



SBA
FOR
GOVT

MIDSIZE

BORDERLESS
NETWORKS

Foundation Configuration Files Guide

● ● ● SBA FOR GOVERNMENT

Revision: H2CY10

The Purpose of This Guide

As a companion to the Cisco Smart Business Architecture (SBA) for Government Midsize Agencies—Borderless Networks Foundation Deployment Guide, this document provides the available configuration files for the products used in the SBA for Midsize Agencies—Borderless Networks Foundation design.

Who Should Read This Guide

This guide is intended for the reader with any or all of the following:

- 100-1000 connected employees
- Up to 20 branches with approximately 25 employees each
- External-facing applications, which are hosted offsite
- A server room where agency applications are located
- IT workers with a CCNA® certification or equivalent experience

The reader may be looking for any or all of the following:

- A solution for teleworker and mobile worker
- Security for agency resources
- Wired and wireless network access for employees
- Wireless guest access
- Solutions for wired and wireless voice access

- A migration path for growth
- Ways to reduce cost by optimizing WAN bandwidth
- The assurance of a tested solution

Related Documents

Before reading this guide

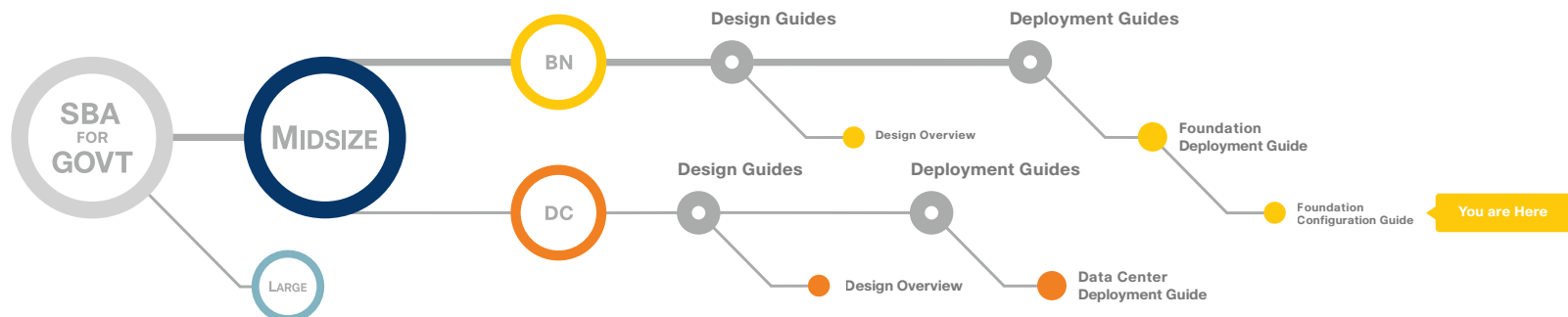
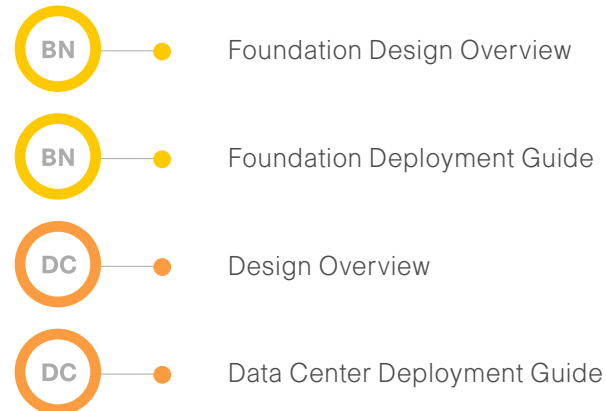


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Introduction

For our partners servicing customers with 100-1000 connected users, Cisco has designed an out-of-the-box deployment that is simple, fast, affordable, scalable, and flexible. We have designed it to be easy—easy to configure, deploy, and manage.

The simplicity of this deployment, though, masks the depth and breadth of the architecture. Based on feedback from many customers and partners, Cisco has developed a solid network foundation with a flexible platform that does not require re-engineering to support additional network or user services.

This guide provides the available configuration files for the products used in the SBA for Midsize Agencies Borderless Networks Foundation design. It includes following configuration files:

- Campus Module
- Client Access
- Server Room
- Campus Access
- WAN Routers
- Security Module

Those products with browser-based graphical configuration tools are omitted from this guide. Please refer to the companion Cisco SBA for Midsize Agencies Borderless Networks Foundation Deployment Guide on Cisco.com for step-by-step instructions on configuring those products.

Refer to Appendix A for a complete list of products used in the lab testing of this design.

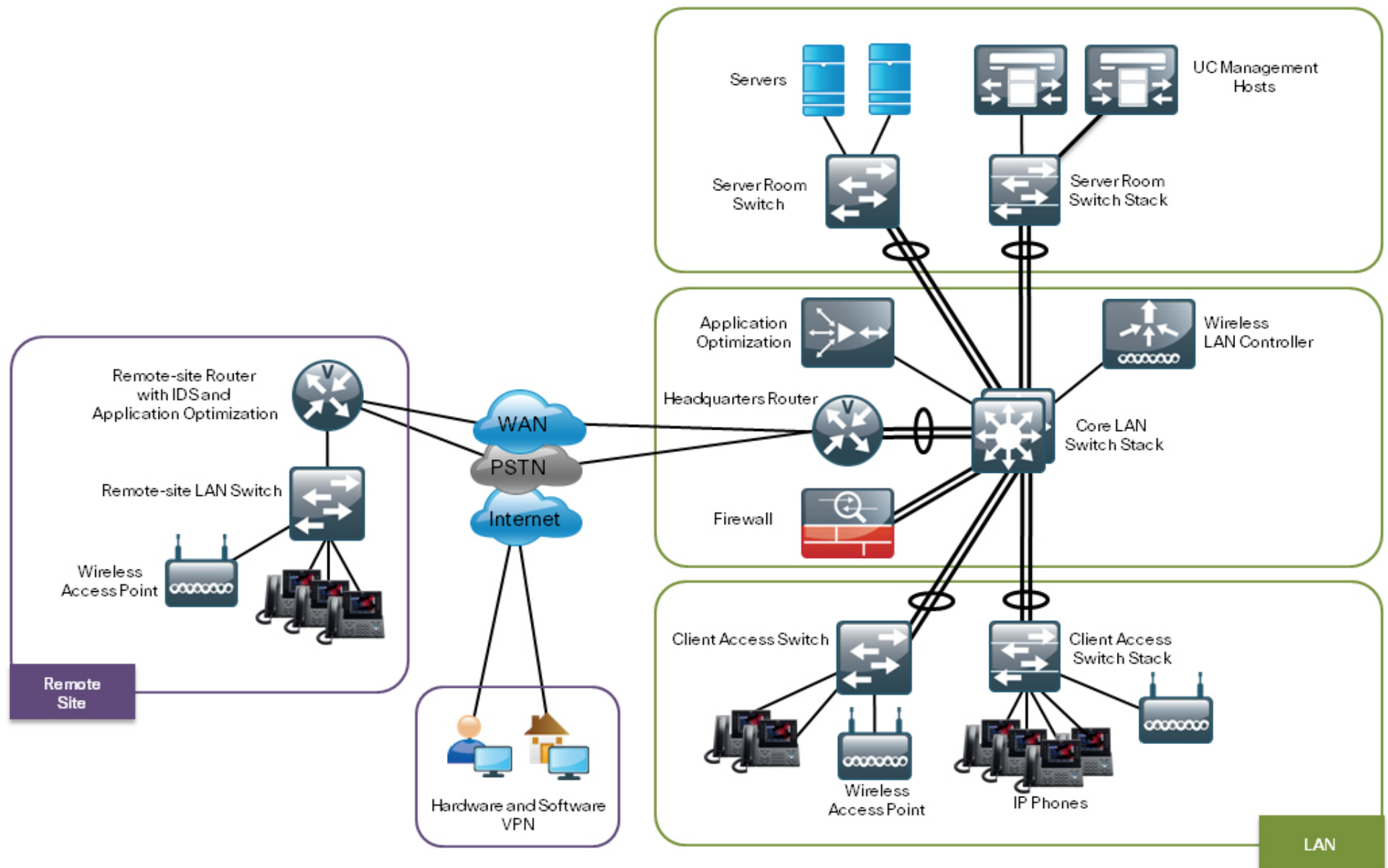


Tech Tip

The actual settings and values will depend on your current network configuration. Please review all settings and configuration changes before submitting them.

Figure 1 illustrates the complete SBA foundation design with all of the modules deployed.

Figure 1. Network Architecture Baseline



Campus

Campus Core, Cisco Catalyst 3750 Switch

```
version 12.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
service sequence-numbers
!
hostname 3750C1
!
enable secret *****
!
username ***** password *****
no aaa new-model
clock timezone UTC -8
clock summer-time UTC recurring
switch 1 provision ws-c3750g-12s
switch 2 provision ws-c3750g-12s
system mtu routing 1500
vtp mode transparent
udld aggressive
ip subnet-zero
ip routing
ip domain-name cisco.com
ip dhcp database flash:dhcp-access
ip dhcp relay information trust-all
ip dhcp excluded-address 192.168.8.1 192.168.8.10
ip dhcp excluded-address 192.168.10.1 192.168.10.10
ip dhcp excluded-address 192.168.12.1 192.168.12.10
ip dhcp excluded-address 192.168.14.1 192.168.14.10
!
ip dhcp pool access
    network 192.168.8.0 255.255.255.0
    default-router 192.168.8.1
    domain-name wwss.local
    dns-server 192.168.28.10
!
ip dhcp pool voice
    network 192.168.12.0 255.255.255.0
    default-router 192.168.12.1
    dns-server 192.168.28.10
```

```
option 150 ip 192.168.28.20 192.168.28.21
domain-name wwss.local
!
ip dhcp pool wireless-access
    network 192.168.10.0 255.255.255.0
    default-router 192.168.10.1
    domain-name wwss.local
    dns-server 192.168.28.10
!
ip dhcp pool wireless-voice
    network 192.168.14.0 255.255.255.0
    default-router 192.168.14.1
    domain-name wwss.local
    dns-server 192.168.28.10
option 150 ip 192.168.28.20 192.168.28.21
!
ip multicast-routing distributed
!
mls qos map cos-dscp 0 8 16 24 32 46 48 56
mls qos srr-queue input bandwidth 90 10
mls qos srr-queue input threshold 1 8 16
mls qos srr-queue input threshold 2 34 66
mls qos srr-queue input buffers 67 33
mls qos srr-queue input cos-map queue 1 threshold 2 1
mls qos srr-queue input cos-map queue 1 threshold 3 0
mls qos srr-queue input cos-map queue 2 threshold 1 2
mls qos srr-queue input cos-map queue 2 threshold 2 4 6 7
mls qos srr-queue input cos-map queue 2 threshold 3 3 5
mls qos srr-queue input dscp-map queue 1 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue input dscp-map queue 1 threshold 3 0 1 2 3 4 5 6 7
mls qos srr-queue input dscp-map queue 1 threshold 3 32
mls qos srr-queue input dscp-map queue 2 threshold 1 16 17 18 19 20 21 22 23
mls qos srr-queue input dscp-map queue 2 threshold 2 33 34 35 36 37 38 39 48
mls qos srr-queue input dscp-map queue 2 threshold 2 49 50 51 52 53 54 55 56
mls qos srr-queue input dscp-map queue 2 threshold 2 57 58 59 60 61 62 63
mls qos srr-queue input dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue input dscp-map queue 2 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output cos-map queue 1 threshold 3 5
mls qos srr-queue output cos-map queue 2 threshold 3 3 6 7
mls qos srr-queue output cos-map queue 3 threshold 3 2 4
mls qos srr-queue output cos-map queue 4 threshold 2 1
mls qos srr-queue output cos-map queue 4 threshold 3 0
mls qos srr-queue output dscp-map queue 1 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue output dscp-map queue 2 threshold 3 48 49 50 51 52 53 54 55
mls qos srr-queue output dscp-map queue 2 threshold 3 56 57 58 59 60 61 62 63
mls qos srr-queue output dscp-map queue 3 threshold 3 16 17 18 19 20 21 22 23
mls qos srr-queue output dscp-map queue 3 threshold 3 32 33 34 35 36 37 38 39
```

```

mls qos srr-queue output dscp-map queue 4 threshold 1 8
mls qos srr-queue output dscp-map queue 4 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue output dscp-map queue 4 threshold 3 0 1 2 3 4 5 6 7
mls qos queue-set output 1 threshold 1 138 138 92 138
mls qos queue-set output 1 threshold 2 138 138 92 400
mls qos queue-set output 1 threshold 3 36 77 100 318
mls qos queue-set output 1 threshold 4 20 50 67 400
mls qos queue-set output 2 threshold 1 149 149 100 149
mls qos queue-set output 2 threshold 2 118 118 100 235
mls qos queue-set output 2 threshold 3 41 68 100 272
mls qos queue-set output 2 threshold 4 42 72 100 242
mls qos queue-set output 1 buffers 10 10 26 54
mls qos queue-set output 2 buffers 16 6 17 61
mls qos
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
spanning-tree vlan 1-1005 priority 24576
!
vlan internal allocation policy ascending
!
vlan 8,10,12,14,16,28-31
!
ip tftp source-interface Vlan1
ip ssh version 2
!
!
!
interface Port-channel1
description Trunk to Wiring Closet 1
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
!
interface Port-channel2
description Trunk to Wiring Closet 2
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
!
interface Port-channel3
description Trunk to Wiring Closet 3
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
!
interface Port-channel4
description Trunk to Wiring Closet 4

```

```

switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
!
interface Port-channel5
description Trunk to Server Farm Switch 1
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,28,29
switchport mode trunk
!
interface Port-channel6
description Trunk to Server Farm Switch 2
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,28,29
switchport mode trunk
!
interface Port-channel7
switchport trunk encapsulation dot1q
switchport mode trunk
!
interface Port-channel8
description Wide Area Acceleration Appliance
switchport access vlan 31
switchport mode access
!
interface Port-channel11
description WLAN Controller
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 10,14,16,31
switchport mode trunk
!
interface Port-channel12
description WAN Edge ISR 3845
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 31
switchport mode trunk
!
interface GigabitEthernet1/0/1
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
channel-group 1 mode on
spanning-tree link-type point-to-point

```

```

!
interface GigabitEthernet1/0/2
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 1,8,12
 switchport mode trunk
 srr-queue bandwidth share 10 10 60 20
 queue-set 2
 priority-queue out
 mls qos trust cos
 auto qos voip trust
 channel-group 2 mode on
 spanning-tree link-type point-to-point
!
interface GigabitEthernet1/0/3
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 1,8,12
 switchport mode trunk
 srr-queue bandwidth share 10 10 60 20
 queue-set 2
 priority-queue out
 mls qos trust cos
 auto qos voip trust
 channel-group 3 mode on
 spanning-tree link-type point-to-point
!
interface GigabitEthernet1/0/4
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 1,8,12
 switchport mode trunk
 srr-queue bandwidth share 10 10 60 20
 queue-set 2
 priority-queue out
 mls qos trust cos
 auto qos voip trust
 channel-group 4 mode on
 spanning-tree link-type point-to-point
!
interface GigabitEthernet1/0/5
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 1,28,29
 switchport mode trunk
 srr-queue bandwidth share 10 10 60 20
 queue-set 2
 priority-queue out
 mls qos trust dscp
 auto qos voip trust
 channel-group 5 mode on
 spanning-tree link-type point-to-point

```

```

!
interface GigabitEthernet1/0/6
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 1,28,29
 switchport mode trunk
 srr-queue bandwidth share 10 10 60 20
 queue-set 2
 priority-queue out
 mls qos trust dscp
 auto qos voip trust
 channel-group 7 mode on
 spanning-tree link-type point-to-point
!
interface GigabitEthernet1/0/7
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 1,8,12
 switchport mode trunk
 srr-queue bandwidth share 10 10 60 20
 queue-set 2
 priority-queue out
 mls qos trust cos
 auto qos voip trust
 channel-group 2 mode on
 spanning-tree link-type point-to-point
!
interface GigabitEthernet1/0/8
 description WAAS
 switchport access vlan 31
 switchport mode access
 srr-queue bandwidth share 10 10 60 20
 queue-set 2
 priority-queue out
 mls qos trust cos
 auto qos voip trust
 channel-group 8 mode on
 spanning-tree link-type point-to-point
!
interface GigabitEthernet1/0/9
 switchport trunk encapsulation dot1q
 switchport mode access
 srr-queue bandwidth share 10 10 60 20
 queue-set 2
 priority-queue out
 mls qos trust cos
 auto qos voip trust
!
interface GigabitEthernet1/0/10
 description ASA5510

```



```

switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,16,31
switchport mode trunk
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust cos
auto qos voip trust
spanning-tree link-type point-to-point
!
interface GigabitEthernet1/0/11
description WLAN Controller
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 10,14,16,31
switchport mode trunk
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
channel-group 11 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet1/0/12
description ISR3845
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 31
switchport mode trunk
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
channel-group 12 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/1
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust cos
auto qos voip trust
channel-group 1 mode on
spanning-tree link-type point-to-point
!

```

```

interface GigabitEthernet2/0/2
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust cos
auto qos voip trust
channel-group 2 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/3
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust cos
auto qos voip trust
channel-group 3 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/4
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust cos
auto qos voip trust
channel-group 4 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/5
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,28,29
switchport mode trunk
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust cos
auto qos voip trust
channel-group 5 mode on
spanning-tree link-type point-to-point
!

