switchport access vlan 10
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/4
 description PC3 IT
 switchport access vlan 10
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/5
 description PC4 HR
 switchport access vlan 20
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
```

```
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
  no ip address
  shutdown
!
!
!
!
ip access-list standard MGMT-SSH
  permit 10.0.10.0 0.0.0.255
  permit 10.1.10.0 0.0.0.255
  deny any
line con 0
!
line vty 0 4
  access-class MGMT-SSH in
  login local
  transport input ssh
line vty 5 15
  login
!
!
!
!
end
```

SWITCH A2 (C2960)

```
===== SWITCH A2 (C2960) =====
Current configuration : 1964 bytes
!
version 15.0
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname SWA2
!
!
!
ip ssh version 2
ip domain-name campus.lab
!
username netadmin secret 5 $1$mERr$5.a6P4JqbNiMX0lusIfka/
!
!
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
 switchport trunk allowed vlan 10,20,30,40
 switchport mode trunk
 spanning-tree portfast trunk
!
interface FastEthernet0/2
 switchport trunk allowed vlan 10,20,30,40
 switchport mode trunk
 spanning-tree portfast trunk
 spanning-tree vlan 10,20,30,40 port-priority 64
!
interface FastEthernet0/3
 description PC11 HR
 switchport access vlan 20
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/4
 description PC0 PR
 switchport access vlan 30
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/5
 description PC1 PR
 switchport access vlan 30
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
```

```
!  
interface FastEthernet0/14  
!  
interface FastEthernet0/15  
!  
interface FastEthernet0/16  
!  
interface FastEthernet0/17  
!  
interface FastEthernet0/18  
!  
interface FastEthernet0/19  
!  
interface FastEthernet0/20  
!  
interface FastEthernet0/21  
!  
interface FastEthernet0/22  
!  
interface FastEthernet0/23  
!  
interface FastEthernet0/24  
!  
interface GigabitEthernet0/1  
!  
interface GigabitEthernet0/2  
!  
interface Vlan1  
  no ip address  
  shutdown  
!  
!  
!  
!  
ip access-list standard MGMT-SSH  
  permit 10.0.10.0 0.0.0.255  
  permit 10.1.10.0 0.0.0.255  
  deny any  
line con 0  
!  
line vty 0 4  
  access-class MGMT-SSH in  
  login local  
  transport input ssh  
line vty 5 15  
  login  
!  
!  
!  
!  
end
```

SWITCH B1 (C2960)

```
===== SWITCH B1 (C2960) =====
Current configuration : 1905 bytes
!
version 15.0
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname SWB1
!
!
!
ip domain-name campus.lab
!
username netadmin secret 5 $1$mERr$5.a6P4JqbNiMX0lusIfka/
!
!
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
 switchport trunk allowed vlan 10,20,30,40
 switchport mode trunk
 spanning-tree portfast trunk
!
interface FastEthernet0/2
 switchport trunk allowed vlan 10,20,30,40
 switchport mode trunk
 spanning-tree portfast trunk
!
interface FastEthernet0/3
 description PC5  MGMT
 switchport access vlan 30
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/4
 description PC6  MGMT
 switchport access vlan 30
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/5
 description PC10 LEGAL
 switchport access vlan 20
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
```

```
!  
interface FastEthernet0/15  
!  
interface FastEthernet0/16  
!  
interface FastEthernet0/17  
!  
interface FastEthernet0/18  
!  
interface FastEthernet0/19  
!  
interface FastEthernet0/20  
!  
interface FastEthernet0/21  
!  
interface FastEthernet0/22  
!  
interface FastEthernet0/23  
!  
interface FastEthernet0/24  
!  
interface GigabitEthernet0/1  
!  
interface GigabitEthernet0/2  
!  
interface Vlan1  
  no ip address  
  shutdown  
!  
!  
!  
!  
ip access-list standard MGMT-SSH  
  permit 10.0.10.0 0.0.0.255  
  permit 10.1.10.0 0.0.0.255  
  deny any  
line con 0  
!  
line vty 0 4  
  access-class MGMT-SSH in  
  login local  
  transport input ssh  
line vty 5 15  
  login  
!  
!  
!  
!  
end
```

SWITCH B2 (C2960)

