

# **Lab Activity**

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*Course: Computer Networks*

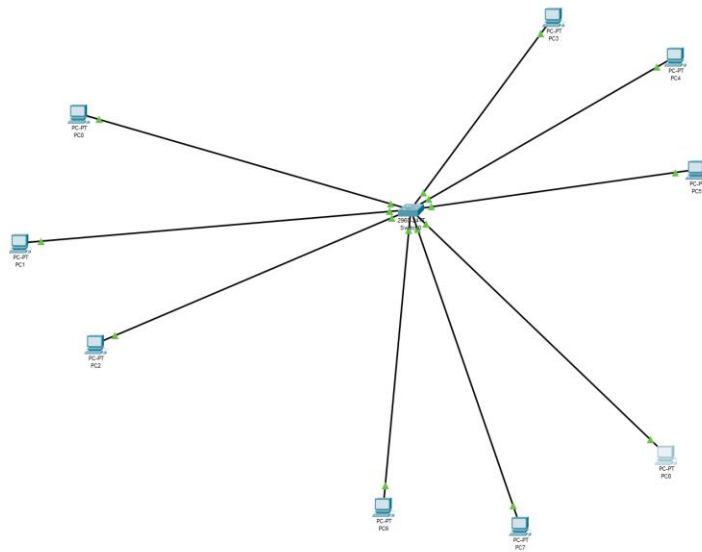
## **Lab activity:**

Create three different VLANs using a single switch and 3 nodes in each broadcast domain.

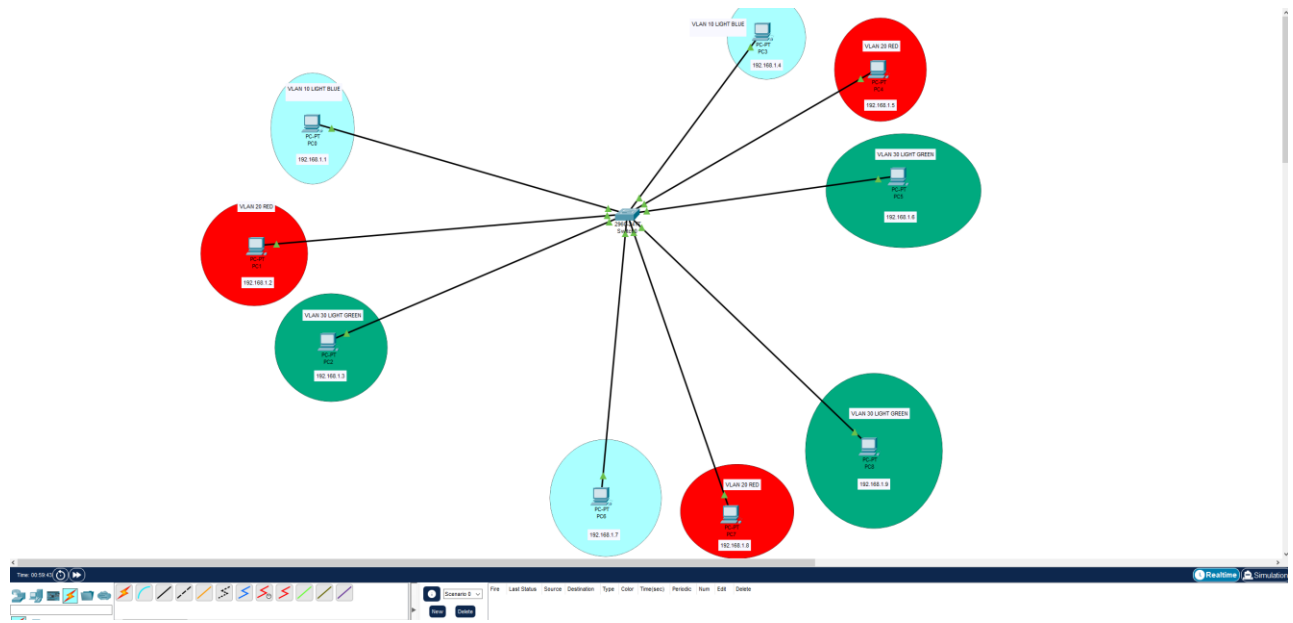
i-e vlan10, vlan20 and vlan30

Configure the above scenario using the command line interface. (No GUI)