```

```

interface GigabitEthernet2/0/6
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 1,28,29
  switchport mode trunk
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust cos
  auto qos voip trust
  channel-group 6 mode on
  spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/7
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 1,8,12
  switchport mode trunk
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust cos
  auto qos voip trust
  channel-group 2 mode on
  spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/8
  description WAAS
  switchport access vlan 31
  switchport mode access
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust cos
  auto qos voip trust
  channel-group 8 mode on
  spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/9
  switchport trunk encapsulation dot1q
  switchport mode trunk
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust cos
  auto qos voip trust
  spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/10
  description ASA5510

  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 16,31
  switchport mode trunk
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust cos
  auto qos voip trust
  spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/11
  description WLAN Controller
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 10,14,16,31
  switchport mode trunk
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust dscp
  auto qos voip trust
  channel-group 11 mode on
  spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/12
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 17,31
  switchport mode trunk
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust dscp
  auto qos voip trust
  channel-group 12 mode on
  spanning-tree link-type point-to-point
!
interface Vlan1
  ip address 192.168.1.1 255.255.255.0
!
interface Vlan8
  description Data
  ip address 192.168.8.1 255.255.255.0
  ip pim sparse-mode
!
interface Vlan10
  description Data WLAN
  ip address 192.168.10.1 255.255.255.0
!
interface Vlan12

```

```

description Voice
ip address 192.168.12.1 255.255.255.0
ip pim sparse-mode
!
interface Vlan14
description Voice WLAN
ip address 192.168.14.1 255.255.255.0
!
interface Vlan16
description Wireless Guest *** SET NO IP ADDRESS ****
no ip address
!
interface Vlan28
ip address 192.168.28.1 255.255.255.0
ip pim sparse-mode
!
interface Vlan29
ip address 192.168.29.1 255.255.255.0
ip pim sparse-mode
!
interface Vlan31
description Network Services and WAN Router
ip address 192.168.31.1 255.255.255.0
ip pim sparse-mode
!
router eigrp 1
network 192.168.0.0 0.0.255.255
passive-interface default
no passive-interface Vlan31
!
ip classless
ip http server
ip http secure-server
!
ip pim rp-address 192.168.31.1
!
snmp-server community ***** RO
snmp-server community ***** RW
!
control-plane
!
!
line con 0
line vty 0 4
login local
transport input all
line vty 5 15
login local

```

```

transport input all
!
!
monitor session 1 source vlan 1 - 31
monitor session 1 destination interface Gil/0/9
ntp clock-period 36027834
ntp server 192.168.31.2
end

```

Campus Core, Cisco Catalyst 4507R Switch

```
version 12.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
service compress-config
!
hostname 4507RC2
!
boot-start-marker
boot-end-marker
!
enable secret 5 *****
!
username ***** privilege 15 password 0 *****
no aaa new-model
clock timezone UTC -8
clock summer-time UTC recurring
udld aggressive
ip subnet-zero
ip domain-name wwss.local
ip dhcp database flash:dhcp-access
ip dhcp relay information trust-all
ip dhcp excluded-address 192.168.8.1 192.168.8.10
ip dhcp excluded-address 192.168.12.1 192.168.12.10
ip dhcp excluded-address 192.168.16.1 192.168.16.10
ip dhcp excluded-address 192.168.17.1 192.168.17.10
ip dhcp excluded-address 192.168.10.1 192.168.10.10
ip dhcp excluded-address 192.168.14.1 192.168.14.10
ip dhcp excluded-address 192.168.16.1 192.168.16.10
!
ip dhcp pool access
    network 192.168.8.0 255.255.255.0
    default-router 192.168.8.1
    domain-name wwss.local
    dns-server 192.168.28.10
!
ip dhcp pool voice
    network 192.168.12.0 255.255.255.0
    default-router 192.168.12.1
    dns-server 192.168.28.10
    option 150 ip 192.168.28.20 192.168.28.21
    domain-name wwss.local
!
ip dhcp pool guest
    network 192.168.16.0 255.255.255.0
    default-router 192.168.16.1
```

```
!
ip dhcp pool wireless-access
    network 192.168.10.0 255.255.255.0
    default-router 192.168.10.1
    domain-name wwss.local
    dns-server 192.168.28.10
!
ip dhcp pool wireless-voice
    network 192.168.14.0 255.255.255.0
    default-router 192.168.14.1
    domain-name wwss.local
    dns-server 192.168.28.10
    option 150 ip 192.168.28.20 192.168.28.21
!
ip dhcp pool wireless-guest
    network 192.168.16.0 255.255.255.0
    default-router 192.168.16.1
    domain-name wwss.local
    dns-server 192.168.28.10
!
ip multicast-routing
vtp mode transparent
cluster run
!
!
crypto pki trustpoint TP-self-signed-12209
    enrollment selfsigned
    subject-name cn=IOS-Self-Signed-Certificate-12209
    revocation-check none
    rsakeypair TP-self-signed-12209
!
!
crypto pki certificate chain TP-self-signed-12209
certificate self-signed 01
    3082023F 308201A8 A0030201 02020101 300D0609 2A864886 F70D0101 04050030
    2C312A30 28060355 04031321 494F532D 53656C66 2D536967 6E65642D 43657274
    69666963 6174652D 31323230 39301E17 0D303831 31303931 37343930 395A170D
    32303031 30313030 30303030 5A302C31 2A302806 03550403 1321494F 532D5365
    6C662D53 69676E65 642D4365 72746966 69636174 652D3132 32303930 819F300D
    06092A86 4886F70D 01010105 0003818D 00308189 02818100 C4BF6788 5A0ACBD7
    ACD710B6 49E9C005 8F0F86B0 4FE13D04 6A724C1C 59C4C9CD 96956991 251A9F59
    EC773AB7 49262398 4B369FB3 D14D963A 55A8FD48 E9C3F07B 24CBB9AA D8764125
    C44C8D1A EABCAD35 FE90A6BF 3611ED34 52FB0440 C4BCBF99 07AFA924 36FCDE9A
    4B5935EA C0DA124A 89BA5CB4 60812E9D D3E05D09 A0BDCC13 02030100 01A37130
    6F300F06 03551D13 0101FF04 05300301 01FF301C 0603551D 11041530 13821134
    35303752 43322E63 6973636F 2E636F6D 301F0603 551D2304 18301680 14054225
    523B53F4 FD843583 88F28EBE 5DADFA6E 3C301D06 03551D0E 04160414 05422552
    3B53F4FD 84358388 F28EBE5D ADFA6E3C 300D0609 2A864886 F70D0101 04050003
```

```

8181008C 5DE3731D D4A22B64 81FD65C7 16024EEB 6F0BF264 C99FBFE4 78CDC844
2907FDB5 476451B8 284785EB 2F13A8FF 8CD22EF8 469DDD69 C26724F2 C3DBEA76
B1131D28 2CCAA887 30189BDA 0469F8BC 6D54E0B3 A5BA292F FC0E49C6 660F6A48
211673BF DA03DCBE 1CAC91FF 055E3B76 17175A12 B16E1B93 E51F0C95 2D2AF7DB
8A1148
quit
power redundancy-mode redundant
!
!
!
!
!
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
spanning-tree vlan 1-1005 priority 24576
!
redundancy
mode rpr
!
vlan internal allocation policy ascending
!
vlan 8,10,12,14,16,28-31
!
ip ssh version 2
!
class-map match-all AutoQos-VoIP-Control-Dscp26
    match dscp af31
class-map match-all AutoQos-VoIP-Control-Dscp24
    match dscp cs3
class-map match-all AutoQos-VoIP-Bearer-Cos
    match cos 5
class-map match-all AutoQos-VoIP-Control-QosGroup24
    match qos-group 24
class-map match-all AutoQos-VoIP-Control-QosGroup26
    match qos-group 26
class-map match-all AutoQos-VoIP-Bearer-QosGroup
    match qos-group 46
class-map match-all AutoQos-VoIP-Bearer-Dscp
    match dscp ef
class-map match-all AutoQos-VoIP-Control-Cos
    match cos 3
!
!
policy-map AutoQos-VoIP-Input-Dscp-Policy
    class AutoQos-VoIP-Bearer-Dscp
        set qos-group 46
    class AutoQos-VoIP-Control-Dscp26

```

```

        set qos-group 26
    class AutoQos-VoIP-Control-Dscp24
        set qos-group 24
policy-map AutoQos-VoIP-Input-Cos-Policy
    class AutoQos-VoIP-Bearer-Cos
        set qos-group 46
    class AutoQos-VoIP-Control-Cos
        set qos-group 24
policy-map AutoQos-VoIP-Output-Policy
    class AutoQos-VoIP-Bearer-QosGroup
        set dscp ef
        set cos 5
        priority
        police cir percent 33
    class AutoQos-VoIP-Control-QosGroup26
        set dscp af31
        set cos 3
        bandwidth remaining percent 5
    class AutoQos-VoIP-Control-QosGroup24
        set dscp cs3
        set cos 3
        bandwidth remaining percent 5
    class class-default
        dbl
!
!
!
interface Port-channel1
    switchport
    switchport trunk allowed vlan 1,8,12
    switchport mode trunk
    no ethernet cfm enable
!
interface Port-channel2
    switchport
    switchport trunk allowed vlan 1,8,12
    switchport mode trunk
    no ethernet cfm enable
!
interface Port-channel3
    switchport
    switchport trunk allowed vlan 1,8,12
    switchport mode trunk
    no ethernet cfm enable
!
interface Port-channel4
    switchport
    switchport trunk allowed vlan 1,8,12

```



```

    switchport mode trunk
!
interface Port-channel5
    switchport
    switchport trunk allowed vlan 1,28-30
    switchport mode trunk
    no ethernet cfm enable
!
interface Port-channel6
    switchport
    switchport trunk allowed vlan 1,28-30
    switchport mode trunk
!
interface Port-channel8
    switchport
    switchport mode trunk
!
interface Port-channel11
    switchport
    switchport trunk allowed vlan 10,14,16,31
    switchport mode trunk
!
interface Port-channel12
    switchport
    switchport trunk allowed vlan 31
    switchport mode trunk
    no ethernet cfm enable
!
interface GigabitEthernet2/1
    switchport trunk allowed vlan 1,8,12
    switchport mode trunk
    channel-group 1 mode on
    spanning-tree link-type point-to-point
!
interface GigabitEthernet2/2
    switchport trunk allowed vlan 1,8,12
    switchport mode trunk
    channel-group 2 mode on
    spanning-tree link-type point-to-point
!
interface GigabitEthernet2/3
    switchport trunk allowed vlan 1,8,12
    switchport mode trunk
    channel-group 3 mode on
    spanning-tree link-type point-to-point
!
interface GigabitEthernet2/4
    switchport trunk allowed vlan 1,8,12

```

```

    switchport mode trunk
    channel-group 4 mode on
    spanning-tree link-type point-to-point
!
interface GigabitEthernet2/5
    switchport trunk allowed vlan 1,28-30
    switchport mode trunk
    channel-group 5 mode on
    spanning-tree link-type point-to-point
!
interface GigabitEthernet2/6
    switchport mode trunk
    channel-group 8 mode on
!
interface GigabitEthernet2/7
    switchport mode access
!
interface GigabitEthernet2/8
!
interface GigabitEthernet2/9
    switchport mode access
!
interface GigabitEthernet2/10
    switchport trunk allowed vlan 16,31
    switchport mode trunk
    spanning-tree link-type point-to-point
    no ethernet cfm enable
!
interface GigabitEthernet2/11
    switchport trunk allowed vlan 10,14,16,31
    switchport mode trunk
    channel-group 11 mode on
    spanning-tree link-type point-to-point
!
interface GigabitEthernet2/12
    switchport trunk allowed vlan 31
    switchport mode trunk
    channel-group 12 mode on
    spanning-tree link-type point-to-point
!
interface GigabitEthernet2/13
    switchport trunk allowed vlan 1,8,12
    switchport mode trunk
    channel-group 1 mode on
    spanning-tree link-type point-to-point
!
interface GigabitEthernet2/14
    switchport trunk allowed vlan 1,8,12

```

```

switchport mode trunk
channel-group 2 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet2/15
switchport trunk allowed vlan 1,8,12
switchport mode trunk
channel-group 3 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet2/16
switchport trunk allowed vlan 1,28-30
switchport mode trunk
channel-group 5 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet2/17
!
interface GigabitEthernet2/18
switchport mode trunk
channel-group 8 mode on
!
interface GigabitEthernet2/19
switchport access vlan 31
switchport mode access
!
interface GigabitEthernet2/20
!
interface GigabitEthernet2/21
switchport access vlan 31
switchport mode access
!
interface GigabitEthernet2/22
switchport trunk allowed vlan 16,31
switchport mode trunk
spanning-tree link-type point-to-point
no ethernet cfm enable
!
interface GigabitEthernet2/23
switchport trunk allowed vlan 10,14,16,31
switchport mode trunk
channel-group 11 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet2/24
switchport trunk allowed vlan 31
switchport mode trunk
channel-group 12 mode on

```

```

spanning-tree link-type point-to-point
!
interface TenGigabitEthernet3/1
!
interface TenGigabitEthernet3/2
!
interface GigabitEthernet3/3
!
interface GigabitEthernet3/4
!
interface GigabitEthernet3/5
!
interface GigabitEthernet3/6
!
interface TenGigabitEthernet4/1
!
interface TenGigabitEthernet4/2
!
interface GigabitEthernet4/3
!
interface GigabitEthernet4/4
!
interface GigabitEthernet4/5
!
interface GigabitEthernet4/6
!
interface Vlan1
ip address 192.168.1.1 255.255.255.0
!
interface Vlan8
ip address 192.168.8.1 255.255.255.0
ip pim sparse-mode
!
interface Vlan10
ip address 192.168.10.1 255.255.255.0
!
interface Vlan12
ip address 192.168.12.1 255.255.255.0
ip pim sparse-mode
!
interface Vlan14
ip address 192.168.14.1 255.255.255.0
!
interface Vlan16 description Wireless Guest *** SET NO IP ADDRESS ****
no ip address
!
interface Vlan28
ip address 192.168.28.1 255.255.255.0

```

```

    ip pim sparse-mode
!
interface Vlan29
    ip address 192.168.29.1 255.255.255.0
    ip pim sparse-mode
!
interface Vlan31
    ip address 192.168.31.1 255.255.255.0
    ip pim sparse-mode
!
!
router eigrp 1
    passive-interface default
    no passive-interface Vlan31
    no passive-interface Port-channel6
    no passive-interface Port-channel8
    no passive-interface Port-channel11
    no passive-interface Port-channel12
    network 192.168.0.0 0.0.255.255
!
ip default-gateway 192.168.1.1
ip route 192.168.17.0 255.255.255.0 192.168.31.192
ip http server
ip http secure-server
!
!
snmp-server community ***** RO
snmp-server community ***** RW
!
line con 0
    stopbits 1
line vty 0 4
    login local
    length 0
    transport input all
!
!
monitor session 1 source vlan 1 - 31
monitor session 1 destination interface Gi2/9
ntp clock-period 17181286
ntp server 192.168.31.2
end

```

Notes

Server Room

Server Room, Cisco Catalyst 3750 Switch

```
version 12.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname 3750SF1
enable secret cisco123
enable password cisco
!
username cisco password cisco123
no aaa new-model
clock timezone UTC -8
clock summer-time UTC recurring
switch 1 provision ws-c3750g-24ps
switch 2 provision ws-c3750g-24ps
system mtu routing 1500
vtp mode transparent
udld aggressive
ip subnet-zero
ip domain-name cisco.com
!
cluster enable 3750SF 0
!
mls qos map cos-dscp 0 8 16 24 32 46 48 56
mls qos srr-queue input bandwidth 90 10
mls qos srr-queue input threshold 1 8 16
mls qos srr-queue input threshold 2 34 66
mls qos srr-queue input buffers 67 33
mls qos srr-queue input cos-map queue 1 threshold 2 1
mls qos srr-queue input cos-map queue 1 threshold 3 0
mls qos srr-queue input cos-map queue 2 threshold 1 2
mls qos srr-queue input cos-map queue 2 threshold 2 4 6 7
mls qos srr-queue input cos-map queue 2 threshold 3 3 5
mls qos srr-queue input dscp-map queue 1 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue input dscp-map queue 1 threshold 3 0 1 2 3 4 5 6 7
mls qos srr-queue input dscp-map queue 1 threshold 3 32
mls qos srr-queue input dscp-map queue 2 threshold 1 16 17 18 19 20 21 22 23
mls qos srr-queue input dscp-map queue 2 threshold 2 33 34 35 36 37 38 39 48
mls qos srr-queue input dscp-map queue 2 threshold 2 49 50 51 52 53 54 55 56
```

```
mls qos srr-queue input dscp-map queue 2 threshold 2 57 58 59 60 61 62 63
mls qos srr-queue input dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue input dscp-map queue 2 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output cos-map queue 1 threshold 3 5
mls qos srr-queue output cos-map queue 2 threshold 3 3 6 7
mls qos srr-queue output cos-map queue 3 threshold 3 2 4
mls qos srr-queue output cos-map queue 4 threshold 2 1
mls qos srr-queue output cos-map queue 4 threshold 3 0
mls qos srr-queue output dscp-map queue 1 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue output dscp-map queue 2 threshold 3 48 49 50 51 52 53 54 55
mls qos srr-queue output dscp-map queue 2 threshold 3 56 57 58 59 60 61 62 63
mls qos srr-queue output dscp-map queue 3 threshold 3 16 17 18 19 20 21 22 23
mls qos srr-queue output dscp-map queue 3 threshold 3 32 33 34 35 36 37 38 39
mls qos srr-queue output dscp-map queue 4 threshold 1 8
mls qos srr-queue output dscp-map queue 4 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue output dscp-map queue 4 threshold 3 0 1 2 3 4 5 6 7
mls qos queue-set output 1 threshold 1 138 138 92 138
mls qos queue-set output 1 threshold 2 138 138 92 400
mls qos queue-set output 1 threshold 3 36 77 100 318
mls qos queue-set output 1 threshold 4 20 50 67 400
mls qos queue-set output 2 threshold 1 149 149 100 149
mls qos queue-set output 2 threshold 2 118 118 100 235
mls qos queue-set output 2 threshold 3 41 68 100 272
mls qos queue-set output 2 threshold 4 42 72 100 242
mls qos queue-set output 1 buffers 10 10 26 54
mls qos queue-set output 2 buffers 16 6 17 61
mls qos
!
spanning-tree mode pvst
spanning-tree extend system-id
!
vlan internal allocation policy ascending
!
vlan 28,29
!
ip ssh version 2
!
!
interface Port-channel1
    switchport trunk encapsulation dot1q
    switchport trunk allowed vlan 1,28,29
    switchport mode trunk
!
interface GigabitEthernet1/0/1
    switchport access vlan 28
    switchport mode access
    srr-queue bandwidth share 10 10 60 20
```

```

queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree portfast
spanning-tree bpduguard enable
!
interface GigabitEthernet1/0/2
switchport access vlan 28
switchport mode access
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree portfast
spanning-tree bpduguard enable
!
!*****
Interface GigabitEthernet 1/0/3 to 1/0/12 are all configured the same as
1/0/1 and 1/0/2 and have been removed for conciseness
!*****
!
interface GigabitEthernet1/0/13
switchport access vlan 29
switchport mode access
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree portfast
spanning-tree bpduguard disable
!
interface GigabitEthernet1/0/14
switchport access vlan 29
switchport mode access
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree portfast
spanning-tree bpduguard enable
!
!*****
Interface GigabitEthernet 1/0/15 to 1/0/24 are all configured the same as
1/0/13 and 1/0/14 and have been removed for conciseness
!*****

