SWITCH

300-115 Lab Guide
To perform the labs referenced in this book, please download and install the necessary files (refer to your purchase receipt for the download link), navigate to the appropriate lab in the lab menu in the Boson NetSim, and load the lab; all labs should work in NetSim 11 or later. To learn more about the Boson NetSim or to purchase and download the software, please visit www.boson.com/netsim.

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A sample lab is included in this document to display the quality, format, and content of labs that are included in the Boson NetSim and the Boson Courseware products. However, you will not be able to work through this lab in NetSim without purchasing both Boson NetSim and the Boson CCNP Courseware Lab Pack.

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Module 2

Lab 2.1 – IOS Switching Initial Configuration
Lab 2.1 – IOS Switching Initial Configuration

To perform this lab in Boson NetSim, please download the necessary files (refer to your purchase receipt for the download link), navigate to the appropriate lab in the lab menu in NetSim, and load the lab. You can then accomplish the tasks below.

Objective
Become familiar with the lab access menu, learn the lab topology, and complete the initial configuration of the devices on the network.

Lab Topology
For this lab, your network design will include two PC workstations, P1PC1 and P2PC2, and four switches, P1ASW1, P1DSW1, P2ASW2, and P2DSW2. P1ASW1 and P2ASW2 are Access layer switches. P1DSW1 and P2DSW2 are Distribution layer switches. The Access and Distribution layers are two of the three layers in the Cisco three-layer hierarchical network model, which also includes the Core layer. The topology diagram below represents the NetMap in the Simulator.
The commands you will need to perform the tasks in this lab, along with their syntax and descriptions, are shown in the Command Summary table below:

### Command Summary

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>configure terminal</code></td>
<td>enters global configuration mode from privileged EXEC mode</td>
</tr>
<tr>
<td><code>copy running-config startup-config</code></td>
<td>saves the configuration file</td>
</tr>
<tr>
<td><code>description description-text</code></td>
<td>assigns a description to an interface, a class map, or a policy map</td>
</tr>
<tr>
<td>`duplex {full</td>
<td>half</td>
</tr>
<tr>
<td><code>enable</code></td>
<td>enters privileged EXEC mode</td>
</tr>
<tr>
<td><code>end</code></td>
<td>ends and exits configuration mode</td>
</tr>
<tr>
<td><code>exit</code></td>
<td>exits one level in the menu structure</td>
</tr>
<tr>
<td><code>hostname host-name</code></td>
<td>sets the device name</td>
</tr>
<tr>
<td><code>interface range fastethernet slot/starting-port - ending-port</code></td>
<td>configures a range of interfaces</td>
</tr>
<tr>
<td><code>interface type number</code></td>
<td>changes from global configuration mode to interface configuration mode</td>
</tr>
<tr>
<td><code>ip address ip-address subnet-mask</code></td>
<td>assigns an IP address to an interface</td>
</tr>
<tr>
<td><code>ipconfig /all</code></td>
<td>is used in NetSim to display the IP addresses and Media Access Control (MAC) address on a workstation</td>
</tr>
<tr>
<td><code>ipconfig /ip ip-address subnet-mask</code></td>
<td>is used in NetSim to assign an IP address and subnet mask to a workstation interface</td>
</tr>
<tr>
<td>`line [aux</td>
<td>console</td>
</tr>
<tr>
<td><code>login</code></td>
<td>enables password checking</td>
</tr>
<tr>
<td><code>password password</code></td>
<td>specifies the password that is required for a user to log in</td>
</tr>
<tr>
<td><code>show interfaces [type number]</code></td>
<td>shows the switchport configuration</td>
</tr>
<tr>
<td><code>show interfaces status</code></td>
<td>displays the line status of all interfaces</td>
</tr>
<tr>
<td><code>show ip interface brief</code></td>
<td>displays a brief summary of interface status and configuration</td>
</tr>
<tr>
<td><code>show running-config</code></td>
<td>displays the active configuration file</td>
</tr>
<tr>
<td><code>shutdown; no shutdown</code></td>
<td>disables an interface; enables an interface</td>
</tr>
<tr>
<td>`speed {10</td>
<td>100</td>
</tr>
<tr>
<td>`switchport mode {access</td>
<td>dynamic</td>
</tr>
</tbody>
</table>

### Lab Tasks

A network associate with your company began configuring the network but was unable to complete the configurations needed. A password of *cisco* has been set on P2ASW2 and on P2DSW2.
Task 1: Examine the Network Topology, and Note Existing Configuration Errors

Compare the topology diagram shown above with the actual configuration of the devices on the network. On the following diagram, note any discrepancies you find. The topology diagram is correct. In Task 2, you will correct any errors you find in the current configuration.

