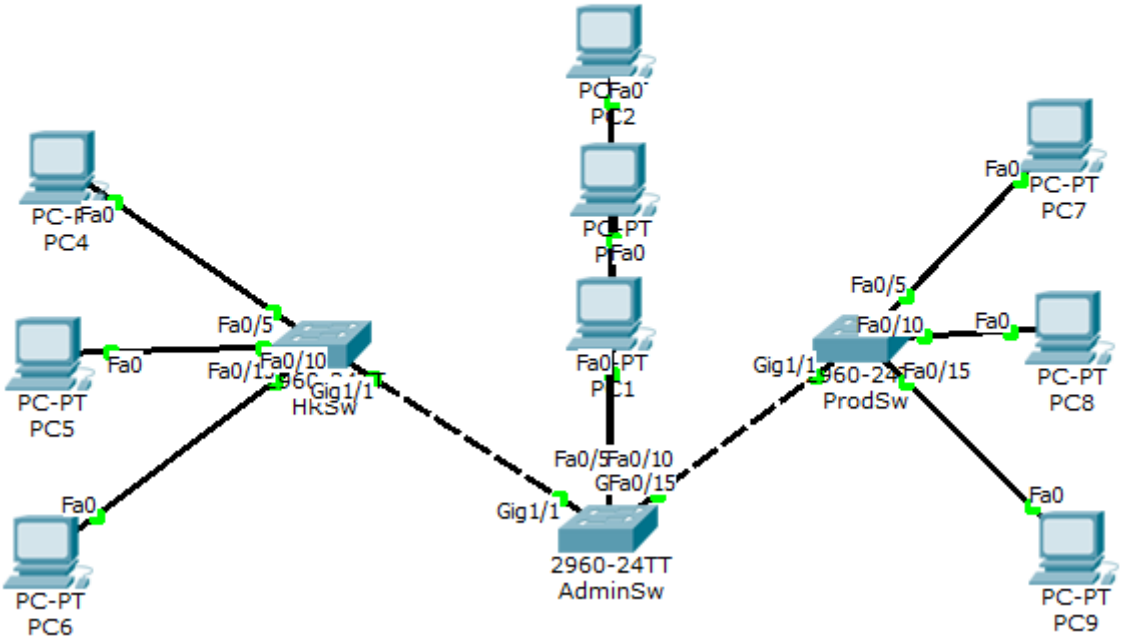
Lab 3.1.1.4: Packet Tracer – Configuring VLANs and Trunks

Topology



Addressing Table

Device	Interface	IP Address	Subnet Mask	VLAN
PC1	NIC	192.168.10.21	255.255.255.0	100
PC2	NIC	192.168.20.22	255.255.255.0	200
PC3	NIC	192.168.30.23	255.255.255.0	300
PC4	NIC	192.168.10.24	255.255.255.0	100
PC5	NIC	192.168.20.25	255.255.255.0	200
PC6	NIC	192.168.30.26	255.255.255.0	300
PC7	NIC	192.168.10.27	255.255.255.0	100
PC8	NIC	192.168.20.28	255.255.255.0	200
PC9	NIC	192.168.30.29	255.255.255.0	300

- Objectives

1: Verify the Default VLAN Configuration

2: Configure VLANs

3: Assign VLANs to Ports

4. Verify Connectivity

Background

VLANs are helpful in the administration of logical groups, allowing members of a group to be easily moved, changed, or added. This activity focuses on creating and naming VLANs, and assigning access ports to specific VLANs.

- View the Default VLAN Configuration
    - Display the current VLANs.

Using **AdminSw**, issue the command that displays all VLANs configured. By default, all interfaces are assigned to VLAN 1.

- Verify connectivity between PCs on the same network.

Notice that each PC can ping the other PC that shares the same network.

1. PC1 can ping PC4 and PC7
2. PC2 can ping PC5 and PC8
3. PC3 can ping PC6 and PC9

Pings to PCs in other networks fail.

Basing on the previous exercise 3.3, what makes this network differ from each other?

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- Configure VLANs
    - Create and name VLANs on AdminSw.

Create the following VLANs. Names are case-sensitive:

1. VLAN 100: Admin
2. VLAN 200: HRDept
3. VLAN 300: ProdDept
4. VLAN 99: Mgt&Native
    - Verify the VLAN configuration.

Which command will only display the VLAN name, status, and associated ports on a switch?

AdminSw#_____

- Create the VLANs on HR Switch and Production Switch.

Using the same commands from Step 1, create and name the same VLANs on HRDept and ProdDept.

- Verify the VLAN configuration.
- Assign VLANs to Ports
    - Assign VLANs to the active ports on AdminSw Switch.

Assign the VLANs to the following ports:

1. VLAN 100: Fast Ethernet 0/5
2. VLAN 200: Fast Ethernet 0/10
3. VLAN 300: Fast Ethernet 0/15
    - Assign VLANs to the active ports on AdminSw.

Configure HR and Production Switch the same manner you used to configure the AdminSw since all the switches uses the same VLAN access port assignments

- Verify loss of connectivity.

Previously, PCs that shared the same network could ping each other successfully. Try pinging between PC1 and PC4. Can they still ping each other? Why?

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What would be the best solution to resolve this issue?

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- Verifying connectivity.

Add a PC, on any of the switch and assign it to any of the ports; configure the IP address which corresponds to the port assignment like 192.168.10.30. Ping the PC which is on the same VLAN, transfer the connection to the next switch and ping the PC on the same VLAN.

Part 7: Configure Trunks

- Configure trunking on HR and Production Switch and use VLAN 99 as the native VLAN.
    1. Configure G1/1 and G1/2 interfaces on AdminSw for trunking.

HR(config)# interface g1/1

HR(config-if)# switchport mode trunk

1. Configure VLAN 99 as the native VLAN for G1/1 and G1/2 interfaces on **AdminSw**.

AdminSw(config-if)# switchport trunk native vlan 99

The trunk port takes about a minute to become active due to Spanning Tree which you will learn in the proceeding chapters. Click **Fast Forward Time** to speed the process. After the ports become active, you will periodically receive the following syslog messages:

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on GigabitEthernet1/2 (99), with Production Switch GigabitEthernet1/2 (1).

%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on GigabitEthernet1/1 (99), with HR Switch GigabitEthernet1/1 (1).

You configured VLAN 99 as the native VLAN on **HR and Production**. However, the **AdminSw** Switch is using VLAN 1 as the default native VLAN as indicated by the syslog message.

Although you have a native VLAN mismatch, pings between PCs on the same VLAN are now successful. Why?

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- Verify trunking is enabled on HR Switch and Production Switch.

On **HR Switch** and **Production Switch**, issue the command to confirm that DTP has successfully negotiated trunking with AdminSw on HR Switch and Production Switch. Both HR and Production switch will show the same information about trunk interfaces.

What command is used to display information about trunking?

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Which active VLANs are allowed to across the trunk?

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- Correct the native VLAN mismatch on HR Switch and Production Switch.
    1. Configure VLAN 99 as the native VLAN for the appropriate interfaces on HR Switch and Production Switch.
    2. Issue **show interface trunk** command to verify the correct native VLAN configuration.
- Verify configurations on HR Switch and Production Switch.
    99.What command to Issue if you want to verify that the native VLAN is now 99.

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1. Use the show vlan command to display information regarding configured VLANs. Why is port G1/1 on HR Switch no longer assigned to VLAN 1?

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Rubrics

Topology - 10pts

VLAN Implementation - 10pts

Trunking Implementation - 10pts

Verification - 10pts

Reflection - 10pts