```

```

!
interface GigabitEthernet1/0/25
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,28,29
switchport mode trunk
mls qos trust dscp
channel-group 1 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet1/0/26
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,28,29
switchport mode trunk
mls qos trust dscp
channel-group 1 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet1/0/27
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,28,29
switchport mode trunk
mls qos trust dscp
channel-group 1 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet1/0/28
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,28,29
switchport mode trunk
mls qos trust dscp
channel-group 1 mode on
spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/1
switchport access vlan 28
switchport mode access
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree portfast
spanning-tree bpduguard enable
!
interface GigabitEthernet2/0/2
switchport access vlan 28
switchport mode access
srr-queue bandwidth share 10 10 60 20
queue-set 2

```

```

priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree portfast
spanning-tree bpduguard enable
!
!*****
Interface GigabitEthernet 2/0/3 to 2/0/12 are all configured the same as
2/0/1 and 2/0/2 and have been removed for conciseness
!*****
!
interface GigabitEthernet2/0/13
    switchport access vlan 29
    switchport mode access
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust dscp
    auto qos voip trust
    spanning-tree portfast
    spanning-tree bpduguard enable
!
interface GigabitEthernet2/0/14
    switchport access vlan 29
    switchport mode access
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust dscp
    auto qos voip trust
    spanning-tree portfast
    spanning-tree bpduguard enable
!
!*****
Interface GigabitEthernet 2/0/15 to 2/0/24 are all configured the same as
2/0/13 and 2/0/14 and have been removed for conciseness
!*****
!
interface GigabitEthernet2/0/25
    switchport trunk encapsulation dot1q
    switchport trunk allowed vlan 1,28,29
    switchport mode trunk
    mls qos trust dscp
    channel-group 1 mode on
    spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/26
    switchport trunk encapsulation dot1q

```

```

    switchport trunk allowed vlan 1,28,29
    switchport mode trunk
    mls qos trust dscp
    channel-group 1 mode on
    spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/27
    switchport trunk encapsulation dot1q
    switchport trunk allowed vlan 1,28,29
    switchport mode trunk
    mls qos trust dscp
    channel-group 1 mode on
    spanning-tree link-type point-to-point
!
interface GigabitEthernet2/0/28
    switchport trunk encapsulation dot1q
    switchport trunk allowed vlan 1,28,29
    switchport mode trunk
    mls qos trust dscp
    channel-group 1 mode on
    spanning-tree link-type point-to-point
!
interface Vlan1
    ip address 192.168.1.8 255.255.255.0
!
ip default-gateway 192.168.1.1
ip classless
ip http server
ip http secure-server
!
!
snmp-server community cisco RO
snmp-server community cisco123 RW
!
control-plane
!
!
line con 0
line vty 0 4
    login local
    transport input all
line vty 5 15
    login local
    transport input all
!
ntp clock-period 36028040
ntp server 192.168.31.2
end

```


Campus Access

Campus Access, Cisco Catalyst 3750G Switch

```
version 12.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname 3750A1-1
!
enable secret cisco123
enable password cisco
!
username cisco password cisco123
no aaa new-model
clock timezone UTC -8
clock summer-time UTC recurring
switch 1 provision ws-c3750g-24ps
switch 2 provision ws-c3750g-24ps
system mtu routing 1500
vtp mode transparent
ip subnet-zero
ip domain-name cisco.com
!
ip dhcp snooping vlan 1-12
no ip dhcp snooping information option
ip dhcp snooping
ip arp inspection vlan 1-12
cluster enable 3750CA-1 0
!
mls qos map policed-dscp 24 26 46 to 0
mls qos map cos-dscp 0 8 16 24 32 46 48 56
mls qos srr-queue input bandwidth 90 10
mls qos srr-queue input threshold 1 8 16
mls qos srr-queue input threshold 2 34 66
mls qos srr-queue input buffers 67 33
mls qos srr-queue input cos-map queue 1 threshold 2 1
mls qos srr-queue input cos-map queue 1 threshold 3 0
mls qos srr-queue input cos-map queue 2 threshold 1 2
mls qos srr-queue input cos-map queue 2 threshold 2 4 6 7
mls qos srr-queue input cos-map queue 2 threshold 3 3 5
mls qos srr-queue input dscp-map queue 1 threshold 2 9 10 11 12 13 14 15
```

```
mls qos srr-queue input dscp-map queue 1 threshold 3 0 1 2 3 4 5 6 7
mls qos srr-queue input dscp-map queue 1 threshold 3 32
mls qos srr-queue input dscp-map queue 2 threshold 1 16 17 18 19 20 21 22 23
mls qos srr-queue input dscp-map queue 2 threshold 2 33 34 35 36 37 38 39 48
mls qos srr-queue input dscp-map queue 2 threshold 2 49 50 51 52 53 54 55 56
mls qos srr-queue input dscp-map queue 2 threshold 2 57 58 59 60 61 62 63
mls qos srr-queue input dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue input dscp-map queue 2 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output cos-map queue 1 threshold 3 5
mls qos srr-queue output cos-map queue 2 threshold 3 3 6 7
mls qos srr-queue output cos-map queue 3 threshold 3 2 4
mls qos srr-queue output cos-map queue 4 threshold 2 1
mls qos srr-queue output cos-map queue 4 threshold 3 0
mls qos srr-queue output dscp-map queue 1 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue output dscp-map queue 2 threshold 3 48 49 50 51 52 53 54 55
mls qos srr-queue output dscp-map queue 2 threshold 3 56 57 58 59 60 61 62 63
mls qos srr-queue output dscp-map queue 3 threshold 3 16 17 18 19 20 21 22 23
mls qos srr-queue output dscp-map queue 3 threshold 3 32 33 34 35 36 37 38 39
mls qos srr-queue output dscp-map queue 4 threshold 1 8
mls qos srr-queue output dscp-map queue 4 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue output dscp-map queue 4 threshold 3 0 1 2 3 4 5 6 7
mls qos queue-set output 1 threshold 1 138 138 92 138
mls qos queue-set output 1 threshold 2 138 138 92 400
mls qos queue-set output 1 threshold 3 36 77 100 318
mls qos queue-set output 1 threshold 4 20 50 67 400
mls qos queue-set output 2 threshold 1 149 149 100 149
mls qos queue-set output 2 threshold 2 118 118 100 235
mls qos queue-set output 2 threshold 3 41 68 100 272
mls qos queue-set output 2 threshold 4 42 72 100 242
mls qos queue-set output 1 buffers 10 10 26 54
mls qos queue-set output 2 buffers 16 6 17 61
mls qos
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
!
vlan internal allocation policy ascending
!
vlan 8,12
!
ip ssh version 2
!
class-map match-all AutoQoS-VoIP-RTP-Trust
match ip dscp ef
class-map match-all AutoQoS-VoIP-Control-Trust
match ip dscp cs3 af31
!
```

```

!
policy-map AutoQoS-Police-CiscoPhone
  class AutoQoS-VoIP-RTP-Trust
    set dscp ef
    police 320000 8000 exceed-action policed-dscp-transmit
  class AutoQoS-VoIP-Control-Trust
    set dscp cs3
    police 32000 8000 exceed-action policed-dscp-transmit
!
!
!
interface Port-channel1
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 1,8,12
  switchport mode trunk
  ip arp inspection trust
  ip dhcp snooping trust
!
interface GigabitEthernet1/0/1
  switchport access vlan 8
  switchport mode access
  switchport voice vlan 12
  switchport port-security maximum 11
  switchport port-security
  switchport port-security aging time 2
  switchport port-security violation restrict
  switchport port-security aging type inactivity
  ip arp inspection limit rate 100
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust device cisco-phone
  mls qos trust cos
  auto qos voip cisco-phone
  spanning-tree portfast
  spanning-tree bpduguard enable
  service-policy input AutoQoS-Police-CiscoPhone
  ip verify source
  ip dhcp snooping limit rate 100
!
interface GigabitEthernet1/0/2
  switchport access vlan 8
  switchport mode access
  switchport voice vlan 12
  switchport port-security maximum 11
  switchport port-security
  switchport port-security aging time 2
  switchport port-security violation restrict

```

```

  switchport port-security aging type inactivity
  ip arp inspection limit rate 100
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust device cisco-phone
  mls qos trust cos
  auto qos voip cisco-phone
  spanning-tree portfast
  spanning-tree bpduguard enable
  service-policy input AutoQoS-Police-CiscoPhone
  ip verify source
  ip dhcp snooping limit rate 100
!
!*****
Interface GigabitEthernet 1/0/3 to 1/0/23 are all configured the same as
1/0/1 and 1/0/2 and have been removed for conciseness
!*****
!
interface GigabitEthernet1/0/24
  description Wireless AP Port
  switchport access vlan 8
  switchport mode access
  switchport voice vlan 12
  switchport port-security maximum 11
  switchport port-security
  switchport port-security aging time 2
  switchport port-security violation restrict
  switchport port-security aging type inactivity
  ip arp inspection limit rate 100
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust dscp
  auto qos voip trust
  spanning-tree portfast
  spanning-tree bpduguard enable
  ip verify source
  ip dhcp snooping limit rate 100
!
interface GigabitEthernet1/0/25
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 1,8,12
  switchport mode trunk
  ip arp inspection trust
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out

```

```

mls qos trust dscp
auto qos voip trust
channel-group 1 mode on
spanning-tree link-type point-to-point
ip dhcp snooping trust
!
interface GigabitEthernet1/0/26
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
ip arp inspection trust
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
channel-group 1 mode on
spanning-tree link-type point-to-point
ip dhcp snooping trust
!
interface GigabitEthernet1/0/27
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
ip arp inspection trust
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
channel-group 1 mode on
spanning-tree link-type point-to-point
ip dhcp snooping trust
!
interface GigabitEthernet1/0/28
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 1,8,12
switchport mode trunk
ip arp inspection trust
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
channel-group 1 mode on
spanning-tree link-type point-to-point
ip dhcp snooping trust
!

```

```

interface GigabitEthernet2/0/1
switchport access vlan 8
switchport mode access
switchport voice vlan 12
switchport port-security maximum 11
switchport port-security
switchport port-security aging time 2
switchport port-security violation restrict
switchport port-security aging type inactivity
ip arp inspection limit rate 100
srr-queue bandwidth share 10 10 60 20
srr-queue bandwidth shape 10 0 0 0
queue-set 2
priority-queue out
mls qos trust device cisco-phone
mls qos trust cos
auto qos voip cisco-phone
spanning-tree portfast
spanning-tree bpduguard enable
service-policy input AutoQoS-Police-CiscoPhone
ip verify source
ip dhcp snooping limit rate 100
!
interface GigabitEthernet2/0/2
switchport access vlan 8
switchport mode access
switchport voice vlan 12
switchport port-security maximum 11
switchport port-security
switchport port-security aging time 2
switchport port-security violation restrict
switchport port-security aging type inactivity
ip arp inspection limit rate 100
srr-queue bandwidth share 10 10 60 20
srr-queue bandwidth shape 10 0 0 0
queue-set 2
priority-queue out
mls qos trust device cisco-phone
mls qos trust cos
auto qos voip cisco-phone
spanning-tree portfast
spanning-tree bpduguard enable
service-policy input AutoQoS-Police-CiscoPhone
ip verify source
ip dhcp snooping limit rate 100
!

```

```

!*****
Interface GigabitEthernet 2/0/3 to 2/0/24 are all configured the same as

```

2/0/1 and 2/0/2 and have been removed for conciseness

!*****

!

```
interface GigabitEthernet2/0/25
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 1,8,12
  switchport mode trunk
  ip arp inspection trust
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust dscp
  auto qos voip trust
  channel-group 1 mode on
  spanning-tree link-type point-to-point
  ip dhcp snooping trust
```

!

```
interface GigabitEthernet2/0/26
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 1,8,12
  switchport mode trunk
  ip arp inspection trust
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust dscp
  auto qos voip trust
  channel-group 1 mode on
  spanning-tree link-type point-to-point
  ip dhcp snooping trust
```

!

```
interface GigabitEthernet2/0/27
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 1,8,12
  switchport mode trunk
  ip arp inspection trust
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust dscp
  auto qos voip trust
  channel-group 1 mode on
  spanning-tree link-type point-to-point
  ip dhcp snooping trust
```

!

```
interface GigabitEthernet2/0/28
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 1,8,12
```

```
switchport mode trunk
ip arp inspection trust
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
channel-group 1 mode on
spanning-tree link-type point-to-point
ip dhcp snooping trust
```

!

```
interface Vlan1
  ip address 192.168.1.10 255.255.255.0
  !
ip default-gateway 192.168.1.1
ip classless
ip http server
ip http secure-server
```

!

!

```
snmp-server community cisco RO
snmp-server community cisco123 RW
```

!

```
control-plane
```

!

!

```
line con 0
line vty 0 4
  login local
  transport input all
line vty 5 15
  login local
transport input all
```

!

```
ntp clock-period 36028011
ntp server 192.168.31.2
end
```

Campus Access, Cisco Catalyst 3750X Switch

```
version 12.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname A3750X1
!
enable secret 5 $1$RUYp$HkeaUUXVPKR8jJOHT9Dar0
!
username admin password 7 0007421507545A545C
!
no aaa new-model
clock timezone UTC -8
clock summer-time UTC recurring
switch 1 provision ws-c3750x-48p
switch 2 provision ws-c3750x-48p
system mtu routing 1500
authentication mac-move permit
ip subnet-zero
!
ip dhcp snooping vlan 1-12
no ip dhcp snooping information option
ip dhcp snooping
ip domain-name cisco.local
    ip arp inspection vlan 1-12
vtp mode transparent
!
mls qos map policed-dscp 24 26 46 to 0
mls qos map cos-dscp 0 8 16 24 32 46 48 56
mls qos srr-queue input bandwidth 90 10
mls qos srr-queue input threshold 1 8 16
mls qos srr-queue input threshold 2 34 66
mls qos srr-queue input buffers 67 33
mls qos srr-queue input cos-map queue 1 threshold 2 1
mls qos srr-queue input cos-map queue 1 threshold 3 0
mls qos srr-queue input cos-map queue 2 threshold 1 2
mls qos srr-queue input cos-map queue 2 threshold 2 4 6 7
mls qos srr-queue input cos-map queue 2 threshold 3 3 5
mls qos srr-queue input dscp-map queue 1 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue input dscp-map queue 1 threshold 3 0 1 2 3 4 5 6 7
mls qos srr-queue input dscp-map queue 1 threshold 3 32
mls qos srr-queue input dscp-map queue 2 threshold 1 16 17 18 19 20 21 22 23
mls qos srr-queue input dscp-map queue 2 threshold 2 33 34 35 36 37 38 39 48
mls qos srr-queue input dscp-map queue 2 threshold 2 49 50 51 52 53 54 55 56
mls qos srr-queue input dscp-map queue 2 threshold 2 57 58 59 60 61 62 63
```

```
mls qos srr-queue input dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue input dscp-map queue 2 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output cos-map queue 1 threshold 3 5
mls qos srr-queue output cos-map queue 2 threshold 3 3 6 7
mls qos srr-queue output cos-map queue 3 threshold 3 2 4
mls qos srr-queue output cos-map queue 4 threshold 2 1
mls qos srr-queue output cos-map queue 4 threshold 3 0
mls qos srr-queue output dscp-map queue 1 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue output dscp-map queue 2 threshold 3 48 49 50 51 52 53 54 55
mls qos srr-queue output dscp-map queue 2 threshold 3 56 57 58 59 60 61 62 63
mls qos srr-queue output dscp-map queue 3 threshold 3 16 17 18 19 20 21 22 23
mls qos srr-queue output dscp-map queue 3 threshold 3 32 33 34 35 36 37 38 39
mls qos srr-queue output dscp-map queue 4 threshold 1 8
mls qos srr-queue output dscp-map queue 4 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue output dscp-map queue 4 threshold 3 0 1 2 3 4 5 6 7
mls qos queue-set output 1 threshold 1 138 138 92 138
mls qos queue-set output 1 threshold 2 138 138 92 400
mls qos queue-set output 1 threshold 3 36 77 100 318
mls qos queue-set output 1 threshold 4 20 50 67 400
mls qos queue-set output 2 threshold 1 149 149 100 149
mls qos queue-set output 2 threshold 2 118 118 100 235
mls qos queue-set output 2 threshold 3 41 68 100 272
mls qos queue-set output 2 threshold 4 42 72 100 242
mls qos queue-set output 1 buffers 10 10 26 54
mls qos queue-set output 2 buffers 16 6 17 61
mls qos
!
spanning-tree mode rapid-pvst
spanning-tree etherchannel guard misconfig
spanning-tree extend system-id
!
vlan internal allocation policy ascending
!
vlan 8,12
!
class-map match-all AutoQoS-VoIP-RTP-Trust
    match ip dscp ef
class-map match-all AutoQoS-VoIP-Control-Trust
    match ip dscp cs3 af31
!
policy-map AutoQoS-Police-CiscoPhone
    class AutoQoS-VoIP-RTP-Trust
        set dscp ef
        police 320000 8000 exceed-action policed-dscp-transmit
    class AutoQoS-VoIP-Control-Trust
        set dscp cs3
        police 32000 8000 exceed-action policed-dscp-transmit
```

```

!
interface Port-channel1
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 1,8,12
  switchport mode trunk
  ip arp inspection trust
  ip dhcp snooping trust
!
interface FastEthernet0
  no ip address
  shutdown
!
interface GigabitEthernet1/0/1
  switchport access vlan 8
  switchport mode access
  switchport voice vlan 12
  switchport port-security maximum 11
  switchport port-security
  switchport port-security aging time 2
  switchport port-security violation restrict
  switchport port-security aging type inactivity
  ip arp inspection limit rate 100
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust device cisco-phone
  mls qos trust cos
  auto qos voip cisco-phone
  spanning-tree portfast
  spanning-tree bpduguard enable
  service-policy input AutoQoS-Police-CiscoPhone
  ip verify source
  ip dhcp snooping limit rate 100
!
interface GigabitEthernet1/0/2
  switchport access vlan 8
  switchport mode access
  switchport voice vlan 12
  switchport port-security maximum 11
  switchport port-security
  switchport port-security aging time 2
  switchport port-security violation restrict
  switchport port-security aging type inactivity
  ip arp inspection limit rate 100
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust device cisco-phone