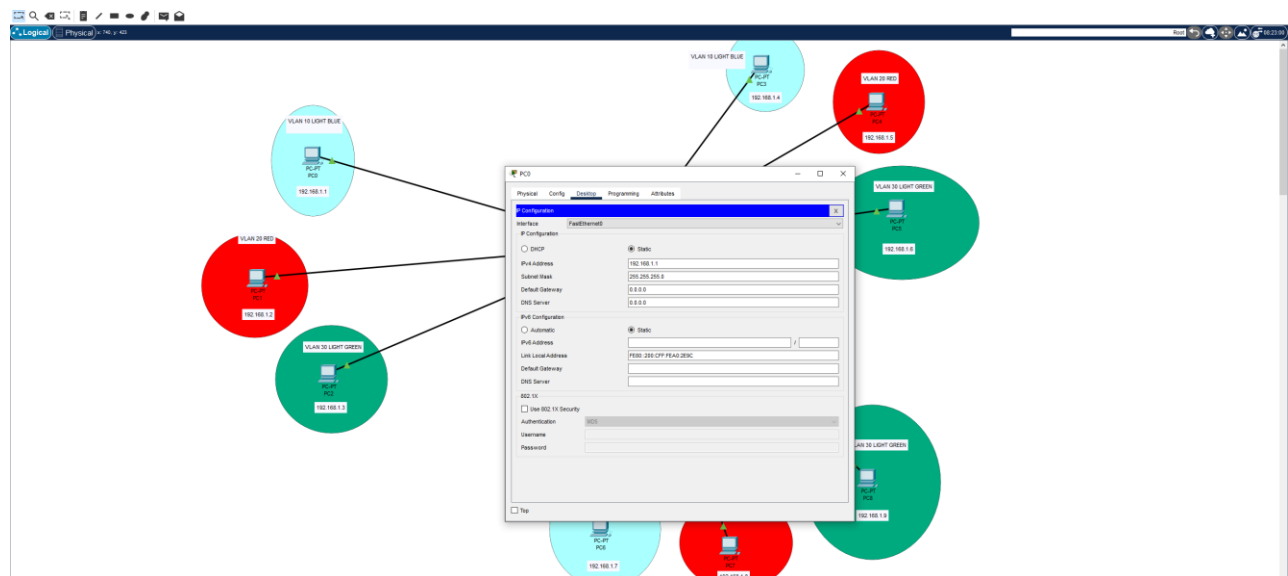
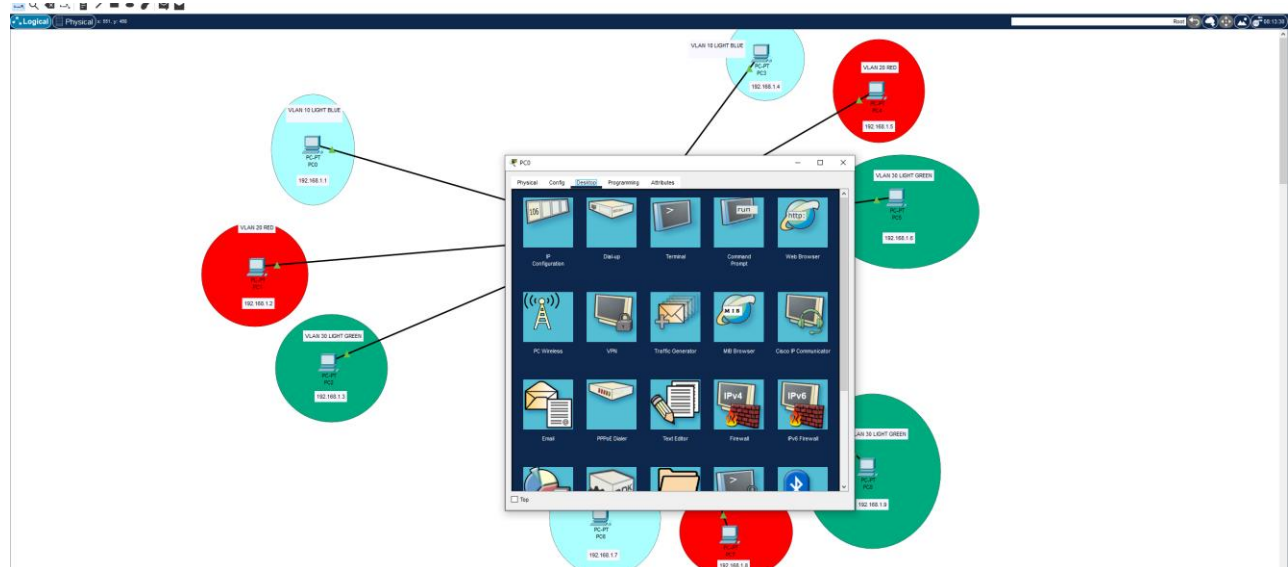
Step 1: Set up the activity structure with one switch and nine PCs.