```
===== SWITCH B2 (C2960) =====
Current configuration : 1967 bytes
!
version 15.0
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname SWB2
!
!
!
ip ssh version 2
ip domain-name campus.lab
!
username netadmin secret 5 $l$mERr$5.a6P4JqbNiMX0lusIfka/
!
!
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
 switchport trunk allowed vlan 10,20,30,40
 switchport mode trunk
 spanning-tree portfast trunk
!
interface FastEthernet0/2
 switchport trunk allowed vlan 10,20,30,40
 switchport mode trunk
 spanning-tree portfast trunk
 spanning-tree vlan 10,20,30,40 port-priority 64
!
interface FastEthernet0/3
 description PC9  LEGAL
 switchport access vlan 20
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/4
 description PC8  IT
 switchport access vlan 10
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/5
 description PC7  IT
 switchport access vlan 10
 switchport mode access
 spanning-tree portfast
 spanning-tree bpduguard enable
!
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
```

```
!  
interface FastEthernet0/14  
!  
interface FastEthernet0/15  
!  
interface FastEthernet0/16  
!  
interface FastEthernet0/17  
!  
interface FastEthernet0/18  
!  
interface FastEthernet0/19  
!  
interface FastEthernet0/20  
!  
interface FastEthernet0/21  
!  
interface FastEthernet0/22  
!  
interface FastEthernet0/23  
!  
interface FastEthernet0/24  
!  
interface GigabitEthernet0/1  
!  
interface GigabitEthernet0/2  
!  
interface Vlan1  
  no ip address  
  shutdown  
!  
!  
!  
!  
ip access-list standard MGMT-SSH  
  permit 10.0.10.0 0.0.0.255  
  permit 10.1.10.0 0.0.0.255  
  deny any  
line con 0  
!  
line vty 0 4  
  access-class MGMT-SSH in  
  login local  
  transport input ssh  
line vty 5 15  
  login  
!  
!  
!  
!  
end
```


MULTILAYERSWITCH A (C3560)

===== MULTILAYERSWITCH A (C3560) =====

Current configuration : 2495 bytes

!

version 12.2(37)SE1

no service timestamps log datetime msec

no service timestamps debug datetime msec

no service password-encryption

!

hostname MLSA

!

!

!

!

!

!

ip routing

!

!

!

!

username admin privilege 15 secret 5 \$1\$mERr\$hysK6NecugaeGcSGo29Wf0

username netadmin privilege 15 secret 5 \$1\$mERr\$5.a6P4JqbNiMX0lusIfka/

!

!

!

!

!

!

!

!

!

!

ip ssh version 2

ip domain-name campus.local

!

!

spanning-tree mode rapid-pvst

spanning-tree vlan 10,20,30,40 priority 24576

!

!

!

!

!

!

interface FastEthernet0/1

no switchport

ip address 10.0.254.1 255.255.255.252

duplex auto

speed auto

!

interface FastEthernet0/2

switchport trunk allowed vlan 10,20,30,40

switchport trunk encapsulation dot1q

switchport mode trunk

!

interface FastEthernet0/3

switchport trunk allowed vlan 10,20,30,40

switchport trunk encapsulation dot1q

switchport mode trunk

!

interface FastEthernet0/4

description ServerA

switchport access vlan 40

switchport mode access

spanning-tree portfast

!

interface FastEthernet0/5

!

interface FastEthernet0/6

