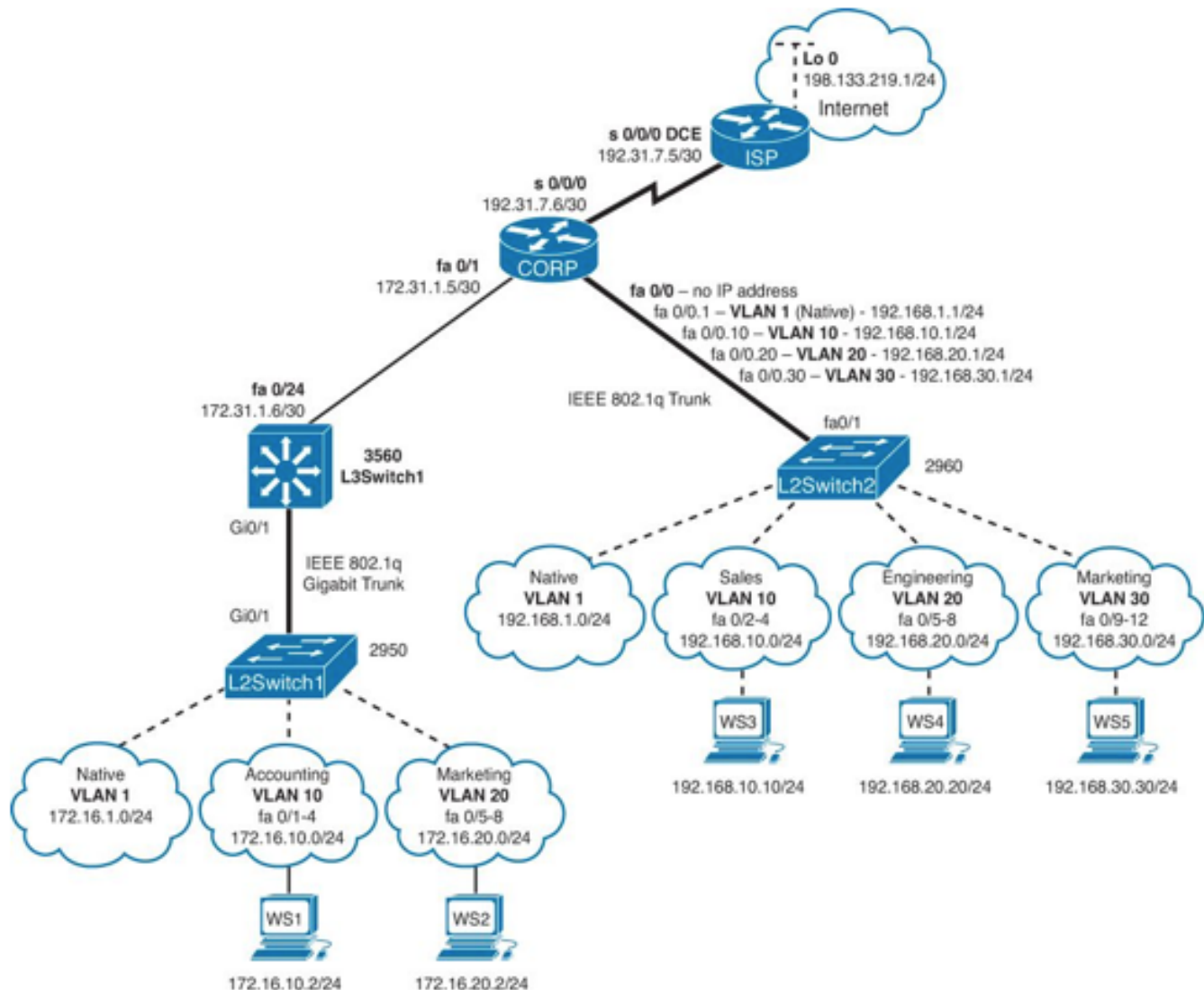


Configuration Example- Inter-VLAN Communication - pp113, Empson



CORP and L2Switch2 have a ROAS configuration
L3Switch1 and L2Switch1 have a VTP Client/Server relationship
ISPRouter demonstrates the need for setting clock rates
Throughout this entire setup is EIGRP routing.