```

```

  mls qos trust cos
  auto qos voip cisco-phone
  spanning-tree portfast
  spanning-tree bpduguard enable
  service-policy input AutoQoS-Police-CiscoPhone
  ip verify source
  ip dhcp snooping limit rate 100
!
!*****
! Interface GigabitEthernet1/0/3 to 1/0/47 are all
! configured the same as 1/0/1 and 1/0/2 and have
! been removed for conciseness
!*****
!
interface GigabitEthernet1/0/48
  description Wireless AP Port
  switchport access vlan 8
  switchport mode access
  switchport voice vlan 12
  switchport port-security maximum 11
  switchport port-security
  switchport port-security aging time 2
  switchport port-security violation restrict
  switchport port-security aging type inactivity
  ip arp inspection limit rate 100
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust dscp
  auto qos voip trust
  spanning-tree portfast
  spanning-tree bpduguard enable
  ip verify source
  ip dhcp snooping limit rate 100
!
interface GigabitEthernet1/1/1
  switchport trunk encapsulation dot1q
  switchport trunk allowed vlan 1,8,12
  switchport mode trunk
  ip arp inspection trust
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust dscp
  auto qos voip trust
  spanning-tree link-type point-to-point
  channel-group 1 mode on
  ip dhcp snooping trust

```

```

!
interface GigabitEthernet1/1/2
!
interface GigabitEthernet1/1/3
!
interface GigabitEthernet1/1/4
!
interface GigabitEthernet2/0/1
    switchport access vlan 8
    switchport mode access
    switchport voice vlan 12
    switchport port-security maximum 11
    switchport port-security
    switchport port-security aging time 2
    switchport port-security violation restrict
    switchport port-security aging type inactivity
    ip arp inspection limit rate 100
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust device cisco-phone
    mls qos trust cos
    auto qos voip cisco-phone
    spanning-tree portfast
    spanning-tree bpduguard enable
    service-policy input AutoQoS-Police-CiscoPhone
    ip verify source
    ip dhcp snooping limit rate 100
!
interface GigabitEthernet2/0/2
    switchport access vlan 8
    switchport mode access
    switchport voice vlan 12
    switchport port-security maximum 11
    switchport port-security
    switchport port-security aging time 2
    switchport port-security violation restrict
    switchport port-security aging type inactivity
    ip arp inspection limit rate 100
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust device cisco-phone
    mls qos trust cos
    auto qos voip cisco-phone
    spanning-tree portfast
    spanning-tree bpduguard enable
    service-policy input AutoQoS-Police-CiscoPhone

```

```

    ip verify source
    ip dhcp snooping limit rate 100
!
!*****
! Interface GigabitEthernet2/0/3 to 2/0/47 are all
! configured the same as 2/0/1 and 2/0/2 and have
! been removed for conciseness
!*****
!
interface GigabitEthernet2/0/48
description Port config for AP
    switchport access vlan 8
    switchport mode access
    switchport voice vlan 12
    switchport port-security maximum 11
    switchport port-security
    switchport port-security aging time 2
    switchport port-security violation restrict
    switchport port-security aging type inactivity
    ip arp inspection limit rate 100
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust dscp
    auto qos voip trust
    spanning-tree portfast
    spanning-tree bpduguard enable
    ip verify source
    ip dhcp snooping limit rate 100
!
interface GigabitEthernet2/1/1
    switchport trunk encapsulation dot1q
    switchport trunk allowed vlan 1,8,12
    switchport mode trunk
    ip arp inspection trust
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust dscp
    auto qos voip trust
    spanning-tree link-type point-to-point
    channel-group 1 mode on
    ip dhcp snooping trust
!
interface GigabitEthernet2/1/2
!
interface GigabitEthernet2/1/3
!

```



```

interface GigabitEthernet2/1/4
!
interface Vlan1
  ip address 192.168.1.10 255.255.255.0
!
ip default-gateway 192.168.1.1
ip classless
ip http server
ip http secure-server
!
ip sla enable reaction-alerts
snmp-server community cisco RO
snmp-server community cisco123 RW
!
line con 0
line vty 0 4
login local
  transport input all
line vty 5 15
  login local
  transport input all
!
ntp clock-period 36026469
ntp server 192.168.31.2
end

```

Campus Access, Cisco Catalyst 2960S Switch

```

version 12.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname A2960S1
!
enable secret 5 $1$RUYp$HkeaUUXVpKR8jJ0HT9Dar0
!
username admin password 7 0007421507545A545C
!
no aaa new-model
clock timezone UTC -8
clock summer-time UTC recurring
switch 1 provision ws-c2960s-24pd-l
switch 2 provision ws-c2960s-24pd-l
switch 3 provision ws-c2960s-24pd-l
authentication mac-move permit
ip subnet-zero
!
ip dhcp snooping vlan 1-12
no ip dhcp snooping information option
ip dhcp snooping
ip domain-name cisco.local
ip arp inspection vlan 1-12
vtp mode transparent
!
mls qos map policed-dscp 24 26 46 to 0
mls qos map cos-dscp 0 8 16 24 32 46 48 56
mls qos srr-queue output cos-map queue 1 threshold 3 5
mls qos srr-queue output cos-map queue 2 threshold 3 3 6 7
mls qos srr-queue output cos-map queue 3 threshold 3 2 4
mls qos srr-queue output cos-map queue 4 threshold 2 1
mls qos srr-queue output cos-map queue 4 threshold 3 0
mls qos srr-queue output dscp-map queue 1 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue output dscp-map queue 2 threshold 3 48 49 50 51 52 53 54 55
mls qos srr-queue output dscp-map queue 2 threshold 3 56 57 58 59 60 61 62 63
mls qos srr-queue output dscp-map queue 3 threshold 3 16 17 18 19 20 21 22 23
mls qos srr-queue output dscp-map queue 3 threshold 3 32 33 34 35 36 37 38 39
mls qos srr-queue output dscp-map queue 4 threshold 1 8
mls qos srr-queue output dscp-map queue 4 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue output dscp-map queue 4 threshold 3 0 1 2 3 4 5 6 7
mls qos queue-set output 1 threshold 1 138 138 92 138
mls qos queue-set output 1 threshold 2 138 138 92 400
mls qos queue-set output 1 threshold 3 36 77 100 318

```

```

mls qos queue-set output 1 threshold 4 20 50 67 400
mls qos queue-set output 2 threshold 1 149 149 100 149
mls qos queue-set output 2 threshold 2 118 118 100 235
mls qos queue-set output 2 threshold 3 41 68 100 272
mls qos queue-set output 2 threshold 4 42 72 100 242
mls qos queue-set output 1 buffers 10 10 26 54
mls qos queue-set output 2 buffers 16 6 17 61
mls qos
!
spanning-tree mode rapid-pvst
spanning-tree etherchannel guard misconfig
spanning-tree extend system-id
!
vlan internal allocation policy ascending
!
vlan 8,12
!
class-map match-all AutoQoS-VoIP-RTP-Trust
  match ip dscp ef
class-map match-all AutoQoS-VoIP-Control-Trust
  match ip dscp cs3 af31
!
policy-map AutoQoS-Police-CiscoPhone
  class AutoQoS-VoIP-RTP-Trust
    set dscp ef
    police 320000 8000 exceed-action policed-dscp-transmit
  class AutoQoS-VoIP-Control-Trust
    set dscp cs3
    police 32000 8000 exceed-action policed-dscp-transmit
!
interface Port-channel1
  switchport trunk allowed vlan 1,8,12
  switchport mode trunk
  ip arp inspection trust
  ip dhcp snooping trust
!
interface FastEthernet0
  no ip address
!
interface GigabitEthernet1/0/1
  switchport access vlan 8
  switchport mode access
  switchport voice vlan 12
  switchport port-security maximum 11
  switchport port-security
  switchport port-security aging time 2
  switchport port-security violation restrict
  switchport port-security aging type inactivity

```

```

ip arp inspection limit rate 100
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust device cisco-phone
mls qos trust cos
auto qos voip cisco-phone
spanning-tree portfast
spanning-tree bpduguard enable
service-policy input AutoQoS-Police-CiscoPhone
ip verify source
ip dhcp snooping limit rate 100
!
interface GigabitEthernet1/0/2
  switchport access vlan 8
  switchport mode access
  switchport voice vlan 12
  switchport port-security maximum 11
  switchport port-security
  switchport port-security aging time 2
  switchport port-security violation restrict
  switchport port-security aging type inactivity
  ip arp inspection limit rate 100
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust device cisco-phone
  mls qos trust cos
  auto qos voip cisco-phone
  spanning-tree portfast
  spanning-tree bpduguard enable
  service-policy input AutoQoS-Police-CiscoPhone
  ip verify source
  ip dhcp snooping limit rate 100
!

```

```

!*****
! Interface GigabitEthernet1/0/3 to 1/0/23 are all
! configured the same as 1/0/1 and 1/0/2 and have
! been removed for conciseness
!*****
!
interface GigabitEthernet1/0/24
  description Wireless AP Port
  switchport access vlan 8
  switchport mode access
  switchport voice vlan 12
  switchport port-security maximum 11
  switchport port-security

```

```

switchport port-security aging time 2
switchport port-security violation restrict
switchport port-security aging type inactivity
ip arp inspection limit rate 100
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree portfast
spanning-tree bpduguard enable
ip verify source
ip dhcp snooping limit rate 100
!
interface GigabitEthernet1/0/25
switchport trunk allowed vlan 1,8,12
switchport mode trunk
ip arp inspection trust
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree link-type point-to-point
channel-group 1 mode on
ip dhcp snooping trust
!
interface GigabitEthernet1/0/26
!
interface GigabitEthernet1/0/27
!
interface GigabitEthernet1/0/28
!
interface GigabitEthernet2/0/1
switchport access vlan 8
switchport mode access
switchport voice vlan 12
switchport port-security maximum 11
switchport port-security
switchport port-security aging time 2
switchport port-security violation restrict
switchport port-security aging type inactivity
ip arp inspection limit rate 100
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust device cisco-phone
mls qos trust cos

```

```

auto qos voip cisco-phone
spanning-tree portfast
spanning-tree bpduguard enable
service-policy input AutoQoS-Police-CiscoPhone
ip verify source
ip dhcp snooping limit rate 100
!
interface GigabitEthernet2/0/2
switchport access vlan 8
switchport mode access
switchport voice vlan 12
switchport port-security maximum 11
switchport port-security
switchport port-security aging time 2
switchport port-security violation restrict
switchport port-security aging type inactivity
ip arp inspection limit rate 100
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust device cisco-phone
mls qos trust cos
auto qos voip cisco-phone
spanning-tree portfast
spanning-tree bpduguard enable
service-policy input AutoQoS-Police-CiscoPhone
ip verify source
ip dhcp snooping limit rate 100
!
!*****
! Interface GigabitEthernet2/0/3 to 2/0/23 are all
! configured the same as 2/0/1 and 2/0/2 and have
! been removed for conciseness
!*****
!
interface GigabitEthernet2/0/24
description Wireless AP Port
switchport access vlan 8
switchport mode access
switchport voice vlan 12
switchport port-security maximum 11
switchport port-security
switchport port-security aging time 2
switchport port-security violation restrict
switchport port-security aging type inactivity
ip arp inspection limit rate 100
srr-queue bandwidth share 10 10 60 20
queue-set 2

```

```

priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree portfast
spanning-tree bpduguard enable
ip verify source
ip dhcp snooping limit rate 100
!
interface GigabitEthernet2/0/25
!
interface GigabitEthernet2/0/26
!
interface GigabitEthernet2/0/27
!
interface GigabitEthernet2/0/28
!
interface GigabitEthernet3/0/1
    switchport access vlan 8
    switchport mode access
    switchport voice vlan 12
    switchport port-security maximum 11
    switchport port-security
    switchport port-security aging time 2
    switchport port-security violation restrict
    switchport port-security aging type inactivity
    ip arp inspection limit rate 100
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust device cisco-phone
    mls qos trust cos
    auto qos voip cisco-phone
    spanning-tree portfast
    spanning-tree bpduguard enable
    service-policy input AutoQoS-Police-CiscoPhone
    ip verify source
    ip dhcp snooping limit rate 100
!
interface GigabitEthernet3/0/2
    switchport access vlan 8
    switchport mode access
    switchport voice vlan 12
    switchport port-security maximum 11
    switchport port-security
    switchport port-security aging time 2
    switchport port-security violation restrict
    switchport port-security aging type inactivity
    ip arp inspection limit rate 100

```

```

srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust device cisco-phone
mls qos trust cos
auto qos voip cisco-phone
spanning-tree portfast
spanning-tree bpduguard enable
service-policy input AutoQoS-Police-CiscoPhone
ip verify source
ip dhcp snooping limit rate 100
!
!*****
! Interface GigabitEthernet3/0/3 to 3/0/23 are all
! configured the same as 3/0/1 and 3/0/2 and have
! been removed for conciseness
!*****
!
interface GigabitEthernet3/0/24
    description Wireless AP Port
    switchport access vlan 8
    switchport mode access
    switchport voice vlan 12
    switchport port-security maximum 11
    switchport port-security
    switchport port-security aging time 2
    switchport port-security violation restrict
    switchport port-security aging type inactivity
    ip arp inspection limit rate 100
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust dscp
    auto qos voip trust
    spanning-tree portfast
    spanning-tree bpduguard enable
    ip verify source
    ip dhcp snooping limit rate 100
!
interface GigabitEthernet3/0/25
    switchport trunk allowed vlan 1,8,12
    switchport mode trunk
    ip arp inspection trust
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust dscp
    auto qos voip trust

```

```
spanning-tree link-type point-to-point
channel-group 1 mode on
ip dhcp snooping trust
!
interface GigabitEthernet3/0/26
!
interface GigabitEthernet3/0/27
!
interface GigabitEthernet3/0/28
!
interface Vlan1
  ip address 192.168.1.12 255.255.255.0
!
ip default-gateway 192.168.1.1
ip http server
ip http secure-server
!
ip sla enable reaction-alerts
snmp-server community cisco RO
snmp-server community cisco123 RW
!
line con 0
line vty 0 4
  login local
  transport input all
line vty 5 15
  login local
  transport input all
!
ntp clock-period 22517920
ntp server 192.168.31.2
end
```

Notes

Wide-Area Network

Headquarters, WAN Router, Cisco ISR 3845

```
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname HQ-ISR3845
!
boot-start-marker
boot-end-marker
!
card type t1 0 0
logging message-counter syslog
enable secret cisco
enable password cisco
!
no aaa new-model
clock timezone UTC -8
clock summer-time UTC recurring
network-clock-participate wic 0
!
ip wccp 61
ip wccp 62
ip cef
!
ip domain name cisco.com
ip name-server 192.168.28.10
ip multicast-routing
no ipv6 cef
!
isdn switch-type primary-ni
!
voice service voip
    fax protocol cisco
    sip
        bind control source-interface Port-channel1.31
        bind media source-interface Port-channel1.31
!
!
voice class codec 1
    codec preference 1 g711ulaw
```

```
    codec preference 2 g711alaw
    codec preference 3 g729r8
    codec preference 4 ilbc
voice-card 0
dsp services dspfarm
!
username ***** password *****
!
controller T1 0/0/0
clock source internal
cablelength short 110
channel-group 0 timeslots 1-24
!
controller T1 0/0/1
cablelength short 110
pri-group timeslots 1-24
!
ip ssh version 2
!
class-map match-all Interactive-Video
match ip dscp af41 af42
class-map match-any Network-Control
match ip dscp cs6
match ip dscp cs2
class-map match-all Critical-Data
match ip dscp af21 af22
class-map match-all Call-Signalling
match ip dscp cs3
class-map match-all Voice
match ip dscp ef
!
policy-map Lan-Edge
class class-default
set cos dscp
policy-map WAN
class Voice
priority percent 7
compress header ip rtp
class Interactive-Video
priority percent 31
class Network-Control
bandwidth percent 5
class Critical-Data
bandwidth percent 25
random-detect dscp-based
class Call-Signalling
bandwidth percent 5
class class-default
```

```

bandwidth percent 25
random-detect
!
interface Loopback0
ip address 192.168.1.12 255.255.255.255
!
interface Port-channel1
no ip address
hold-queue 150 in
!
!
interface Port-channel1.31
encapsulation dot1Q 31
ip address 192.168.31.2 255.255.255.0
ip wccp 61 redirect in
ip pim sparse-mode
service-policy output Lan-Edge
!
interface GigabitEthernet0/0
no ip address
duplex auto
speed auto
media-type rj45
channel-group 1
!
!
interface GigabitEthernet0/0.31
channel-group 1
!
interface GigabitEthernet0/1
no ip address
duplex auto
speed auto
media-type rj45
channel-group 1
!
!
interface GigabitEthernet0/1.31
channel-group 1
!
interface Serial0/0/0:0
ip address 10.0.1.1 255.255.255.252
ip wccp 62 redirect in
ip pim sparse-mode
load-interval 30
max-reserved-bandwidth 100
service-policy output WAN
!