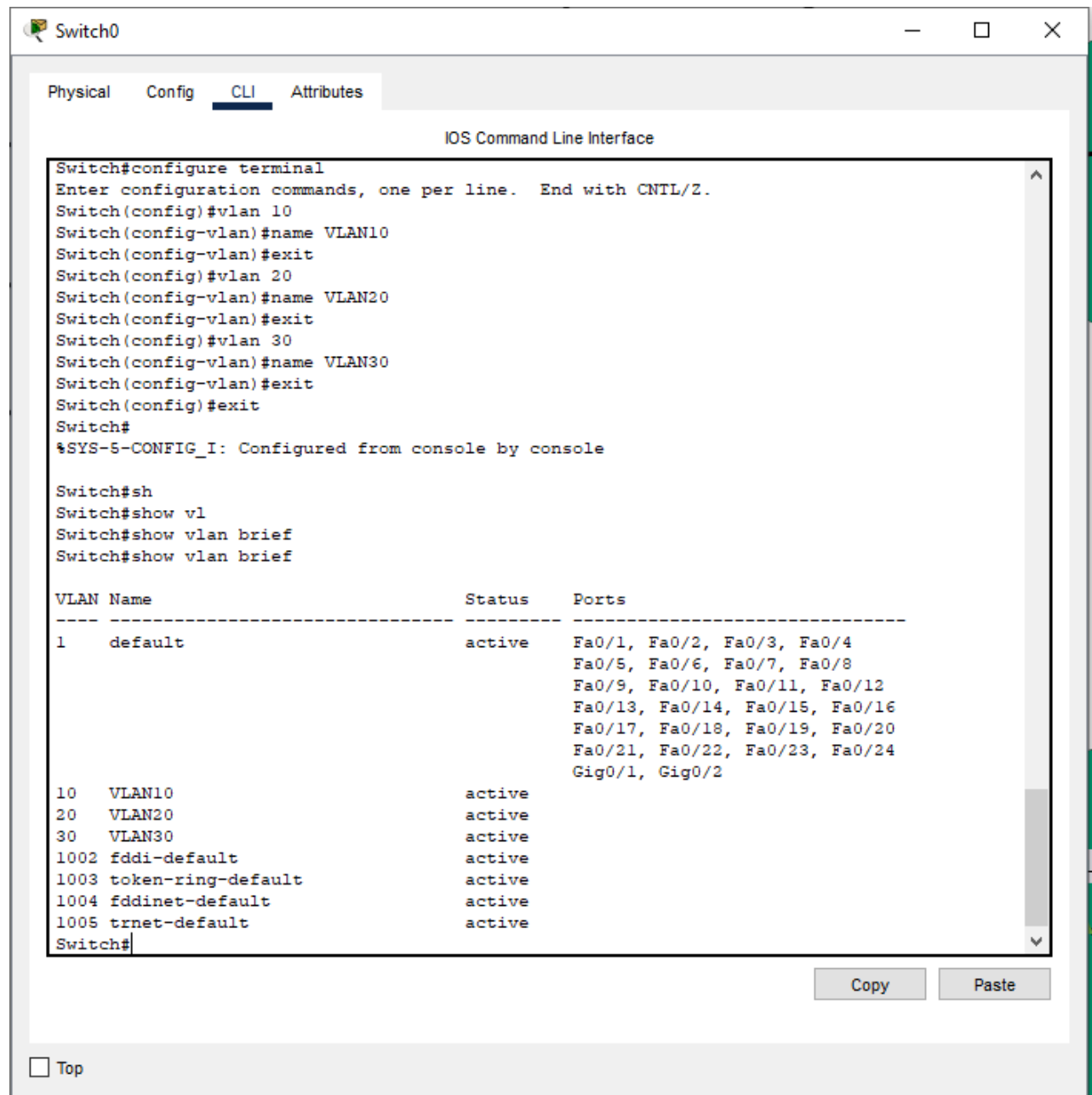
Step 2: Add colors through draw ellipse and Notes to label the devices with their IPs and VLANs.