ISP Router

```
Router>enable.
Router>#configure terminal
Router(config)#hostname ISP

ISP(config)#interface loopback 0
ISP(config-if)#description simulated address for remote website
ISP(config-if)#ip address 198.133.219.1 255.255.255.0
ISP(config-if)#interface serial 0/0/0
ISP(config-if)#description WAN link to the Corporate Router
ISP(config-if)#ip address 192.31.7.5 255.255.255.252
ISP(config-if)#clock rate 56000 --DCE cable so don't forget the clock rate
ISP(config-if)#no shutdown
```

```
ISP(config-if)#router eigrp 10 --- initialize EIGRP for AS
ISP(config-router)#network 198.133.219.0
ISP(config-router)#network 192.31.7.0
ISP(config-router)#no auto-summary
ISP#copy running-config startup-config
```

CORP Router

Router>enable.

Router>#configure terminal

Router(config)#hostname CORP

CORP(config)#interface serial 0/0/0

CORP(config-if)#description link to ISP Router

CORP(config-if)#ip address 192.31.7.6 255.255.255.252

CORP(config-if)#no shutdown

CORP(config)#interface fastethernet 0/1

CORP(config-if)#description link to 3560 Switch

CORP(config-if)#ip address 172.31.1.5 255.255.255.252

CORP(config-if)#no shutdown

CORP(config)#interface fastethernet 0/0

CORP(config-if)#description link to L2Switch2

CORP(config-if)#duplex full *---full-duplex to ensure trunking will take effect with L2Switch2.*

CORP(config-if)#no shutdown

CORP(config-if)#interface fastethernet 0/0.1 *---Creates a virtual subinterface*

CORP(config-subif)#description Management VLAN 1 – Native VLAN

CORP(config-subif)#encapsulation dot1q 1 native

CORP(config-subif)#ip address 192.168.1.1 255.255.255.0

CORP(config-subif)#interface fastethernet 0/0.10

CORP(config-subif)#description Sales VLAN 10

CORP(config-subif)#encapsulation dot1q 10

CORP(config-subif)#ip address 192.168.10.1 255.255.255.0

CORP(config-subif)#interface fastethernet 0/0.20

CORP(config-subif)#description Engineering VLAN 20

CORP(config-subif)#encapsulation dot1q 20

CORP(config-subif)#ip address 192.168.20.1 255.255.255.0

CORP(config-subif)#interface fastethernet 0/0.30

CORP(config-subif)#description Marketing VLAN 30

CORP(config-subif)#encapsulation dot1q 30

CORP(config-subif)#ip add 192.168.30.1 255.255.255.0

CORP(config)#router eigrp 10

CORP(config-router)#network 192.168.1.0 *---Advertise our networks*

CORP(config-router)#network 192.168.10.0

CORP(config-router)#network 192.168.20.0

CORP(config-router)#network 192.168.30.0

CORP(config-router)#network 172.31.0.0

CORP(config-router)#network 192.31.7.0

CORP(config-router)#no auto-summary

L2Switch2 (Catalyst 2960)

Switch(config)#hostname L2Switch2

L2Switch2(config)#vlan 10

L2Switch2(config-vlan)#name Sales *---Assign names to the VLANs*

L2Switch2(config-vlan)#exit.

L2Switch2(config)#vlan 20

L2Switch2(config-vlan)#name Engineering

L2Switch2(config-vlan)#vlan 30

L2Switch2(config-vlan)#name Marketing

L2Switch2(config-vlan)#exit

L2Switch2(config)#interface range fastethernet 0/2 - 4 *---Assign access ports to the VLANs*