Use the necessary commands to verify the port assignments for the devices in the topology. Enter any configuration errors that you discover in the following diagram. A password of `cisco` has been set on P2ASW2 and on P2DSW2.

![Topology Diagram]

Task 2: Fix Existing Errors, and Complete the Network Configuration

In this task, you will apply a basic configuration to the lab devices and correct the configuration errors you found in Task 1.

1. On P1ASW1, assign a host name of `P1ASW1`. On P1DSW1, assign a host name of `P1DSW1`.

2. Correct any incorrect device configurations you discovered in Task 1.

3. On P1ASW1 and P1DSW1, configure the console port to process logins. Configure a console password of `cisco`.

4. Configure the virtual terminal (vty) ports on P1ASW1 and P1DSW1 to process logins. Configure a vty password of `cisco`.

5. On P1ASW1, enable the interface that connects the switch to the workstation. Configure the interface with a speed setting of `10` and a duplex setting of `half`, and configure the following description on the interface:

   description student P1PC1 on P1ASW1
6. On P1ASW1, enable the interfaces that connect the Access layer switch to the Distribution layer switches, configure the interfaces with a speed setting of 100 and a duplex setting of full, and configure an appropriate description on each interface. For instance, set the following description on the Fa0/1 and Fa0/2 interfaces:

`description P1ASW1 to P1DSW1`

7. On P1DSW1, enable the interfaces that connect the Distribution layer switch to the Access layer switches, configure the interfaces with a speed setting of 100 and a duplex setting of full, and configure the appropriate description on each interface. For instance, set the following description on the appropriate interfaces on P1DSW1:

`description P1DSW1 to P1ASW1`

8. On P2DSW2, enable the interfaces that connect the Distribution layer switch to the Access layer switches, configure the interfaces with a speed setting of 100 and a duplex setting of full, and configure the appropriate description on each interface. For instance, set the following description on the appropriate interfaces on P2DSW2:

`description P2DSW2 to P1ASW1`

9. On P1DSW1, enable the interfaces that connect to P2DSW2. Configure the interfaces with a speed setting of 100 and a duplex setting of full, and configure the following description on each interface:

`description P1DSW1 to P2DSW2`

10. On P2DSW2, enable the interfaces that connect to P1DSW1. Configure the interfaces with a speed setting of 100 and a duplex setting of full, and configure the following description on each interface:

`description P2DSW2 to P1DSW1`

11. On the Access layer switches, configure the FastEthernet 0/1 through 0/5 interfaces to be access ports.

12. On the Access layer switches, verify that the interface configurations are correct.

13. On the Distribution layer switches, configure the FastEthernet 0/1 through 0/4 interfaces and 0/11 through 0/12 interfaces to be access ports.

14. On the Distribution layer switches, verify that the interface configurations are correct.

15. On the Access layer switches, verify that the switchport configurations are correct.

16. On every device, save the configurations to non-volatile random access memory (NVRAM).
Lab Solutions

Task 1: Examine the Network Topology, and Note Existing Configuration Errors

A password of `cisco` has been set on P2ASW2 and on P2DSW2.

1. Output from the `ipconfig /all` command should enable you to determine that the 255.255.255.0 subnet mask assigned to P1PC1 is incorrect. Output from the `show ip interface brief` command or the `show running-config` command on the switches should enable you to determine that the 172.16.2.2 IP address assigned to VLAN 1 on P2ASW2 is incorrect.