```
!  
interface FastEthernet0/7  
!  
interface FastEthernet0/8  
!  
interface FastEthernet0/9  
!  
interface FastEthernet0/10  
!  
interface FastEthernet0/11  
!  
interface FastEthernet0/12  
!  
interface FastEthernet0/13  
!  
interface FastEthernet0/14  
!  
interface FastEthernet0/15  
!  
interface FastEthernet0/16  
!  
interface FastEthernet0/17  
!  
interface FastEthernet0/18  
!  
interface FastEthernet0/19  
!  
interface FastEthernet0/20  
!  
interface FastEthernet0/21  
!  
interface FastEthernet0/22  
!  
interface FastEthernet0/23  
!  
interface FastEthernet0/24  
!  
interface GigabitEthernet0/1  
!  
interface GigabitEthernet0/2  
!  
interface Vlan1  
  no ip address  
  shutdown  
!  
interface Vlan10  
  mac-address 00d0.d347.9a01  
  ip address 10.0.10.1 255.255.255.0  
  ip helper-address 10.0.40.10  
!  
interface Vlan20  
  mac-address 00d0.d347.9a02  
  ip address 10.0.20.1 255.255.255.0  
  ip helper-address 10.0.40.10  
!  
interface Vlan30  
  mac-address 00d0.d347.9a03  
  ip address 10.0.30.1 255.255.255.0  
  ip helper-address 10.0.40.10  
!  
interface Vlan40  
  mac-address 00d0.d347.9a04  
  ip address 10.0.40.1 255.255.255.0  
!  
ip classless  
ip route 0.0.0.0 0.0.0.0 10.0.254.2  
!  
ip flow-export version 9  
!  
!  
ip access-list standard MGMT-SSH
```

```
permit 10.0.10.0 0.0.0.255
permit 10.1.10.0 0.0.0.255
deny any
ip access-list standard IT-MGMT
permit 10.0.10.0 0.0.0.255
permit 10.1.10.0 0.0.0.255
deny any
!
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
access-class IT-MGMT in
exec-timeout 15 0
login local
transport input ssh
!
!
!
!
end
```

MULTILAYERSWITCH B (C3560) :

===== MULTILAYERSWITCH B (C3560) =====

Current configuration : 2724 bytes

!

version 12.2(37)SE1

no service timestamps log datetime msec

no service timestamps debug datetime msec

no service password-encryption

!

hostname MLSB

!

!

!

!

!

!

ip routing

!

!

!

!

username admin privilege 15 secret 5 \$1\$mERr\$hysK6NecugaeGcSGo29Wf0

username netadmin privilege 15 secret 5 \$1\$mERr\$5.a6P4JqbNiMX0lusIfka/

!

!

!

!

!

!

!

!

!

!

ip ssh version 2

ip domain-name campus.local

!

!

spanning-tree mode rapid-pvst

spanning-tree vlan 10,20,30,40 priority 28672

!

!

!

!

!

!

interface FastEthernet0/1

no switchport

ip address 10.1.254.1 255.255.255.252

ip access-group BLOCK-MGMT-IN in

duplex auto

speed auto

!

interface FastEthernet0/2

switchport trunk allowed vlan 10,20,30,40

switchport trunk encapsulation dot1q

switchport mode trunk

!

interface FastEthernet0/3

switchport trunk allowed vlan 10,20,30,40

switchport trunk encapsulation dot1q

switchport mode trunk

!

interface FastEthernet0/4

description ServerB

switchport access vlan 40

switchport mode access

spanning-tree portfast

!

interface FastEthernet0/5

!