Step 3: Assign IPs to each of the nine PCs, for example, PC0 to 192.168.1.1, PC1 to 192.168.1.2, and so on. Access PC0, go to IP configuration, and set the IP address.



Step 4: Enter global configuration mode, create VLANs, and assign names (e.g., VLAN 10, VLAN 20, VLAN 30). Click the switch, open the CLI, enter the commands, and verify with the command show vlan brief.



The screenshot shows the CLI of a switch named Switch0. The interface has tabs for Physical, Config, CLI (selected), and Attributes. The CLI window displays the following commands and output:

```
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#name VLAN10
Switch(config-vlan)#exit
Switch(config)#vlan 20
Switch(config-vlan)#name VLAN20
Switch(config-vlan)#exit
Switch(config)#vlan 30
Switch(config-vlan)#name VLAN30
Switch(config-vlan)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

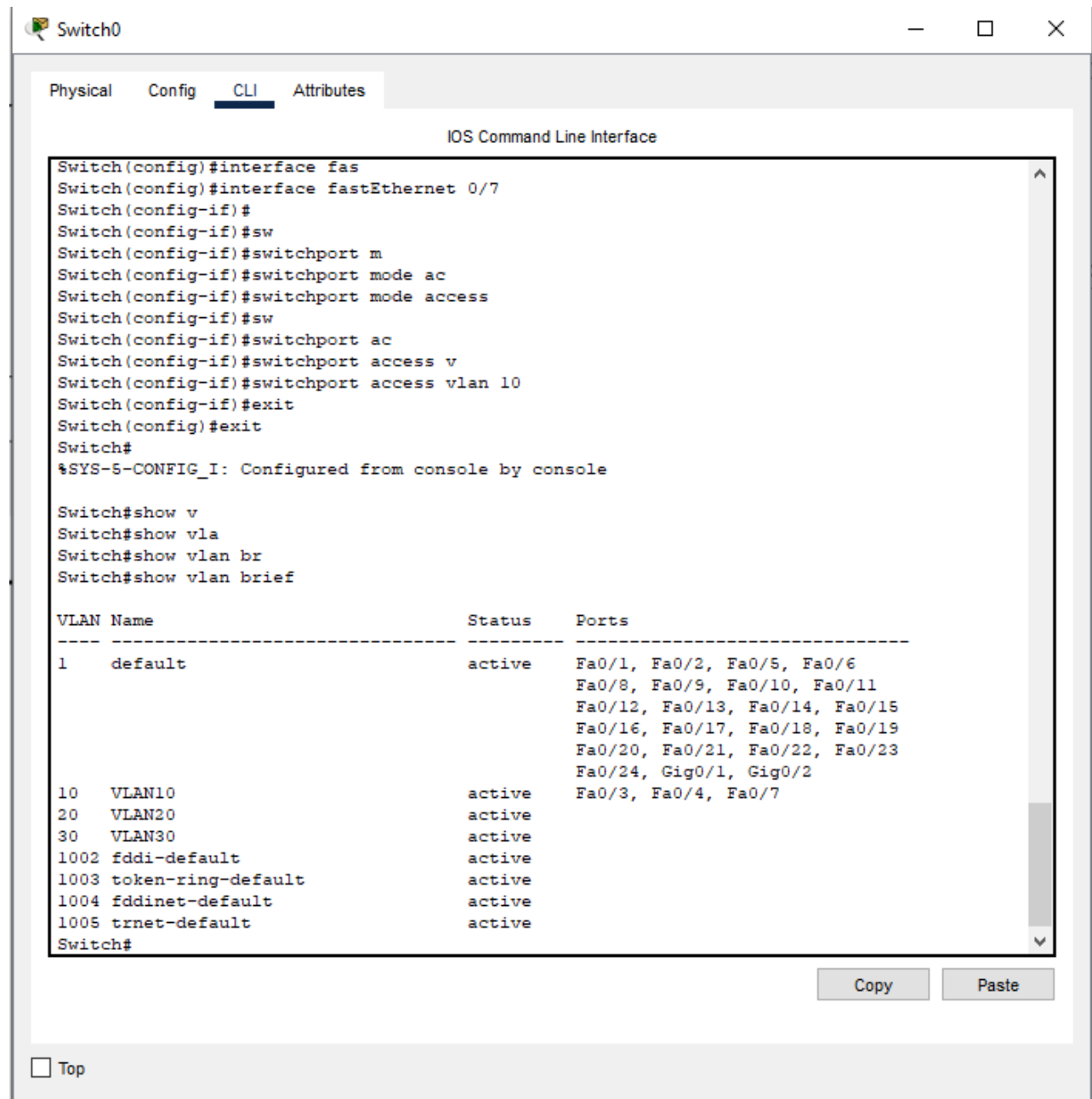
Switch#sh
Switch#show vl
Switch#show vlan brief
Switch#show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/2, Fa0/3, 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 Gig0/1, Gig0/2
10	VLAN10	active	
20	VLAN20	active	
30	VLAN30	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

At the bottom of the CLI window, there are 'Copy' and 'Paste' buttons. Below the CLI window, there is a 'Top' button.

Step 5: Assign the switch ports to their respective VLANs.

**For VLAN 10 (VLAN10), assign Fast Ethernet ports 0/3, 0/4, and 0/7 to the VLAN.**



The screenshot shows a network switch interface with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the IOS Command Line Interface. The configuration commands entered are:

