Configuring VLANs

Switching has become the standard for most company internal network infrastructure as each port maintains its own collision domain, and with the advent of VLANs further allow the engineer to segment the network into multiple, smaller broadcast domains. As a Cisco engineer, as well as in the Cisco CCNA exam, you will need to know how to configure VLANs on Cisco switches as well as verify the operation.

Standard VLANs:

Standard VLANs are VLANs within the range of 1 to 1005. They are mainly used to segment a lager flat network into multiple, smaller broadcast domains.

Scenario:

In this CCNA Lab you will use Cisco's Packet Trace to configure to configure a Cisco Catalyst 2950 with three new VLANS. You will then use the available Cisco IOS show commands to verify the configuration.

Objective:

After completion of this lab exercise you will.

- Learn to configure standard VLANs 1-1001.
- Learn to use the IOS commands available to validate the configurations.

Lab Task:

1. Configure the hostname on SW1 to be SW1.
2. Configure no ip domain-lookup on SW1.
3. Configure the enable secret password as cisco on SW1.
4. Configure the console and vty password as sanfran on SW1.
5. Configure the exec-timeout command to the console and virtual terminal lines.
6. Configure the VLANs as shown in the network drawing.
7. Configure ports Fa0/1 – Fa0/3 as access ports and assign them to the VLANs shown in the network drawing.
8. Configure IP Addressing on all Host PCs as shown in the network drawing.
9. Verify your VLAN configuration using relevant show commands in Cisco IOS.

```
SW1#sh vlan

VLAN Name                              Status    Ports
---- --------------------------------- --------- -------------------------------
1    default                           active    Fa0/4, Fa0/5, Fa0/6, Fa0/7
                                                 Fa0/8, Fa0/9, Fa0/10, Fa0/11
                                                 Fa0/12, Fa0/13, Fa0/14, Fa0/15
                                                 Fa0/16, Fa0/17, Fa0/18, Fa0/19
                                                 Fa0/20, Fa0/21, Fa0/22, Fa0/23
                                                 Fa0/24
10   ADMIN                             active    Fa0/1
20   SALES                             active    Fa0/2
30   ENGINERING                        active    Fa0/3
1002 fddi-default                      act/unsup
1003 token-ring-default                act/unsup
1004 fddinet-default                   act/unsup
1005 trnet-default                     act/unsup

VLAN Type  SAID       MTU   Parent RingNo BridgeNo Stp  BrdgMode Trans1 Trans2
---- ----- ---------- ----- ------ ------ -------- ---- -------- ------ ------
1    enet  100001     1500  -      -      -        -    -        0      0
10   enet  100010     1500  -      -      -        -    -        0      0
20   enet  100020     1500  -      -      -        -    -        0      0
30   enet  100030     1500  -      -      -        -    -        0      0
1002 fddi  101002     1500  -      -      -        -    -        0      0
1003 tr    101003     1500  -      -      -        -    -        0      0
1004 fdnet 101004     1500  -      -      -        ieee -        0      0
1005 trnet 101005     1500  -      -      -        ibm  -        0      0

Remote SPAN VLANs
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Primary Secondary Type              Ports
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```

Extended VLANs:

Extended VLANs are VLANs within the range of 1006 to 4094. They are mainly used in service provider networks to allow the provisioning of a number of customers. Unfortunately Packet Tracer does not support extended VLANs so we will be unable to practice this in our Packet Tracer environment. In order to configure an extended VLAN you have to follow the guideline below:

- Extended VLANs are used just like normal VLANs; only different range.
- Extended VLANs must be configured on Switches that are in VTP Transparent mode only.
- Extended VLANs cannot be configured using VLAN database mode (only configuration mode).
- Extended VLANs are saved in the configuration file.