```

```

interface Serial0/0/1:23
no ip address
encapsulation hdlc
isdn switch-type primary-ni
isdn incoming-voice voice
no cdp enable
!
router eigrp 1
network 10.0.1.0 0.0.0.255
network 192.168.0.0 0.0.255.255
no auto-summary
!
ip http server
ip http secure-server
!
ip pim rp-address 192.168.31.1
!
snmp-server community cisco RO
snmp-server community cisco123 RW
!
control-plane
!
voice-port 0/0/1:23
!
dial-peer voice 100 voip
description SIP TRUNK to CUCM1
preference 2
destination-pattern 1408555....
voice-class codec 1
session protocol sipv2
session target ipv4:192.168.28.20
incoming called-number .
!
dial-peer voice 101 voip
description SIP TRUNK to CUCM2
preference 1
destination-pattern 1408555....
voice-class codec 1
session protocol sipv2
session target ipv4:192.168.29.20
incoming called-number .
!
dial-peer voice 911 pots
destination-pattern 911
port 0/0/1:23
forward-digits 3
!
dial-peer voice 9911 pots

```



```

destination-pattern 9911
port 0/0/1:23
forward-digits 3
!
dial-peer voice 7 pots
destination-pattern 9[2-9].....
port 0/0/1:23
forward-digits 7
!
dial-peer voice 11 pots
destination-pattern 91[2-9]..[2-9].....
port 0/0/1:23
forward-digits 11
!
dial-peer voice 9011 pots
destination-pattern 9011T
incoming called-number .
direct-inward-dial
port 0/0/1:23
prefix 011
!
sccp local Port-channel1.31
sccp ccm 192.168.28.20 identifier 1 priority 2 version 7.0
sccp ccm 192.168.29.20 identifier 2 priority 1 version 7.0
sccp
!
sccp ccm group 1
bind interface Port-channel1.31
associate ccm 2 priority 1
associate ccm 1 priority 2
associate profile 1 register hq_conf
switchback method graceful
switchback interval 60
!
dspfarm profile 1 conference
description HQ Conference Bridges
codec g711ulaw
codec g711alaw
codec g729ar8
codec g729abr8
codec g729r8
codec g729br8
codec g722-64
codec ilbc
maximum sessions 4
associate application SCCP
!
line con 0

```

```

line aux 0
line vty 0 4
login local
transport input all
!
scheduler allocate 20000 1000
ntp master
end

```

Headquarters, WAN Router, Cisco ISR 3925

```

3925 Config
!
version 15.0
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname DC2ISR
!
boot-start-marker
boot-end-marker
!
enable password *****
!
no aaa new-model
!
no ipv6 cef
ip source-route
ip cef
!
ip wccp 61
ip wccp 62
!
multilink bundle-name authenticated
!
voice-card 0
!
license udi pid C3900-SPE150/K9 sn *****
license boot module c3900 technology-package securityk9
license boot module c3900 technology-package uck9
license boot module c3900 technology-package datak9
!
archive
log config
hidekeys
username ***** password 0 *****
username ***** privilege 15 password 0 *****

```

```

!
redundancy
!
crypto keyring sba-keys
  pre-shared-key address 0.0.0.0 0.0.0.0 key sba
!
crypto isakmp policy 1
  encr aes
  authentication pre-share
  group 2
crypto isakmp profile sba-profile
  keyring sba-keys
  match identity address 0.0.0.0
  virtual-template 1
!
crypto ipsec transform-set xform esp-aes
!
crypto ipsec profile sba
  set transform-set xform
!
interface Port-channel1
  no ip address
!
  hold-queue 150 in
!
interface Port-channel1.159
  encapsulation dot1Q 159
  ip address 192.168.159.2 255.255.255.0
  ip wccp 62 redirect in
!
interface GigabitEthernet0/0
  no ip address
  duplex auto
  speed auto
  channel-group 1
!
interface GigabitEthernet0/0.159
  channel-group 1
!
interface GigabitEthernet0/1
  no ip address
  duplex auto
  speed auto
  media-type rj45
  channel-group 1
!
interface FastEthernet0/2/0
  ip address 10.0.1.250 255.255.255.252

```

```

  ip wccp 61 redirect in
  duplex auto
  speed auto
!
interface FastEthernet0/2/1
  ip address 10.194.112.79 255.255.255.192
  ip access-group 143 in
  ip access-group 143 out
  ip policy route-map VPN-ROUTE
  shutdown
  duplex auto
  speed auto
!
interface Virtual-Template1 type tunnel
  ip unnumbered Port-channel1.159
  tunnel source Port-channel1.159
  tunnel mode ipsec ipv4
  tunnel protection ipsec profile sba
!
router eigrp 1
  network 10.0.1.0 0.0.0.255
  network 192.168.0.0 0.0.255.255
!
ip forward-protocol nd
!
no ip http server
no ip http secure-server
!
ip route 192.168.0.0 255.255.255.0 10.194.112.80
!
access-list 122 remark *** Default gateway for remote sites ***
access-list 122 permit ip 192.168.80.0 0.0.1.255 any
access-list 122 permit ip 192.168.84.0 0.0.1.255 any
access-list 143 remark *** ACL to select VPN Traffic ***
access-list 143 permit esp any any
access-list 143 permit udp any any eq non500-isakmp
access-list 143 permit udp any any eq isakmp
!
nls resp-timeout 1
cpd cr-id 1
route-map VPN-ROUTE permit 10
  match ip address 143
  set ip next-hop 10.194.112.80
!
control-plane
!
mgcp fax t38 ecm
mgcp behavior g729-variants static-pt

```

```

!
gatekeeper
    shutdown
!
line con 0
    exec-timeout 0 0
line aux 0
line vty 0 4
    login
!
exception data-corruption buffer truncate
scheduler allocate 20000 1000
end

```

Branch, WAN Router, Cisco ISR 2811

```

version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname Branch1_ISR2811
!
boot-start-marker
boot-end-marker
!
card type t1 0 0
logging message-counter syslog
enable secret *****
enable password *****
!
no aaa new-model
network-clock-participate wic 0
network-clock-select 1 T1 0/0/0
!
ip wccp 61
ip wccp 62
!
!
ip cef
ip dhcp excluded-address 192.168.64.1 192.168.64.10
ip dhcp excluded-address 192.168.65.1 192.168.65.10
ip dhcp excluded-address 192.168.66.1 192.168.66.10
ip dhcp excluded-address 192.168.67.1 192.168.67.10
!
ip dhcp pool access
network 192.168.64.0 255.255.255.0
default-router 192.168.64.1

```

```

dns-server 192.168.28.10
domain-name cisco.com
!
ip dhcp pool voice
network 192.168.65.0 255.255.255.0
domain-name cisco.com
dns-server 192.168.28.10
default-router 192.168.65.1
option 150 ip 192.168.28.20 192.168.29.20
!
ip dhcp pool Wireless_Access
network 192.168.69.0 255.255.255.0
domain-name cisco.com
dns-server 192.168.28.10
default-router 192.168.69.1
!
ip dhcp pool Wireless_Voice
network 192.168.70.0 255.255.255.0
domain-name cisco.com
dns-server 192.168.28.10
default-router 192.168.70.1
option 150 ip 192.168.28.20 192.168.29.20
!
!
ip domain name cisco.com
ip name-server 192.168.28.10
ip multicast-routing
no ipv6 cef
!
isdn switch-type primary-ni
!
voice service voip
    fax protocol cisco
    sip
        bind control source-interface FastEther-net0/0.65
        bind media source-interface FastEthernet0/0.65
!
!
voice class codec 1
    codec preference 1 g711ulaw
    codec preference 2 g711alaw
    codec preference 3 g729r8
    codec preference 4 ilbc
voice-card 0
dsp services dspfarm
!
username ***** password *****
application

```

```

global
service alternate Default
!
username ***** password *****
!
controller T1 0/0/0
clock source line primary
cablelength short 110
channel-group 0 timeslots 1-24
!
controller T1 0/0/1
cablelength short 110
pri-group timeslots 1-24
!
ip ssh version 2
!
class-map match-all Interactive-Video
match ip dscp af41 af42
class-map match-any Network-Control
match ip dscp cs6
match ip dscp cs2
class-map match-all Critical-Data
match ip dscp af21 af22
class-map match-all Call-Signalling
match ip dscp cs3
match ip dscp af31
class-map match-all Voice
match ip dscp ef
!
!
policy-map Lan-Edge
class class-default
set cos dscp
policy-map WAN
class Voice
priority percent 10
compress header ip rtp
class Interactive-Video
priority percent 35
class Network-Control
bandwidth percent 5
class Call-Signalling
bandwidth percent 5
class Critical-Data
bandwidth percent 15
random-detect dscp-based
class class-default
bandwidth percent 25

```

```

random-detect
!
interface Loopback0
ip address 192.168.1.65 255.255.255.252
!
interface FastEthernet0/0
no ip address
duplex auto
speed auto
!
interface FastEthernet0/0.64
description Access subnet
encapsulation dot1Q 64
ip address 192.168.64.1 255.255.255.0
ip wccp 61 redirect in
ip pim sparse-mode
ids-service-module monitoring promiscuous access-list 199
service-policy output Lan-Edge
!
interface FastEthernet0/0.65
description Voice Subnet
encapsulation dot1Q 65
ip address 192.168.65.1 255.255.255.0
ip pim sparse-mode
service-policy output Lan-Edge
!
!
interface FastEthernet0/0.69
description Wireless Access
encapsulation dot1Q 69
ip address 192.168.69.1 255.255.255.0
service-policy output Lan-Edge
!
interface FastEthernet0/0.70
description Wireless Voice
encapsulation dot1Q 70
ip address 192.168.70.1 255.255.255.0
service-policy output Lan-Edge
!
interface FastEthernet0/1
no ip address
duplex auto
speed auto
!
interface Serial0/0/0:0
ip address 10.0.1.2 255.255.255.252
ip wccp 62 redirect out
ip pim sparse-mode

```

```

load-interval 30
max-reserved-bandwidth 100
service-policy output WAN
!
interface Serial0/0/1:23
no ip address
encapsulation hdlc
isdn switch-type primary-ni
isdn incoming-voice voice
no cdp enable
!
interface Integrated-Service-Engine1/0
ip address 192.168.68.1 255.255.255.0
service-module ip address 192.168.68.2 255.255.255.0
service-module ip default-gateway 192.168.68.1
!
interface IDS-Sensor0/0
ip unnumbered Loopback0
service-module fail-open
hold-queue 60 out
!
router eigrp 1
network 10.0.1.0 0.0.0.255
network 192.168.0.0 0.0.255.255
no auto-summary
!
ip route 192.168.1.66 255.255.255.255 IDS-Sensor0/0
ip http server
ip http secure-server
!
ip pim rp-address 192.168.31.1
!
access-list 199 permit tcp any any eq 443
access-list 199 deny ip any any
!
snmp-server community cisco RO
snmp-server community cisco123 RW
!
control-plane
!
voice-port 0/0/1:23
!
dial-peer voice 100 voip
description SIP TRUNK to CUCM1
preference 2
destination-pattern 1408555....
voice-class codec 1
session protocol sipv2

```

```

session target ipv4:192.168.28.20
incoming called-number .
!
dial-peer voice 101 voip
description SIP TRUNK to CUCM2
preference 1
destination-pattern 1408555....
voice-class codec 1
session protocol sipv2
session target ipv4:192.168.29.20
incoming called-number .
!
dial-peer voice 911 pots
destination-pattern 911
port 0/0/1:23
forward-digits 3
!
dial-peer voice 9911 pots
destination-pattern 9911
port 0/0/1:23
forward-digits 3
!
dial-peer voice 7 pots
destination-pattern 9[2-9].....
port 0/0/1:23
forward-digits 7
!
dial-peer voice 11 pots
destination-pattern 91[2-9]..[2-9].....
port 0/0/1:23
forward-digits 11
!
dial-peer voice 9011 pots
destination-pattern 9011T
incoming called-number .
direct-inward-dial
port 0/0/1:23
prefix 011
!
!
sccp local FastEthernet0/0.65
sccp ccm 192.168.28.20 identifier 1 priority 2 version 7.0
sccp ccm 192.168.29.20 identifier 2 priority 1 version 7.0
sccp
!
sccp ccm group 1
bind interface FastEthernet0/0.65
associate ccm 2 priority 1

```

```

associate ccm 1 priority 2
associate profile 1 register brl_conf
switchback method graceful
switchback interval 60
! dspfarm profile 1 conference
description Branch 1 Conference Bridges
codec g711ulaw
codec g711alaw
codec g729ar8
codec g729abr8
codec g729r8
codec g729br8
codec g722-64
codec ilbc
maximum sessions 4
associate application SCCP
!
gateway
timer receive-rtp 1200
!
call-manager-fallback
max-conferences 8 gain -6
transfer-system full-consult
ip source-address 192.168.65.1 port 2000
max-ephones 35
max-dn 35
dialplan-pattern 1 1408555.... extension-length 4
!
line con 0
line aux 0
!
line vty 0 4
login local
transport input all
!
scheduler allocate 20000 1000
ntp server 192.168.31.2
end

```

Branch, WAN Router, Cisco ISR 2911

```

!
version 15.0
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname BR2ISR
!
boot-start-marker
boot-end-marker
!
card type t1 0 0
enable password 7 *****
!
no aaa new-model
!
network-clock-participate wic 0
network-clock-select 1 T1 0/0/0
!
no ipv6 cef
ip source-route
ip cef
!
ip multicast-routing
ip dhcp excluded-address 192.168.72.1 192.168.72.10
ip dhcp excluded-address 192.168.73.1 192.168.73.10
ip dhcp excluded-address 192.168.76.1 192.168.76.10
ip dhcp excluded-address 192.168.77.1 192.168.77.10
!
ip dhcp pool wired_data
    network 192.168.72.0 255.255.255.0
    dns-server 192.168.28.10 192.168.152.10
    domain-name cisco.local
    default-router 192.168.72.1
!
ip dhcp pool wired_voice
    network 192.168.73.0 255.255.255.0
    dns-server 192.168.28.10 192.168.152.10
    default-router 192.168.73.1
    domain-name cisco.local
    option 150 ip 192.168.28.20 192.168.29.20
!
ip dhcp pool wireless_data
    network 192.168.76.0 255.255.255.0
    Default-router 192.168.76.1
    domain-name cisco.local

```

```

    dns-server 192.168.28.10 192.168.152.10
!
ip dhcp pool wireless_voice
    network 192.168.77.0 255.255.255.0
    default-router 192.168.77.1
    domain-name cisco.local
    dns-server 192.168.28.10 192.168.152.10
    option 150 ip 192.168.28.20 192.168.29.20
!
!
ip domain name cisco.local
ip name-server 192.168.28.10
ip name-server 192.168.152.10
!
multilink bundle-name authenticated
!
crypto pki trustpoint TP-self-signed-*****
    enrollment selfsigned
    subject-name cn=IOS-Self-Signed-Certificate-*****
    revocation-check none
    rsakeypair TP-self-signed-*****
!
!
crypto pki certificate chain TP-self-signed-*****
    certificate self-signed 01
voice-card 0
!
license udi pid CISCO2911/K9 sn *****
!
!
archive
    log config
    hidekeys
username ***** privilege 15 password 7 *****
!
redundancy
!
!
controller T1 0/0/0
    cablelength long 0db
    channel-group 0 timeslots 1-24
!
!
crypto isakmp policy 1
    encr aes
    authentication pre-share
    group 2
crypto isakmp key sba address 0.0.0.0 0.0.0.0

```

```

!
!
crypto ipsec transform-set xform esp-aes
!
crypto ipsec profile sba
    set transform-set xform
!
interface GigabitEthernet0/0
    no ip address
    shutdown
    duplex auto
    speed auto
!
interface GigabitEthernet0/1
    no ip address
    shutdown
    duplex auto
    speed auto
!
interface GigabitEthernet0/2
    no ip address
    shutdown
    duplex auto
    speed auto
!
interface Serial0/0/0:0
    description Primary Wide Area network
    ip address 10.0.1.6 255.255.255.252
    ip wccp 62 redirect in
    ip pim sparse-mode
    load-interval 30
    shutdown
!
interface GigabitEthernet1/0
    description Uplink to Switch
    ip unnumbered GigabitEthernet1/0.72
    hold-queue 60 out
!
interface GigabitEthernet1/0.72
    description Wired Data Access
    encapsulation dot1Q 72
    ip address 192.168.72.1 255.255.255.0
!
interface GigabitEthernet1/0.73
    description Wired Voice Access
    encapsulation dot1Q 73
    ip address 192.168.73.1 255.255.255.0
!

