

Document Configurations for Standardization across the Camera

Network

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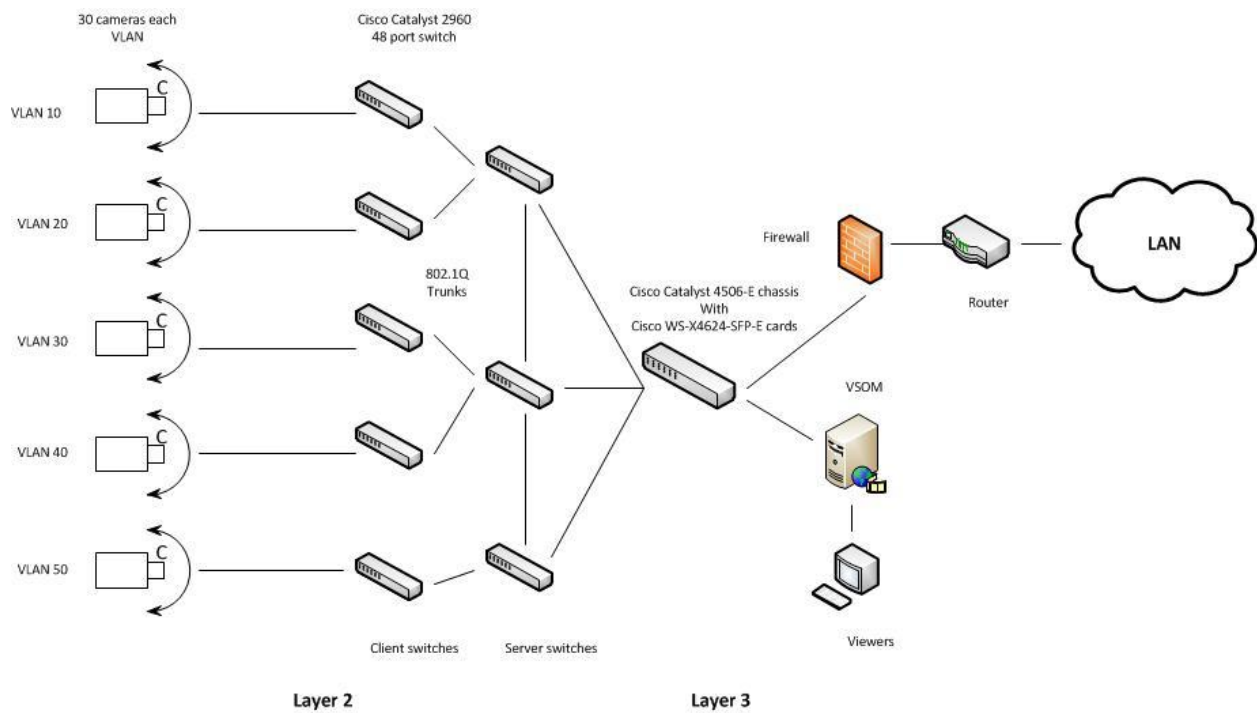
NETW206: Introduction to Switching

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Professor: Hopkins

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To standardize the IP Camera network that will be added to the existing campus data infrastructure, I have added 5 VLANs and changed my original access switches to the Cisco Catalyst 2960-s 48 port switches. By dropping down to layer 2 switches, I hope to add security and possibly save some money. Here is a diagram of what I have designed:



With this configuration:

- 30 IP cameras are connected to a Cisco Catalyst 2960-s 48 port switch in a vlan configuration.
- 5 Cisco Catalyst 2960-s switches are configured in client mode with VLAN Trunking Protocol at the access layer.
- The client switches should be connected to at least 3 Cisco Catalyst 2960-s switches configured in server mode.
- Manual pruning of the vlan's will help with congestion of the 3 vtp trunks.
- All switches will have standardized hostnames and will be pass-protected through vtp commands.
- All out of band management ports will also have pass-protect.
- All management vlan traffic will be in a non-standard vlan, where nothing but management traffic resides.
- SSH encryption transport for vty ports.

When configuring switches for multi-vlan use with vtp, servers are configured first. Then clients. Then check configurations. For setting up these switches in vlan's with vtp the following Cisco IOS commands will be issued:

```
Router#calendar set 18:00:00 Aug 1 2003
```

```
Router#clock set 18:00:00 Aug 1 2003
```

```
Router#configure terminal
```

```
Router(config)#hostname (hostname)
```

```
hostname(config)#clock timezone PST -8
```

```
hostname (config)#clock calendar-valid
```

```
hostname (config)#service timestamps log datetime localtime msec
```

```
hostname (config)#service timestamps debug datetime localtime msec
```

```
(config)#enable secret <password>
```

```
hostname (config)#line vty 0 4
```

```
hostname (config-line)#password <password>
```

```
hostname (config-line)#exit
```

```
hostname (config)#no logging console
```

```
hostname (config)# ^Z
```

```
Sw2960_1> enable
```

```
Sw2960_1# configure terminal
```

```
Sw2960_1(config)# interface vlan 1
```

Sw2960_1 (config-if)#ip address (ip addy) (mask)

Sw2960_1 (config-if)#management

Sw2960_1 (config-if)#exit

Sw2960_1 (config)#ip default-gateway (gateway)

Sw2960_1 (config)# vlan 10

Sw2960_1 (config-vlan)#name (vlan name)

Sw2960_1 (config-vlan)# exit

Sw2960_1 (config)# vlan 20

Sw2960_1 (config)# vlan 30

Sw2960_1 (config)# vlan 40

Sw2960_1 (config)# vlan 50

Sw2960_1 (config)# exit

Sw2960_1 (config)# ^Z

Each interface will have to be configured along with trunk interfaces:

Switch(config)#interface GigabitEthernet 0/1

Switch(config-if)#switchport

Switch(config-if)#switchport access vlan 10

Switch(config-if)#no shutdown

Configure trunks:

Sw6#conf t

Sw6(config)#int (trunk port)

Sw6(config-if)#switchport mode trunk

Sw6(config-if)#switchport encapsulation dot1q

Other examples are VTP enabled:

Sw1#conf t

Sw1(config)#vtp mode client

Sw1(config)#exit

To enable ssh for vty:

```
S2#conf t
S2(config)#ip domain-name hotshop.com
S2(config)#crypto key generate rsa
S2(config)#ip ssh version 2
```

```
s2(config)#line vty 0 15
S2(config-line)#transport input ssh
S2(config-line)#end
```

Configure console lines for OOB:

```
Router(config)#line con [line number]
Router(config-line)#pass [password]
Router(config-line)#login
```

Enabling trunk pruning:

```
Switch1#set vtp pruning enable
```

Removing VLAN X from Trunk X/X:

```
Switch1# clear trunk X/X X
```

Update calendar and set time zone:

```
Router(config)# ntp update-calendar
Router #clock timezone zone hours-offset [minutes-offset]
```

or

```
Router #no clock timezone
```

to clear.

After configured, vlans and vtp should be checked using show vlan, show interfaces vlan X, show interfaces trunk, show vtp status and ping the various default-gateways to make sure data-flow is happening correctly.

References:

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