L2Switch2(config-if-range)#switchport mode access

L2Switch2(config-if-range)#switchport access vlan 10

L2Switch2(config-if-range)#interface range fastethernet 0/5 - 8

L2Switch2(config-if-range)#switchport mode access

L2Switch2(config-if-range)#switchport access vlan 20

L2Switch2(config-if-range)#interface range fastethernet 0/9 - 12

L2Switch2(config-if-range)#switchport mode access

L2Switch2(config-if-range)#switchport access vlan 30

L2Switch2(config-if-range)#exit

L2Switch2(config)#interface fastethernet 0/1

```

L2Switch2(config-if)#description Trunk Link to CORP Router
L2Switch2(config-if)#switchport mode trunk
L2Switch2(config)#interface vlan 1 ---Creates virtual interface for VLAN 1
L2Switch2(config-if)#ip address 192.168.1.2 255.255.255.0
L2Switch2(config-if)#no shutdown
L2Switch2(config-if)#exit
L2Switch2(config)#ip default-gateway 192.168.1.1 ---Assigns the default gateway address.
L2Switch2#copy running-config startup-config

```

L3Switch1 (Catalyst 3560)

```

Switch(config)#hostname L3Switch1
L3Switch1(config)#vtp mode server ---Changes the switch to VTP server mode.
L3Switch1(config)#vtp domain testdomain ---Configures the VTP domain name to testdomain.
L3Switch1(config)#vlan 10
L3Switch1(config-vlan)#name Accounting
L3Switch1(config-vlan)#exit
L3Switch1(config)#vlan 20
L3Switch1(config-vlan)#name Marketing
L3Switch1(config-vlan)#exit

```

```

L3Switch1(config)#interface gigabitethernet 0/1
L3Switch1(config-if)#description Gigabit Trunk to L2Switch1
L3Switch1(config-if)#switchport trunk encapsulation dot1q
L3Switch1(config-if)#switchport mode trunk
L3Switch1(config-if)#exit

```

```

L3Switch1(config)#ip routing ---Enables IP routing on this device.
L3Switch1(config)#interface vlan 1 ---Creates a virtual interface for VLAN 1
L3Switch1(config-if)#ip address 172.16.1.1 255.255.255.0
L3Switch1(config-if)#no shutdown
L3Switch1(config-if)#interface vlan 10
L3Switch1(config-if)#ip address 172.16.10.1 255.255.255.0
L3Switch1(config-if)#no shutdown
L3Switch1(config-if)#interface vlan 20
L3Switch1(config-if)#ip address 172.16.20.1 255.255.255.0
L3Switch1(config-if)#no shutdown
L3Switch1(config-if)#exit

```

```

L3Switch1(config)#interface fastethernet 0/24
L3Switch1(config-if)#description Link to CORP
L3Switch1(config-if)#no switchport ---Creates a Layer 3 port on the switch.
L3Switch1(config-if)#ip address 172.31.1.6 255.255.255.252
L3Switch1(config-if)#exit

```

```

L3Switch1(config)#router eigrp 10
L3Switch1(config-router)#network 172.16.0.0
L3Switch1(config-router)#network 172.31.0.0
L3Switch1(config-router)#no auto-summary

```

L2Switch1 (Catalyst 2960)

```

Switch(config)#hostname L2Switch1
L2Switch1(config)#vtp domain testdomain ---VTP domain name to testdomain.
L2Switch1(config)#vtp mode client ---Changes the switch to VTP client mode.

```

```

L2Switch1(config)#interface range fastethernet 0/1 - 4
L2Switch1(config-if-range)#switchport mode access
L2Switch1(config-if-range)#switchport access vlan 10
L2Switch1(config-if-range)#interface range fastethernet 0/5 - 8
L2Switch1(config-if-range)#switchport mode access
L2Switch1(config-if-range)#switchport access vlan 20
L2Switch1(config-if-range)#exit
L2Switch1(config)#interface gigabitethernet 0/1
L2Switch1(config-if)#switchport mode trunk
L2Switch1(config)#interface vlan 1
L2Switch1(config-if)#ip address 172.16.1.2 255.255.255.0 --VLAN1 on diagram is 172.16.1.0/24 - typo?
L2Switch1(config-if)#no shutdown
L2Switch1(config-if)#exit
L2Switch1(config)#ip default-gateway 172.16.1.1

```