```

```

interface GigabitEthernet1/0.76
  description Wireless Data Access
  encapsulation dot1Q 76
  ip address 192.168.76.1 255.255.255.0
!
interface GigabitEthernet1/0.77
  description Wireless Voice Access
  encapsulation dot1Q 77
  ip address 192.168.77.1 255.255.255.0
!
router eigrp 1
  network 10.0.1.0 0.0.0.255
  network 192.168.0.0 0.0.255.255
  passive-interface default
  no passive-interface Serial0/0/0:0
!
ip forward-protocol nd
!
ip http server
ip http access-class 23
ip http authentication local
ip http secure-server
ip http timeout-policy idle 60 life 86400 requests 10000
!
ip route 10.194.112.101 255.255.255.255 10.0.2.5
!
snmp-server community ***** RO
snmp-server community ***** RW
!
control-plane
!
mgcp fax t38 ecm
mgcp behavior g729-variants static-pt
!
gatekeeper
  shutdown
!
line con 0
  exec-timeout 0 0
line aux 0
line 67
  no activation-character
  no exec
  transport preferred none
  transport input all
  transport output lat pad telnet rlogin lapb-ta mop udptn v120 ssh
  stopbits 1
  flowcontrol software

```

```

line vty 0 3
  exec-timeout 0 0
  login local
  transport input all
line vty 4
  login
!
exception data-corruption buffer truncate
scheduler allocate 20000 1000
!
end

```


Security

Headquarters, Cisco ASA 5510

```
ASA Version 8.0(4)
!
hostname ASA5510IE
domain-name cisco.local
enable password ***** encrypted
passwd ***** encrypted
names
name 192.168.0.0 Internal
name 192.168.28.10 DNS_Server
name 192.168.30.128 VPN-Pool
!
interface Ethernet0/0
 no nameif
 no security-level
 no ip address
!
interface Ethernet0/0.16
 vlan 16
 nameif guest
 security-level 0
 ip address 192.168.16.254 255.255.255.0 standby 192.168.16.253
!
interface Ethernet0/0.31
 vlan 31
 nameif inside
 security-level 100
 ip address 192.168.31.254 255.255.255.0 standby 192.168.31.253
!
interface Ethernet0/1
 nameif DMZ
 security-level 50
 ip address 192.168.30.65 255.255.255.192 standby 192.168.30.66
!
interface Ethernet0/2
 description LAN/STATE Failover Interface
!
interface Ethernet0/3
 nameif outside
 security-level 0
```

```
 ip address 10.194.112.96 255.255.255.192 standby 10.194.112.97
!
interface Management0/0
 nameif management
 security-level 0
 no ip address
 management-only
!
ftp mode passive
clock timezone PST -8
clock summer-time PDT recurring
dns domain-lookup inside
dns server-group DefaultDNS
 name-server DNS_Server
 domain-name cisco.local
same-security-traffic permit inter-interface
object-group service DM_INLINE_TCP_1 tcp
 port-object eq https
 port-object eq ssh
object-group network DM_INLINE_NETWORK_1
 network-object VPN-Pool 255.255.255.128
 network-object 192.168.17.0 255.255.255.0
 network-object 192.168.18.0 255.255.255.0
 network-object 192.168.19.0 255.255.255.0
 network-object 192.168.20.0 255.255.255.0
access-list inside_access_in extended permit ip any any
access-list outside_access_in extended permit tcp any 10.194.112.0
255.255.255.0
 object-group DM_INLINE_TCP_1
access-list outside_access_in extended permit icmp any any
access-list inside_mpc extended permit ip Internal 255.255.0.0 any
access-list outside_mpc extended permit ip any Internal 255.255.0.0
access-list inside_nat0_outbound extended permit ip Internal 255.255.0.0
object-
group DM_INLINE_NETWORK_1
access-list guest_access_in extended permit udp any 192.168.16.0
255.255.255.0 e
q bootpc
access-list guest_access_in extended deny ip any Internal 255.255.0.0
access-list guest_access_in extended permit ip 192.168.16.0 255.255.255.0
any
access-list RA_SplitTunnelACL standard permit Internal 255.255.0.0
pager lines 24
logging enable
logging asdm informational
mtu guest 1500
mtu inside 1500
mtu DMZ 1500
```

```

mtu outside 1500
mtu management 1500
ip local pool RAPool VPN-Pool-192.168.30.254 mask 255.255.255.128
failover
failover lan unit primary
failover lan interface failover Ethernet0/2
failover polltime unit 1 holdtime 3
failover polltime interface 1 holdtime 5
failover key *****
failover replication http
failover link failover Ethernet0/2
failover interface ip failover 192.168.30.1 255.255.255.252 standby
192.168.30.2
monitor-interface inside
icmp unreachable rate-limit 1 burst-size 1
asdm image disk0:/asdm-613.bin
no asdm history enable
arp timeout 14400
global (outside) 1 interface
nat (guest) 1 192.168.16.0 255.255.255.0
nat (inside) 0 access-list inside_nat0_outbound
nat (inside) 1 Internal 255.255.0.0
access-group guest_access_in in interface guest
access-group outside_access_in in interface outside
!
router eigrp 1
  no auto-summary
  network 192.168.16.0 255.255.255.0
  network 192.168.30.64 255.255.255.192
  network 192.168.31.0 255.255.255.0
  passive-interface guest
  passive-interface DMZ
  passive-interface outside
  passive-interface management
  redistribute static
!
route outside 0.0.0.0 0.0.0.0 10.194.112.65 1
timeout xlate 3:00:00
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00 icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:00 mgcp 0:05:00 mgcp-pat
0:05:00
timeout sip 0:30:00 sip media 0:02:00 sip-invite 0:03:00 sip-disconnect
0:02:00
timeout sip-provisional-media 0:02:00 uauth 0:05:00 absolute
dynamic-access-policy-record DfltAccessPolicy
aaa-server cisco.local protocol nt
aaa-server cisco.local (inside) host DNS_Server
  nt-auth-domain-controller 192.168.28.10

```

```

http server enable
http Internal 255.255.0.0 management
http 0.0.0.0 0.0.0.0 outside
http Internal 255.255.0.0 inside
http redirect outside 80
no snmp-server location
no snmp-server contact
snmp-server enable traps snmp authentication linkup linkdown coldstart
service resetoutside
crypto ipsec transform-set ESP-3DES-SHA esp-3des esp-sha-hmac
crypto ipsec transform-set ESP-AES-128-SHA esp-aes esp-sha-hmac
crypto ipsec transform-set 5505SET esp-3des esp-md5-hmac
crypto ipsec security-association lifetime seconds 28800
crypto ipsec security-association lifetime kilobytes 4608000
crypto dynamic-map 5505DYN-MAP 5 set transform-set 5505SET
crypto dynamic-map 5505DYN-MAP 5 set security-association lifetime seconds
28800
crypto dynamic-map 5505DYN-MAP 5 set security-association lifetime
kilobytes 4608000
crypto dynamic-map 5505DYN-MAP 5 set reverse-route
crypto dynamic-map SYSTEM_DEFAULT_CRYPTOMAP 65535 set pfs group1
crypto dynamic-map SYSTEM_DEFAULT_CRYPTOMAP 65535 set transform-set ESP-
AES-128-SHA ESP-3DES-SHA
crypto dynamic-map SYSTEM_DEFAULT_CRYPTOMAP 65535 set security-
association life time seconds 28800
crypto dynamic-map SYSTEM_DEFAULT_CRYPTOMAP 65535 set security-
association life time kilobytes 4608000
crypto dynamic-map SYSTEM_DEFAULT_CRYPTOMAP 65535 set reverse-route
crypto dynamic-map CAB MAP 10 set security-association lifetime seconds
28800
crypto dynamic-map CAB MAP 10 set security-association lifetime kilobytes
4608000
crypto map 5505MAP 100 ipsec-isakmp dynamic 5505DYN-MAP
crypto map 5505MAP interface outside
crypto map outside_map 10 set security-association lifetime seconds 28800
crypto map outside_map 10 set security-association lifetime kilobytes
4608000
crypto map outside_map 65535 ipsec-isakmp dynamic SYSTEM_DEFAULT_CRYPTOMAP
MAP
crypto isakmp enable outside
crypto isakmp policy 10
  authentication pre-share
  encryption 3des
  hash sha
  group 2
  lifetime 86400
crypto isakmp policy 65535
  authentication pre-share

```

```

    encryption 3des
    hash sha
    group 2
    lifetime 86400
no vpn-addr-assign aaa
no vpn-addr-assign dhcp
telnet Internal 255.255.0.0 inside
telnet timeout 5
ssh Internal 255.255.0.0 inside
ssh timeout 5
ssh version 2
console timeout 0
!
tls-proxy maximum-session 200
!
threat-detection basic-threat
threat-detection statistics access-list
no threat-detection statistics tcp-intercept
ntp server 192.168.31.2 source inside
webvpn
    enable outside
    svc image disk0:/anyconnect-win-2.2.0133-k9.pkg 1
    svc enable
group-policy 5505Group internal
group-policy 5505Group attributes
vpn-tunnel-protocol IPSec svc
    ip-comp enable
    split-tunnel-policy tunnelspecified
    split-tunnel-network-list value RA_SplitTunnelACL
    user-authentication-idle-timeout 480
    nem enable
group-policy DfltGrpPolicy attributes
    dns-server value 192.168.28.10 192.168.152.10
    vpn-tunnel-protocol IPSec l2tp-ipsec svc
    split-tunnel-policy tunnelspecified
    split-tunnel-network-list value RA_SplitTunnelACL
    default-domain value cisco.local
    address-pools value RAPool
username 5505site1 password ***** encrypted
username 5505site1 attributes
    vpn-group-policy 5505Group
username 5505site2 password ***** encrypted
username 5505site2 attributes
    vpn-group-policy 5505Group
username 5505site3 password ***** encrypted
username 5505site3 attributes
    vpn-group-policy 5505Group

```

```

username 5505site4 password ***** encrypted
username 5505site4 attributes
    vpn-group-policy 5505Group
username 5505site5 password ***** encrypted
username 5505site5 attributes
    vpn-group-policy 5505Group
username ***** password ***** encrypted
tunnel-group DefaultRAGroup general-attributes
    address-pool RAPool
tunnel-group DefaultRAGroup ipsec-attributes
    pre-shared-key *
tunnel-group DefaultWEBVPGNGroup general-attributes
    address-pool RAPool
tunnel-group RA5505 type remote-access
tunnel-group RA5505 general-attributes
    default-group-policy 5505Group
tunnel-group RA5505 ipsec-attributes
    pre-shared-key *
!
class-map inspection_default
    match default-inspection-traffic
!
!
policy-map type inspect dns preset_dns_map
    parameters
        message-length maximum 512
policy-map global_policy
    class inspection_default
        inspect dns preset_dns_map
        inspect ftp
        inspect h323 h225
        inspect h323 ras
        inspect rsh
        inspect rtsp
        inspect esmtp
        inspect sqlnet
        inspect skinny
        inspect sunrpc
        inspect xdmcp
        inspect sip
        inspect netbios
        inspect tftp
!
service-policy global_policy global
prompt hostname context
Cryptochecksum:eda5f303c5f41250dd666a361bc65375
: end

```

Headquarters, Cisco ASA 5510 Standby

```
ASA Version 8.0(4)
!
hostname ASA5510IE
domain-name cisco.local
enable password ***** encrypted
passwd ***** encrypted
names
name 192.168.0.0 Internal
name 192.168.28.10 DNS_Server
name 192.168.30.128 VPN-Pool
!
interface Ethernet0/0
  no nameif
  no security-level
  no ip address
!
interface Ethernet0/0.16
  vlan 16
  nameif guest
  security-level 0
  ip address 192.168.16.254 255.255.255.0 standby 192.168.16.253
!
interface Ethernet0/0.31
  vlan 31
  nameif inside
  security-level 100
  ip address 192.168.31.254 255.255.255.0 standby 192.168.31.253
!
interface Ethernet0/1
  nameif DMZ
  security-level 50
  ip address 192.168.30.65 255.255.255.192 standby 192.168.30.66
!
interface Ethernet0/2
  description LAN/STATE Failover Interface
!
interface Ethernet0/3
  nameif outside
  security-level 0
  ip address 10.194.112.96 255.255.255.192 standby 10.194.112.97
!
interface Management0/0
  nameif management
  security-level 0
  no ip address
  management-only
```

```
!
ftp mode passive
clock timezone PST -8
clock summer-time PDT recurring
dns domain-lookup inside
dns server-group DefaultDNS
  name-server DNS_Server
  domain-name cisco.local
same-security-traffic permit inter-interface
object-group service DM_INLINE_TCP_1 tcp
  port-object eq https
  port-object eq ssh
object-group network DM_INLINE_NETWORK_1
  network-object VPN-Pool 255.255.255.128
  network-object 192.168.17.0 255.255.255.0
  network-object 192.168.18.0 255.255.255.0
  network-object 192.168.19.0 255.255.255.0
  network-object 192.168.20.0 255.255.255.0
access-list inside_access_in extended permit ip any any
access-list outside_access_in extended permit tcp any 10.194.112.0
255.255.255.0
  object-group DM_INLINE_TCP_1
access-list outside_access_in extended permit icmp any any
access-list inside_mpc extended permit ip Internal 255.255.0.0 any
access-list outside_mpc extended permit ip any Internal 255.255.0.0
access-list inside_nat0_outbound extended permit ip Internal 255.255.0.0
  object-group DM_INLINE_NETWORK_1
access-list guest_access_in extended permit udp any 192.168.16.0
255.255.255.0 e
q bootpc
access-list guest_access_in extended deny ip any Internal 255.255.0.0
access-list guest_access_in extended permit ip 192.168.16.0 255.255.255.0
any
access-list RA_SplitTunnelACL standard permit Internal 255.255.0.0
pager lines 24
logging enable
logging asdm informational
mtu guest 1500
mtu inside 1500
mtu DMZ 1500
mtu outside 1500
mtu management 1500
ip local pool RAPool VPN-Pool-192.168.30.254 mask 255.255.255.128
failover
failover lan unit secondary
failover lan interface failover Ethernet0/2
failover polltime unit 1 holdtime 3
```

```

failover polltime interface 1 holdtime 5
failover key *****
failover replication http
failover link failover Ethernet0/2
failover interface ip failover 192.168.30.1 255.255.255.252 standby
192.168.30.2
monitor-interface inside
icmp unreachable rate-limit 1 burst-size 1
asdm image disk0:/asdm-613.bin
no asdm history enable
arp timeout 14400
global (outside) 1 interface
nat (guest) 1 192.168.16.0 255.255.255.0
nat (inside) 0 access-list inside_nat0_outbound
nat (inside) 1 Internal 255.255.0.0
access-group guest_access_in in interface guest
access-group outside_access_in in interface outside
!
router eigrp 1
  no auto-summary
  network 192.168.16.0 255.255.255.0
  network 192.168.30.64 255.255.255.192
  network 192.168.31.0 255.255.255.0
  passive-interface guest
  passive-interface DMZ
  passive-interface outside
  passive-interface management
  redistribute static
!
route outside 0.0.0.0 0.0.0.0 10.194.112.65 1
timeout xlate 3:00:00
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00 icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:00 mgcp 0:05:00 mgcp-pat
0:05:00
timeout sip 0:30:00 sip media 0:02:00 sip-invite 0:03:00 sip-disconnect
0:02:00
timeout sip-provisional-media 0:02:00 uauth 0:05:00 absolute
dynamic-access-policy-record DfltAccessPolicy
aaa-server cisco.local protocol nt
aaa-server cisco.local (inside) host DNS_Server
  nt-auth-domain-controller 192.168.28.10
http server enable
http Internal 255.255.0.0 inside
http 0.0.0.0 0.0.0.0 outside
http Internal 255.255.0.0 management
http redirect outside 80
no snmp-server location