```
interface FastEthernet0/6
!
interface FastEthernet0/7
!
interface FastEthernet0/8
!
interface FastEthernet0/9
!
interface FastEthernet0/10
!
interface FastEthernet0/11
!
interface FastEthernet0/12
!
interface FastEthernet0/13
!
interface FastEthernet0/14
!
interface FastEthernet0/15
!
interface FastEthernet0/16
!
interface FastEthernet0/17
!
interface FastEthernet0/18
!
interface FastEthernet0/19
!
interface FastEthernet0/20
!
interface FastEthernet0/21
!
interface FastEthernet0/22
!
interface FastEthernet0/23
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
no ip address
shutdown
!
interface Vlan10
mac-address 0001.42a3.b801
ip address 10.1.10.1 255.255.255.0
ip helper-address 10.1.40.10
!
interface Vlan20
mac-address 0001.42a3.b802
ip address 10.1.20.1 255.255.255.0
ip helper-address 10.1.40.10
!
interface Vlan30
mac-address 0001.42a3.b803
ip address 10.1.30.1 255.255.255.0
ip helper-address 10.1.40.10
ip access-group BLOCK-MGMT-IN in
!
interface Vlan40
mac-address 0001.42a3.b804
ip address 10.1.40.1 255.255.255.0
!
ip classless
ip route 0.0.0.0 0.0.0.0 10.1.254.2
!
ip flow-export version 9
!
```

```
!  
ip access-list standard MGMT-SSH  
  permit 10.0.10.0 0.0.0.255  
  permit 10.1.10.0 0.0.0.255  
  deny any  
ip access-list extended BLOCK-MGMT-IN  
  remark Block HR-A (10.0.20.0/24) from reaching MGMT-B  
  deny ip 10.0.20.0 0.0.0.255 10.1.30.0 0.0.0.255  
  permit ip any any  
ip access-list standard IT-MGMT  
  permit 10.0.10.0 0.0.0.255  
  permit 10.1.10.0 0.0.0.255  
  deny any  
!  
!  
!  
!  
!  
!  
line con 0  
!  
line aux 0  
!  
line vty 0 4  
  access-class IT-MGMT in  
  exec-timeout 15 0  
  login local  
  transport input ssh  
!  
!  
!  
!  
end
```

ROUTER A (C2911)

```
===== ROUTER A (C2911) =====
Current configuration : 2223 bytes
!
version 15.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname RouterA
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
!
username admin privilege 15 secret 5 $1$mERr$hysK6NecugaeGcSGo29Wf0
!
!
!
license udi pid CISCO2911/K9 sn FTX1524VH0H-
license boot module c2900 technology-package securityk9
!
!
!
crypto isakmp policy 10
  encr aes 256
  authentication pre-share
  group 5
!
crypto isakmp key CampusKey123 address 10.255.255.2
!
!
!
crypto ipsec transform-set R_A-R_B esp-aes 256 esp-sha-hmac
!
crypto map IPSEC-GRE 100 ipsec-isakmp
  set peer 10.255.255.2
  set pfs group5
  set security-association lifetime seconds 86400
  set transform-set R_A-R_B
  match address 110
!
!
!
!
ip ssh version 2
ip domain-name campus.local
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface Tunnell
  ip address 50.50.50.1 255.255.255.252
  mtu 1476
  tunnel source GigabitEthernet0/1
  tunnel destination 10.255.255.2
!
!
```

```

interface GigabitEthernet0/0
description To MLS-A
ip address 10.0.254.2 255.255.255.252
ip nat inside
duplex auto
speed auto
!
interface GigabitEthernet0/1
description Inter-campus
ip address 10.255.255.1 255.255.255.252
ip nat inside
duplex auto
speed auto
crypto map IPSEC-GRE
!
interface GigabitEthernet0/2
description WAN to ISP
ip address 203.0.113.2 255.255.255.252
ip nat outside
duplex auto
speed auto
!
interface Vlan1
no ip address
shutdown
!
ip nat inside source list 100 interface GigabitEthernet0/2 overload
ip nat inside source static 10.0.40.10 203.0.113.10
ip nat inside source static 10.1.40.10 203.0.113.11
ip classless
ip route 10.1.0.0 255.255.0.0 10.255.255.2
ip route 0.0.0.0 0.0.0.0 203.0.113.1
ip route 10.0.0.0 255.255.0.0 10.0.254.1
ip route 10.1.0.0 255.255.0.0 50.50.50.2
!
ip flow-export version 9
!
!
access-list 100 permit ip 10.0.0.0 0.0.255.255 any
access-list 100 permit ip 10.1.0.0 0.0.255.255 any
access-list 110 permit gre host 10.255.255.1 host 10.255.255.2
ip access-list standard IT-MGMT
permit 10.0.10.0 0.0.0.255
permit 10.1.10.0 0.0.0.255
deny any
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
access-class IT-MGMT in
exec-timeout 15 0
login local
transport input ssh
!
!
!
end

```


ROUTER B (C2911)