```
Switch(config)#interface fas
Switch(config)#interface fastEthernet 0/7
Switch(config-if)#
Switch(config-if)#sw
Switch(config-if)#switchport m
Switch(config-if)#switchport mode ac
Switch(config-if)#switchport mode access
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access v
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#exit
Switch#
```

The verification commands entered are:

```
Switch#show v
Switch#show vla
Switch#show vlan br
Switch#show vlan brief
```

The output of the `show vlan brief` command is displayed as a table:

VLAN Name	Status	Ports
1 default	active	Fa0/1, Fa0/2, Fa0/5, Fa0/6 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, Gig0/1, Gig0/2
10 VLAN10	active	Fa0/3, Fa0/4, Fa0/7
20 VLAN20	active	
30 VLAN30	active	
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

At the bottom of the CLI window, there are "Copy" and "Paste" buttons. Below the CLI window, there is a "Top" button.

**For VLAN 20 (VLAN20), assign Fast Ethernet ports 0/2, 0/5, and 0/8 to the VLAN.**

Switch0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch(config-if)#exit
Switch(config)#inte
Switch(config)#interface fa
Switch(config)#interface fastEthernet 0/8
Switch(config-if)#sw
Switch(config-if)#switchport por
Switch(config-if)#switchport m
Switch(config-if)#switchport mode ac
Switch(config-if)#switchport mode access
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access vl
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show vla
Switch#show vlan br
Switch#show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/6, 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, Gig0/1, Gig0/2
10	VLAN10	active	Fa0/3, Fa0/4, Fa0/7
20	VLAN20	active	Fa0/2, Fa0/5, Fa0/8
30	VLAN30	active	
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

Switch#

Copy Paste

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**For VLAN 30 (VLAN30), assign Fast Ethernet ports 0/1, 0/6, and 0/9 to the VLAN.**

Switch0

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Switch(config-if)#switchport access vlan 30
Switch(config-if)#exit
Switch(config)#inte
Switch(config)#interface mod
Switch(config)#interface fas
Switch(config)#interface fastEthernet 0/9
Switch(config-if)#sw
Switch(config-if)#switchport m
Switch(config-if)#switchport mode ac
Switch(config-if)#switchport mode access
Switch(config-if)#sw
Switch(config-if)#switchport ac
Switch(config-if)#switchport access vla
Switch(config-if)#switchport access vlan 30
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-S-CONFIG_I: Configured from console by console

Switch#hsow
Switch#show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	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, Gig0/1 Gig0/2
10	VLAN10	active	Fa0/3, Fa0/4, Fa0/7
20	VLAN20	active	Fa0/2, Fa0/5, Fa0/8
30	VLAN30	active	Fa0/1, Fa0/6, Fa0/9
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

Switch#

Copy Paste

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Step 6: Verify the setup by sending some packets to test connectivity.