```

```

no snmp-server contact
snmp-server enable traps snmp authentication linkup linkdown coldstart
service resetoutside
crypto ipsec transform-set ESP-3DES-SHA esp-3des esp-sha-hmac
crypto ipsec transform-set ESP-AES-128-SHA esp-aes esp-sha-hmac
crypto ipsec transform-set 5505SET esp-3des esp-md5-hmac
crypto ipsec security-association lifetime seconds 28800
crypto ipsec security-association lifetime kilobytes 4608000
crypto dynamic-map 5505DYN-MAP 5 set transform-set 5505SET
crypto dynamic-map 5505DYN-MAP 5 set security-association lifetime seconds
28800
crypto dynamic-map 5505DYN-MAP 5 set security-association lifetime
kilobytes 4608000
crypto dynamic-map 5505DYN-MAP 5 set reverse-route
crypto dynamic-map SYSTEM_DEFAULT_CRYPTOMAP 65535 set pfs group1
crypto dynamic-map SYSTEM_DEFAULT_CRYPTOMAP 65535 set transform-set ESP-
AES-128-SHA ESP-3DES-SHA
crypto dynamic-map SYSTEM_DEFAULT_CRYPTOMAP 65535 set security-
association life time seconds 28800
crypto dynamic-map SYSTEM_DEFAULT_CRYPTOMAP 65535 set security-
association life time kilobytes 4608000
crypto dynamic-map SYSTEM_DEFAULT_CRYPTOMAP 65535 set reverse-route
crypto dynamic-map CAB_MAP 10 set security-association lifetime seconds
28800
crypto dynamic-map CAB_MAP 10 set security-association lifetime kilobytes
4608000
crypto map 5505MAP 100 ipsec-isakmp dynamic 5505DYN-MAP
crypto map 5505MAP interface outside
crypto map outside_map 10 set security-association lifetime seconds 28800
crypto map outside_map 10 set security-association lifetime kilobytes
4608000
crypto map outside_map 65535 ipsec-isakmp dynamic SYSTEM_DEFAULT_CRYPTOMAP
crypto isakmp enable outside
crypto isakmp policy 10
  authentication pre-share
  encryption 3des
  hash sha
  group 2
  lifetime 86400
crypto isakmp policy 65535
  authentication pre-share
  encryption 3des
  hash sha
  group 2
  lifetime 86400
no vpn-addr-assign aaa

```

```

no vpn-addr-assign dhcp
telnet Internal 255.255.0.0 inside
telnet timeout 5
ssh Internal 255.255.0.0 inside
ssh timeout 5
ssh version 2
console timeout 0
!
tls-proxy maximum-session 200
!
threat-detection basic-threat
threat-detection statistics access-list
no threat-detection statistics tcp-intercept
ntp server 192.168.31.2 source inside
webvpn
    enable outside
    svc image disk0:/anyconnect-win-2.2.0133-k9.pkg 1
    svc enable
group-policy 5505Group internal
group-policy 5505Group attributes
    vpn-tunnel-protocol IPSec svc
    ip-comp enable
    split-tunnel-policy tunnelspecified
    split-tunnel-network-list value RA_SplitTunnelACL
    user-authentication-idle-timeout 480
    nem enable
group-policy DfltGrpPolicy attributes
    dns-server value 192.168.28.10 192.168.152.10
    vpn-tunnel-protocol IPSec l2tp-ipsec svc
    split-tunnel-policy tunnelspecified
    split-tunnel-network-list value RA_SplitTunnelACL
    default-domain value cisco.local
    address-pools value RAPool
username 5505site1 password ***** encrypted
username 5505site1 attributes
    vpn-group-policy 5505Group
username 5505site2 password ***** encrypted
username 5505site2 attributes
    vpn-group-policy 5505Group
username 5505site3 password ***** encrypted
username 5505site3 attributes
    vpn-group-policy 5505Group
username 5505site4 password ***** encrypted
username 5505site4 attributes
    vpn-group-policy 5505Group
username 5505site5 password ***** encrypted
username 5505site5 attributes

```

```

    vpn-group-policy 5505Group
username xxxxxxx password ***** encrypted
tunnel-group DefaultRAGroup general-attributes
    address-pool RAPool
tunnel-group DefaultRAGroup ipsec-attributes
    pre-shared-key *
tunnel-group DefaultWEBVPGGroup general-attributes
    address-pool RAPool
tunnel-group RA5505 type remote-access
tunnel-group RA5505 general-attributes
    default-group-policy 5505Group
tunnel-group RA5505 ipsec-attributes
    pre-shared-key *
!
class-map inspection_default
    match default-inspection-traffic
!
!
policy-map type inspect dns preset_dns_map
    parameters
        message-length maximum 512
policy-map global_policy
    class inspection_default
        inspect dns preset_dns_map
        inspect ftp
        inspect h323 h225
        inspect h323 ras
        inspect rsh
        inspect rtsp
        inspect esmtp
        inspect sqlnet
        inspect skinny
        inspect sunrpc
        inspect xdmcp
        inspect sip
        inspect netbios
        inspect tftp
!
service-policy global_policy global
prompt hostname context
Cryptochecksum:d644282d29fcd0e27a82af1e927109d2
: end

```

Branch Access

Branch, Cisco Catalyst 3560G Switch

```
version 12.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname BR1SW1
!
boot-start-marker
boot-end-marker
!
enable secret 5 $1$vvRK$EUzSONkDRQRjFCIQAMGCw1
!
username admin password 7 15115A1F07257A767B
no aaa new-model
clock timezone UTC -8
clock summer-time UTC recurring
system mtu routing 1500
vtp mode transparent
ip subnet-zero
ip domain-name cisco.local
ip name-server 192.168.28.10
ip name-server 192.168.152.10
!
ip dhcp snooping vlan 64-70
no ip dhcp snooping information option
ip dhcp snooping
ip arp inspection vlan 64-70
!
mls qos map policed-dscp 24 26 46 to 0
mls qos map cos-dscp 0 8 16 24 32 46 48 56
mls qos srr-queue input bandwidth 90 10
mls qos srr-queue input threshold 1 8 16
mls qos srr-queue input threshold 2 34 66
mls qos srr-queue input buffers 67 33
mls qos srr-queue input cos-map queue 1 threshold 2 1
mls qos srr-queue input cos-map queue 1 threshold 3 0
mls qos srr-queue input cos-map queue 2 threshold 1 2
mls qos srr-queue input cos-map queue 2 threshold 2 4 6 7
```

```
mls qos srr-queue input cos-map queue 2 threshold 3 3 5
mls qos srr-queue input dscp-map queue 1 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue input dscp-map queue 1 threshold 3 0 1 2 3 4 5 6 7
mls qos srr-queue input dscp-map queue 1 threshold 3 32
mls qos srr-queue input dscp-map queue 2 threshold 1 16 17 18 19 20 21 22 23
mls qos srr-queue input dscp-map queue 2 threshold 2 33 34 35 36 37 38 39 48
mls qos srr-queue input dscp-map queue 2 threshold 2 49 50 51 52 53 54 55 56
mls qos srr-queue input dscp-map queue 2 threshold 2 57 58 59 60 61 62 63
mls qos srr-queue input dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue input dscp-map queue 2 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output cos-map queue 1 threshold 3 5
mls qos srr-queue output cos-map queue 2 threshold 3 3 6 7
mls qos srr-queue output cos-map queue 3 threshold 3 2 4
mls qos srr-queue output cos-map queue 4 threshold 2 1
mls qos srr-queue output cos-map queue 4 threshold 3 0
mls qos srr-queue output dscp-map queue 1 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue output dscp-map queue 2 threshold 3 48 49 50 51 52 53 54 55
mls qos srr-queue output dscp-map queue 2 threshold 3 56 57 58 59 60 61 62 63
mls qos srr-queue output dscp-map queue 3 threshold 3 16 17 18 19 20 21 22 23
mls qos srr-queue output dscp-map queue 3 threshold 3 32 33 34 35 36 37 38 39
mls qos srr-queue output dscp-map queue 4 threshold 1 8
mls qos srr-queue output dscp-map queue 4 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue output dscp-map queue 4 threshold 3 0 1 2 3 4 5 6 7
mls qos queue-set output 1 threshold 1 138 138 92 138
mls qos queue-set output 1 threshold 2 138 138 92 400
mls qos queue-set output 1 threshold 3 36 77 100 318
mls qos queue-set output 1 threshold 4 20 50 67 400
mls qos queue-set output 2 threshold 1 149 149 100 149
mls qos queue-set output 2 threshold 2 118 118 100 235
mls qos queue-set output 2 threshold 3 41 68 100 272
mls qos queue-set output 2 threshold 4 42 72 100 242
mls qos queue-set output 1 buffers 10 10 26 54
mls qos queue-set output 2 buffers 16 6 17 61
mls qos
!
spanning-tree mode rapid-pvst
spanning-tree etherchannel guard misconfig
spanning-tree extend system-id
!
vlan internal allocation policy ascending
!
vlan 64
    name Wired_Data_Access
!
vlan 65
    name Wired_Voice_Access
```

```

!
vlan 69
    name Wireless_Data_access
!
vlan 70
    name Wireless_Voice_Acces
!
class-map match-all AutoQoS-VoIP-RTP-Trust
    match ip dscp ef
class-map match-all AutoQoS-VoIP-Control-Trust
    match ip dscp cs3  af31
!
policy-map AutoQoS-Police-CiscoPhone
    class AutoQoS-VoIP-RTP-Trust
        set dscp ef
        police 320000 8000 exceed-action policed-dscp-transmit
    class AutoQoS-VoIP-Control-Trust
        set dscp cs3
        police 32000 8000 exceed-action policed-dscp-transmit
!
!
!
interface GigabitEthernet0/1
    switchport access vlan 64
    switchport mode access
    switchport voice vlan 65
    switchport port-security maximum 11
    switchport port-security
    switchport port-security aging time 2
    switchport port-security violation restrict
    switchport port-security aging type inactivity
    ip arp inspection limit rate 100
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust device cisco-phone
    mls qos trust cos
    auto qos voip cisco-phone
    spanning-tree portfast
    spanning-tree bpduguard enable
    service-policy input AutoQoS-Police-CiscoPhone
    ip verify source
    ip dhcp snooping limit rate 100
!
interface GigabitEthernet0/2
    switchport access vlan 64
    switchport mode access

```

```

    switchport voice vlan 65
    switchport port-security maximum 11
    switchport port-security
    switchport port-security aging time 2
    switchport port-security violation restrict
    switchport port-security aging type inactivity
    ip arp inspection limit rate 100
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust device cisco-phone
    mls qos trust cos
    auto qos voip cisco-phone
    spanning-tree portfast
    spanning-tree bpduguard enable
    service-policy input AutoQoS-Police-CiscoPhone
    ip verify source
    ip dhcp snooping limit rate 100
!
!*****
! Interface GigabitEthernet1/0/3 to 1/0/22 are all
! configured the same as 1/0/1 and 1/0/2 and have
! been removed for conciseness
!*****
!
interface GigabitEthernet0/23
    description HREAP Access Point Connection
    switchport trunk encapsulation dot1q
    switchport trunk native vlan 64
    switchport trunk allowed vlan 64-70
    switchport mode trunk
    ip arp inspection trust
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust dscp
    auto qos voip trust
    spanning-tree portfast trunk
    ip dhcp snooping trust
!
interface GigabitEthernet0/24
    description Connection to Local Router
    switchport trunk encapsulation dot1q
    switchport trunk allowed vlan 64-70
    switchport mode trunk
    ip arp inspection trust
    srr-queue bandwidth share 10 10 60 20

```



```

queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree portfast trunk
ip dhcp snooping trust
!
interface GigabitEthernet0/25
!
interface GigabitEthernet0/26
!
interface GigabitEthernet0/27
!
interface GigabitEthernet0/28
!
interface Vlan1
no ip address
shutdown
!
interface Vlan64
description Wired Data Access
ip address 192.168.64.8 255.255.255.0
!
ip default-gateway 192.168.64.1
ip classless
ip http server
ip http authentication local
ip http secure-server
!
snmp-server community cisco RO
snmp-server community cisco123 RW
!
control-plane
!
line con 0
line vty 0 4
login local
length 0
transport input all
line vty 5 15
login
!
ntp clock-period 36028431
ntp server 192.168.31.2
end

```

Branch, Cisco Catalyst 3750X Switch

```

version 12.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname BR4SW1
!
boot-start-marker
boot-end-marker
!
enable secret 5 $1$ffeP$ZeixHCWiDCOYWzEuSSH4D1
!
username admin password 7 130646010803557878
!
!
no aaa new-model
clock timezone UTC -8
clock summer-time UTC recurring
switch 1 provision ws-c3750x-48p
switch 2 provision ws-c3750x-48p
system mtu routing 1500
authentication mac-move permit
ip subnet-zero
!
!
ip dhcp snooping vlan 88-95
no ip dhcp snooping information option
ip dhcp snooping
ip domain-name cisco.local
ip name-server 192.168.28.10
ip name-server 192.168.152.10
ip arp inspection vlan 88-95
vtp mode transparent
!
mls qos map policed-dscp 24 26 46 to 0
mls qos map cos-dscp 0 8 16 24 32 46 48 56
mls qos srr-queue input bandwidth 90 10
mls qos srr-queue input threshold 1 8 16
mls qos srr-queue input threshold 2 34 66
mls qos srr-queue input buffers 67 33
mls qos srr-queue input cos-map queue 1 threshold 2 1
mls qos srr-queue input cos-map queue 1 threshold 3 0
mls qos srr-queue input cos-map queue 2 threshold 1 2
mls qos srr-queue input cos-map queue 2 threshold 2 4 6 7
mls qos srr-queue input cos-map queue 2 threshold 3 3 5

```

```

mls qos srr-queue input dscp-map queue 1 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue input dscp-map queue 1 threshold 3 0 1 2 3 4 5 6 7
mls qos srr-queue input dscp-map queue 1 threshold 3 32
mls qos srr-queue input dscp-map queue 2 threshold 1 16 17 18 19 20 21 22 23
mls qos srr-queue input dscp-map queue 2 threshold 2 33 34 35 36 37 38 39 48
mls qos srr-queue input dscp-map queue 2 threshold 2 49 50 51 52 53 54 55 56
mls qos srr-queue input dscp-map queue 2 threshold 2 57 58 59 60 61 62 63
mls qos srr-queue input dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue input dscp-map queue 2 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output cos-map queue 1 threshold 3 5
mls qos srr-queue output cos-map queue 2 threshold 3 3 6 7
mls qos srr-queue output cos-map queue 3 threshold 3 2 4
mls qos srr-queue output cos-map queue 4 threshold 2 1
mls qos srr-queue output cos-map queue 4 threshold 3 0
mls qos srr-queue output dscp-map queue 1 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue output dscp-map queue 2 threshold 3 48 49 50 51 52 53 54 55
mls qos srr-queue output dscp-map queue 2 threshold 3 56 57 58 59 60 61 62 63
mls qos srr-queue output dscp-map queue 3 threshold 3 16 17 18 19 20 21 22 23
mls qos srr-queue output dscp-map queue 3 threshold 3 32 33 34 35 36 37 38 39
mls qos srr-queue output dscp-map queue 4 threshold 1 8
mls qos srr-queue output dscp-map queue 4 threshold 2 9 10 11 12 13 14 15
mls qos srr-queue output dscp-map queue 4 threshold 3 0 1 2 3 4 5 6 7
mls qos queue-set output 1 threshold 1 138 138 92 138
mls qos queue-set output 1 threshold 2 138 138 92 400
mls qos queue-set output 1 threshold 3 36 77 100 318
mls qos queue-set output 1 threshold 4 20 50 67 400
mls qos queue-set output 2 threshold 1 149 149 100 149
mls qos queue-set output 2 threshold 2 118 118 100 235
mls qos queue-set output 2 threshold 3 41 68 100 272
mls qos queue-set output 2 threshold 4 42 72 100 242
mls qos queue-set output 1 buffers 10 10 26 54
mls qos queue-set output 2 buffers 16 6 17 61
mls qos
!
spanning-tree mode rapid-pvst
spanning-tree etherchannel guard misconfig
spanning-tree extend system-id
!
vlan internal allocation policy ascending
!
vlan 88
    name Wired_Data_Access
!
vlan 89
    name Wired_Voice_Access
!