```
===== ROUTER B (C2911) =====
Current configuration : 1863 bytes
!
version 15.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname RouterB
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
!
username admin privilege 15 secret 5 $1$mERr$hysK6NecugaeGcSGo29Wf0
!
!
!
license udi pid CISCO2911/K9 sn FTX1524X9HG-
license boot module c2900 technology-package securityk9
!
!
!
crypto isakmp policy 10
  encr aes 256
  authentication pre-share
  group 5
!
crypto isakmp key CampusKey123 address 10.255.255.1
!
!
!
crypto ipsec transform-set R_B-R_A esp-aes 256 esp-sha-hmac
!
crypto map IPSEC-GRE 100 ipsec-isakmp
  set peer 10.255.255.1
  set pfs group5
  set security-association lifetime seconds 86400
  set transform-set R_B-R_A
  match address 110
!
!
!
!
ip ssh version 2
ip domain-name campus.local
!
!
spanning-tree mode pvst
!
!
!
!
!
!
interface Tunnell
  ip address 50.50.50.2 255.255.255.252
  mtu 1476
  tunnel source GigabitEthernet0/1
  tunnel destination 10.255.255.1
!
!
```

```

interface GigabitEthernet0/0
description To MLS-B
ip address 10.1.254.2 255.255.255.252
duplex auto
speed auto
!
interface GigabitEthernet0/1
description Inter-campus
ip address 10.255.255.2 255.255.255.252
duplex auto
speed auto
crypto map IPSEC-GRE
!
interface GigabitEthernet0/2
no ip address
duplex auto
speed auto
shutdown
!
interface Vlan1
no ip address
shutdown
!
ip classless
ip route 10.0.0.0 255.255.0.0 10.255.255.1
ip route 0.0.0.0 0.0.0.0 10.255.255.1
ip route 10.1.0.0 255.255.0.0 10.1.254.1
ip route 10.0.0.0 255.255.0.0 50.50.50.1
!
ip flow-export version 9
!
!
access-list 110 permit gre host 10.255.255.2 host 10.255.255.1
ip access-list standard IT-MGMT
permit 10.0.10.0 0.0.0.255
permit 10.1.10.0 0.0.0.255
deny any
!
!
!
!
!
line con 0
!
line aux 0
!
line vty 0 4
access-class IT-MGMT in
exec-timeout 15 0
login local
transport input ssh
!
!
!
end

```

ROUTER ISP (C2911)

```
===== ROUTER ISP (C2911) =====
Current configuration : 822 bytes
!
version 15.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname ISP
!
!
!
!
!
!
!
!
ip cef
no ipv6 cef
!
!
!
!
license udi pid CISCO2911/K9 sn FTX1524VGDI-
!
!
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
interface Loopback0
 ip address 8.8.8.8 255.255.255.255
!
interface GigabitEthernet0/0
 description To Customer
 ip address 203.0.113.1 255.255.255.252
 duplex auto
 speed auto
!
interface GigabitEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface GigabitEthernet0/2
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Vlan1
 no ip address
 shutdown
!
ip classless
ip route 0.0.0.0 0.0.0.0 203.0.113.2
```

```
!  
ip flow-export version 9  
!  
!  
!  
!  
!  
!  
!  
line con 0  
!  
line aux 0  
!  
line vty 0 4  
  login  
!  
!  
!  
end
```