```

```

vlan 92
    name Wireless_Data_Access
!
vlan 93
    name Wireless_Voice_Access
!
class-map match-all AutoQoS-VoIP-RTP-Trust
    match ip dscp ef
class-map match-all AutoQoS-VoIP-Control-Trust
    match ip dscp cs3 af31
!
policy-map AutoQoS-Police-CiscoPhone
    class AutoQoS-VoIP-RTP-Trust
        set dscp ef
        police 320000 8000 exceed-action policed-dscp-transmit
    class AutoQoS-VoIP-Control-Trust
        set dscp cs3
        police 32000 8000 exceed-action policed-dscp-transmit
!
interface FastEthernet0
    no ip address
    shutdown
!
interface GigabitEthernet1/0/1
    switchport access vlan 88
    switchport mode access
    switchport voice vlan 89
    switchport port-security maximum 11
    switchport port-security
    switchport port-security aging time 2
    switchport port-security violation restrict
    switchport port-security aging type inactivity
    ip arp inspection limit rate 100
    srr-queue bandwidth share 10 10 60 20
    queue-set 2
    priority-queue out
    mls qos trust device cisco-phone
    mls qos trust cos
    auto qos voip cisco-phone
    spanning-tree portfast
    spanning-tree bpduguard enable
    service-policy input AutoQoS-Police-CiscoPhone
    ip verify source
    ip dhcp snooping limit rate 100
!
interface GigabitEthernet1/0/2
    switchport access vlan 88

```

```

switchport mode access
switchport voice vlan 89
switchport port-security maximum 11
switchport port-security
switchport port-security aging time 2
switchport port-security violation restrict
switchport port-security aging type inactivity
ip arp inspection limit rate 100
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust device cisco-phone
mls qos trust cos
auto qos voip cisco-phone
spanning-tree portfast
spanning-tree bpduguard enable
service-policy input AutoQoS-Police-CiscoPhone
ip verify source
ip dhcp snooping limit rate 100
!
!*****
! Interface GigabitEthernet1/0/3 to 1/0/46 are all
! configured the same as 1/0/1 and 1/0/2 and have
! been removed for conciseness
!*****
!
interface GigabitEthernet1/0/47
description HREAP Access Point Connection
switchport trunk encapsulation dot1q
switchport trunk native vlan 88
switchport trunk allowed vlan 88-95
switchport mode trunk
ip arp inspection trust
srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree portfast trunk
ip dhcp snooping trust
!
interface GigabitEthernet1/0/48
description Connection to Local Router
switchport trunk encapsulation dot1q
switchport trunk allowed vlan 88-95
switchport mode trunk
ip arp inspection trust

```

```

srr-queue bandwidth share 10 10 60 20
queue-set 2
priority-queue out
mls qos trust dscp
auto qos voip trust
spanning-tree portfast trunk
ip dhcp snooping trust
!
interface GigabitEthernet1/1/1
!
interface GigabitEthernet1/1/2
!
interface GigabitEthernet1/1/3
!
interface GigabitEthernet1/1/4
!
interface Vlan1
no ip address
shutdown
!
interface Vlan88
description Wired Data Access
ip address 192.168.88.8 255.255.255.0
!
ip default-gateway 192.168.88.1
ip http server
ip http secure-server
!
ip sla enable reaction-alerts
snmp-server community cisco RO
snmp-server community cisco123 RW
!
line con 0
line vty 0 4
login local
length 0
transport input all
line vty 5 15
login
!
ntp clock-period 36026082
ntp server 192.168.31.2
end

```

Branch, Cisco Catalyst 2960S Switch

```
version 12.2
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname BR3SW1
!
boot-start-marker
boot-end-marker
!
enable secret 5 $1$RUYp$HkeaUUXVPKR8jJ0HT9Dar0
!
username admin password 7 0007421507545A545C
!
  no aaa new-model
clock timezone UTC -8
clock summer-time UTC recurring
switch 1 provision ws-c2960s-24pd-l
authentication mac-move permit
ip subnet-zero
!
ip dhcp snooping vlan 80-87
no ip dhcp snooping information option
ip dhcp snooping
ip domain-name cisco.local
ip name-server 192.168.28.10
ip name-server 192.168.152.10
ip arp inspection vlan 80-87
vtp mode transparent
!
mls qos map policed-dscp 24 26 46 to 0
mls qos map cos-dscp 0 8 16 24 32 46 48 56
mls qos srr-queue output cos-map queue 1 threshold 3 5
mls qos srr-queue output cos-map queue 2 threshold 3 3 6 7
mls qos srr-queue output cos-map queue 3 threshold 3 2 4
mls qos srr-queue output cos-map queue 4 threshold 2 1
mls qos srr-queue output cos-map queue 4 threshold 3 0
mls qos srr-queue output dscp-map queue 1 threshold 3 40 41 42 43 44 45 46 47
mls qos srr-queue output dscp-map queue 2 threshold 3 24 25 26 27 28 29 30 31
mls qos srr-queue output dscp-map queue 2 threshold 3 48 49 50 51 52 53 54 55
mls qos srr-queue output dscp-map queue 2 threshold 3 56 57 58 59 60 61 62 63
mls qos srr-queue output dscp-map queue 3 threshold 3 16 17 18 19 20 21 22 23
mls qos srr-queue output dscp-map queue 3 threshold 3 32 33 34 35 36 37 38 39
mls qos srr-queue output dscp-map queue 4 threshold 1 8
mls qos srr-queue output dscp-map queue 4 threshold 2 9 10 11 12 13 14 15
```

```
mls qos srr-queue output dscp-map queue 4 threshold 3 0 1 2 3 4 5 6 7
mls qos queue-set output 1 threshold 1 138 138 92 138
mls qos queue-set output 1 threshold 2 138 138 92 400
mls qos queue-set output 1 threshold 3 36 77 100 318
mls qos queue-set output 1 threshold 4 20 50 67 400
mls qos queue-set output 2 threshold 1 149 149 100 149
mls qos queue-set output 2 threshold 2 118 118 100 235
mls qos queue-set output 2 threshold 3 41 68 100 272
mls qos queue-set output 2 threshold 4 42 72 100 242
mls qos queue-set output 1 buffers 10 10 26 54
mls qos queue-set output 2 buffers 16 6 17 61
mls qos
!
spanning-tree mode rapid-pvst
spanning-tree etherchannel guard misconfig
spanning-tree extend system-id
!
vlan internal allocation policy ascending
!
vlan 80
  name Wired_Data_Access
!
vlan 81
  name Wired_Voice_Access
!
vlan 84
  name Wireless_Data_Access
!
vlan 85
  name Wireless_Voice_Acces
!
class-map match-all AutoQoS-VoIP-RTP-Trust
  match ip dscp ef
class-map match-all AutoQoS-VoIP-Control-Trust
  match ip dscp cs3 af31
!
policy-map AutoQoS-Police-CiscoPhone
  class AutoQoS-VoIP-RTP-Trust
    set dscp ef
    police 32000 8000 exceed-action policed-dscp-transmit
  class AutoQoS-VoIP-Control-Trust
    set dscp cs3
    police 32000 8000 exceed-action policed-dscp-transmit
!
interface FastEthernet0
  no ip address
!
```

```

interface GigabitEthernet1/0/1
  switchport access vlan 80
  switchport mode access
  switchport voice vlan 81
  switchport port-security maximum 11
  switchport port-security
  switchport port-security aging time 2
  switchport port-security violation restrict
  switchport port-security aging type inactivity
  ip arp inspection limit rate 100
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust device cisco-phone
  mls qos trust cos
  auto qos voip cisco-phone
  spanning-tree portfast
  spanning-tree bpduguard enable
  service-policy input AutoQoS-Police-CiscoPhone
  ip verify source
  ip dhcp snooping limit rate 100
!
interface GigabitEthernet1/0/2
  switchport access vlan 80
  switchport mode access
  switchport voice vlan 81
  switchport port-security maximum 11
  switchport port-security
  switchport port-security aging time 2
  switchport port-security violation restrict
  switchport port-security aging type inactivity
  ip arp inspection limit rate 100
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust device cisco-phone
  mls qos trust cos
  auto qos voip cisco-phone
  spanning-tree portfast
  spanning-tree bpduguard enable
  service-policy input AutoQoS-Police-CiscoPhone
  ip verify source
  ip dhcp snooping limit rate 100
!
! *****
! Interface GigabitEthernet1/0/3 to 1/0/22 are all
! configured the same as 1/0/1 and 1/0/2 and have

```

```

! been removed for conciseness
! *****
!
interface GigabitEthernet1/0/23
  description HREAP Access Point Connection
  switchport trunk native vlan 80
  switchport trunk allowed vlan 80-87
  switchport mode trunk
  ip arp inspection trust
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust dscp
  auto qos voip trust
  spanning-tree portfast trunk
  ip dhcp snooping trust
!
interface GigabitEthernet1/0/24
  description CONNECTION TO LOCAL ROUTER
  switchport trunk allowed vlan 80-87
  switchport mode trunk
  ip arp inspection trust
  srr-queue bandwidth share 10 10 60 20
  queue-set 2
  priority-queue out
  mls qos trust dscp
  auto qos voip trust
  spanning-tree portfast trunk
  ip dhcp snooping trust
!
interface GigabitEthernet1/0/25
!
interface GigabitEthernet1/0/26
!
interface GigabitEthernet1/0/27
!
interface GigabitEthernet1/0/28
!
interface Vlan1
  no ip address
!
interface Vlan80
  description Wired Data Access
  ip address 192.168.80.8 255.255.255.0
!
ip default-gateway 192.168.80.1
ip http server

```

```
ip http secure-server
!  
ip sla enable reaction-alerts  
snmp-server community cisco RO  
snmp-server community cisco123 RW  
!  
line con 0  
line vty 0 4  
    login local  
    length 0  
    transport input all  
line vty 5 15  
    login  
!  
ntp clock-period 22518330  
ntp server 192.168.31.2  
end
```

Notes

Appendix A: Midsize Agencies Deployment Product List

Functional Area	Product	Part Numbers	Software Version
100-600 Network Core	Catalyst 3750G Stackable 12 Port SFP and IP Services Image	WS-C3750G-12S-E Catalyst	12.2(50)SE2
500-1000 Network Core	Catalyst 4507RE 7-Slot Chassis, fan, no ps, Red Sup Capable Catalyst 4500 E-Series 24-Port GE (SFP) Catalyst 4500 E-Series Sup 6-E, 2x10GE(X2) with Twin Gig Recommend Dual Supervisors and Dual Power Supplies	WS-C4507R-E Catalyst 4500 E-Series WS-X4624-SFP-E WS-X45-SUP6-E	12.2(50)SG2 Enterprise Services
Headquarter access for PC, phones, APs, other devices	Catalyst 3750G Stackable 24 & 48 Ethernet 10/100/1000 ports with PoE, 4 SFP ports, and IP Base Image Cisco Catalyst 3560G Standalone 24 & 48 Ethernet 10/100/1000 ports with PoE, 4 SFP ports, and IP Base Image Catalyst 3750-X Stackable 24 & 48 Ethernet 10/100/1000 ports with PoE+ and IP Base. Uplink Module is optional.* Cisco Catalyst 3560-X Standalone 24 & 48 Ethernet 10/100/1000 ports with PoE+ and IP Base. Uplink Module is optional.* Cisco Catalyst 2960-S Stackable** 24 & 48 Ethernet 10/100/1000 ports with PoE+, LAN Base, 4 SFP ports. Stacking Module is optional.** *Optional 3560-X or 3750-X 4xSFP Uplink Module **Optional 2960-S FlexStack Stack Module	WS-C3750G-24PS-S WS-C3750G-48PS-S WS-C3560G-24PS-S WS-C3560G-48PS-S WS-C3750X-24P-S WS-C3750X-48PF-S WS-C3560X-24P-S WS-C3560X-48PF-S WS-C2960S-24PS-L WS-C2960S-48FPS-L C3KX-NM-1G C2960S-STACK	12.2(50)SE2 12.2(53)SE2 12.2(53)SE2

Functional Area	Product	Part Numbers	Software Version
Server room switch	Catalyst 3750G Stackable	WS-C3750G-24TS-S1U (1RU)	12.2(50)SE2
	24 & 48 Ethernet 10/100/1000 ports with 4 SFP ports, and IP Base Image	WS-C3750G-48TS-S1	
	Catalyst 3560G Standalone	WS-C3560G-24TS-S	12.2(53)SE2
	24 & 48 Ethernet 10/100/1000 ports with 4 SFP ports, and IP Base Image	WS-C3560G-48TS-S	
	Catalyst 3750-X Stackable	WS-C3750X-24T-S	
	24 & 48 Ethernet 10/100/1000 ports with IP Base. Uplink Module is optional.*	WS-C3750X-48T-S	
	Cisco Catalyst 3560-X Standalone	WS-C3560X-24T-S	
	24 & 48 Ethernet 10/100/1000 ports with IP Base. Uplink Module is optional.*	WS-C3560X-48T-S	
	*Optional 3560-X or 3750-X 4xSFP Uplink Module	C3KX-NM-1G	
Headquarters WAN router	Cisco 3925 or 3845 Integrated Services Router	C3925-VSEC/K9 C3845-VSEC/K9 HWIC-2CE1T1-PRI	15.0.1M
Branch WAN router	Cisco 2911 or 2811 Integrated Services Router	C2911-VSEC/K9 C2811-VSEC-SRST/K9 HWIC-2CE1T1-PRI	15.0.1M
Branch router modules	Wide Area Acceleration Module	NME-WAE-502-K9	4.1.5b
	Intrusion Prevention Module	AIM-IPS-K9	7.0(1)E3

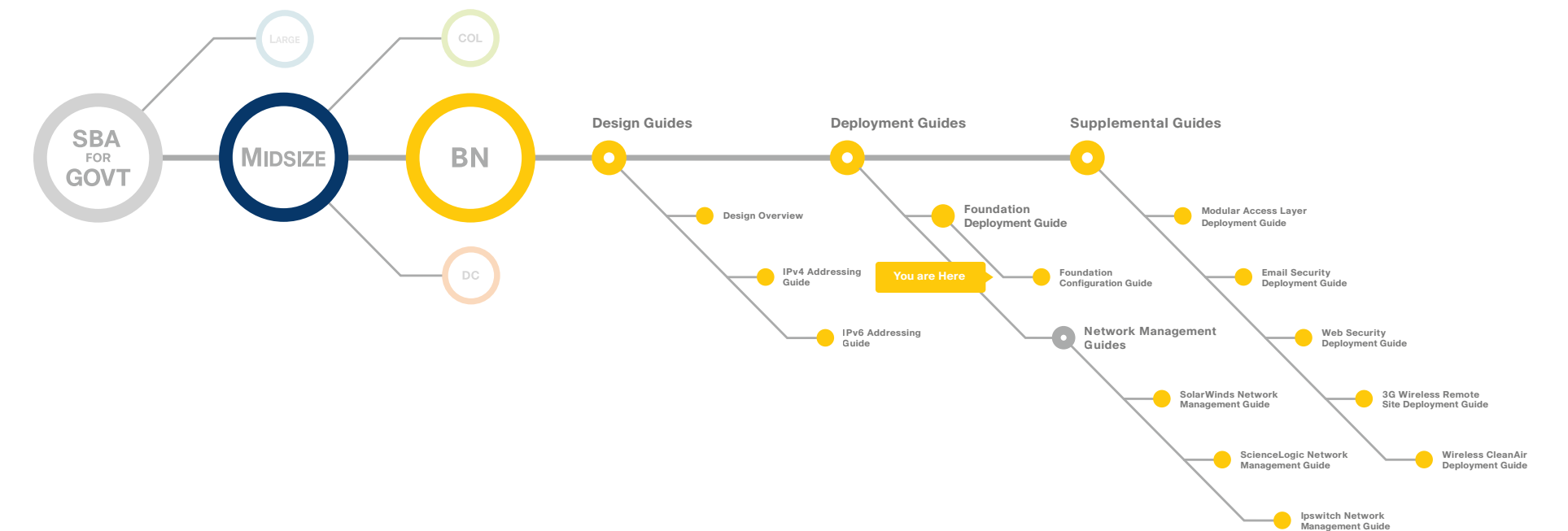
Functional Area	Product	Part Numbers	Software Version
Branch Switch	Catalyst 3750G Stackable 24 &48 Ethernet 10/100/1000 ports with PoE, 4 SFP ports, and IP Base Image	WS-C3750G-24PS-S WS-C3750G-48PS-S	12.2(50)SE2
	Cisco Catalyst 3560G Standalone 24 & 48 Ethernet 10/100/1000 ports with PoE, 4 SFP ports, and IP Base Image	WS-C3560G-24PS-S WS-C3560G-48PS-S	12.2(53)SE2
	Catalyst 3750-X Stackable 24 &48 Ethernet 10/100/1000 ports with PoE+ and IP Base. Uplink Module is optional.*	WS-C3750X-24P-S WS-C3750X-48PF-S	
	Cisco Catalyst 3560-X Standalone 24 & 48 Ethernet 10/100/1000 ports with PoE+ and IP Base. Uplink Module is optional.*	WS-C3560X-24P-S WS-C3560X-48PF-S	
	Cisco Catalyst 2960-S Stackable** 24 & 48 Ethernet 10/100/1000 ports with PoE+,LAN Base, 4 SFP ports. Stacking Module is optional.**	WS-C2960S-24PS-L WS-C2960S-48FPS-L	12.2(53)SE2
	*Optional 3560-X or 3750-X 4xSFP Uplink Module	C3KX-NM-1G	
	**Optional 2960-S FlexStack Stack Module	C2960S-STACK	
Internet Edge Firewall	Adaptive Security Appliance	ASA5510-AIP10-K9	8.0.4.ED
	ASA 5510 with the SSM-10 IPS Module		7.0(1)E3
Headquarters— Intrusion Prevention System	Cisco Intrusion Prevention System 4200 Series	IPS-4240-K9 (300 Mbps) IPS-4255-K9 (600 Mbps) IPS-4260-K9 (2 Gbps)	7.0(1)E3
Application Acceleration	WAVE 574	WAVE-574-K9	4.1.5b
Headquarters CM	WAVE 274	WAVE-274-K9	
Headquarters endpoint			
Wireless Access Points	1140 Fixed with Internal Antennas	AIR-LAP1142N (Country-specific)	
	1250 Ruggedized, External Ant.	AIR-AP1252AG (Country-specific)	
Wireless LAN Controller	WLC 5508	AIR-CT5508-12-K9	7.0.98.0

Functional Area	Product	Part Numbers	Software Version
Unified Communications	Cisco Unified Communications Manager—MCS 7835 CMC Cisco Unity Connections MCS 7825 UCB	MCS7835I3-K9-CMC2 (2 required) MCS7825I4-K9-UCB1	8.0(2c) 8.0(2c)
Phones	CP-7921G Wireless Phone CP-7925G Wireless Phone CP-7931G Multibutton Phone CP-7937G Conference Phone CP-7942G B&W Display Phone CP-7962G B&W Display Phone CP-7945G Color Display Phone CP-7965G Color Display Phone CP-7965G Color Executive Phone IPCOMM7-SW Soft Phone	A wide variety of phone models are available that meet specific needs of the user and the country where they are deployed.	
Teleworker	Adaptive Security Appliance 5505	ASA5505-BUN-K9 ASA 5505 Appliance with SW, 10 Users, 8 ports, 3DES/AES	8.0.4

* Uplink modules on the 3750-X and 3560-X Series switches are now modular. Uplink modules will be needed on 3560-X switches that require uplinks. Uplink modules in a 3750-X multi-switch stack are only needed on 2 switches, the top and bottom switches in the stack. A modular uplink module for the 3560-X and 3750-X Series, which provides 2xSFP for 1Gbps uplinks and 2xSFP+ for future migration to 10Gbps uplinks, is available (P/N= C3kX-NM-10G)

** The optional FlexStack Stack Module for the 2960-S series is not necessary if you require 48 ports or less and will not be stacking the switches.

Appendix B: SBA for Midsize Agencies Document System





SMART BUSINESS ARCHITECTURE



Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV
Amsterdam, The Netherlands

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