The diagram below displays the incorrectly configured interfaces:

![ Incorrectly configured interfaces ]

Task 2: Fix Existing Errors, and Complete the Network Configuration

1. You should issue the following commands to configure the appropriate host names on P1ASW1 and P1DSW1:

   On P1ASW1:
   ```
   Switch(config)#hostname P1ASW1
   P1ASW1(config)#
   
   On P1DSW1:
   Switch(config)#hostname P1DSW1
   P1DSW1(config)#
   ```
2. You should issue the following commands to correct the subnet mask assigned to P1PC1, to correct the IP address assigned to P2ASW2’s VLAN 1 interface, and to assign the correct IP addresses to P1ASW1’s and P1DSW1’s VLAN 1 interfaces:

On P1PC1:
C:>ipconfig /ip 172.16.1.2 255.255.0.0

On P2ASW2:
Password:cisco
P2ASW2>enable
P2ASW2#configure terminal
P2ASW2(config)#interface vlan 1
P2ASW2(config-if)#ip address 172.16.1.20 255.255.0.0

P1ASW1(config)#interface vlan 1
P1ASW1(config-if)#ip address 172.16.1.10 255.255.0.0

P1DSW1(config)#interface vlan 1
P1DSW1(config-if)#ip address 172.16.1.100 255.255.0.0

3. You should issue the following commands on P1ASW1 and P1DSW1 to configure the console port to process logins and to configure a console password of cisco:

P1ASW1(config)#line console 0
P1ASW1(config-line)#login
P1ASW1(config-line)#password cisco

P1DSW1(config)#line console 0
P1DSW1(config-line)#login
P1DSW1(config-line)#password cisco

4. You should issue the following commands on P1ASW1 and P1DSW1 to configure the vty ports to process logins and to configure a vty password of cisco:

P1ASW1(config)#line vty 0 15
P1ASW1(config-line)#login
P1ASW1(config-line)#password cisco

P1DSW1(config)#line vty 0 4
P1DSW1(config-line)#login
P1DSW1(config-line)#password cisco

5. You should issue the following commands on P1ASW1 to enable the FastEthernet 0/5 interface, which connects the switch to the workstation, to configure the speed and duplex settings, and to configure the description:

P1ASW1(config)#interface fastethernet 0/5
P1ASW1(config-if)#speed 10
P1ASW1(config-if)#duplex half
P1ASW1(config-if)#description student P1PC1 on P1ASW1
6. You should issue the following commands on P1ASW1 to enable the interfaces that connect the Access layer switch to the Distribution layer switches, to configure the speed and duplex settings, and to configure the descriptions:

```
P1ASW1(config)#interface fastethernet 0/1
P1ASW1(config-if)#speed 100
P1ASW1(config-if)#duplex full
P1ASW1(config-if)#description P1ASW1 to P1DSW1
P1ASW1(config-if)#interface fastethernet 0/2
P1ASW1(config-if)#speed 100
P1ASW1(config-if)#duplex full
P1ASW1(config-if)#description P1ASW1 to P1DSW1
P1ASW1(config-if)#interface fastethernet 0/3
P1ASW1(config-if)#speed 100
P1ASW1(config-if)#duplex full
P1ASW1(config-if)#description P1ASW1 to P2DSW2
P1ASW1(config-if)#interface fastethernet 0/4
P1ASW1(config-if)#speed 100
P1ASW1(config-if)#duplex full
P1ASW1(config-if)#description P1ASW1 to P2DSW2
```

7. You should issue the following commands on P1DSW1 to enable the interfaces that connect the Distribution layer switch to the Access layer switches, to configure the speed and duplex settings, and to configure the descriptions:

```
P1DSW1(config)#interface fastethernet 0/1
P1DSW1(config-if)#speed 100
P1DSW1(config-if)#duplex full
P1DSW1(config-if)#description P1DSW1 to P1ASW1
P1DSW1(config-if)#interface fastethernet 0/2
P1DSW1(config-if)#speed 100
P1DSW1(config-if)#duplex full
P1DSW1(config-if)#description P1DSW1 to P1ASW1
P1DSW1(config-if)#interface fastethernet 0/3
P1DSW1(config-if)#speed 100
P1DSW1(config-if)#duplex full
P1DSW1(config-if)#description P1DSW1 to P2ASW2
P1DSW1(config-if)#interface fastethernet 0/4
P1DSW1(config-if)#speed 100
P1DSW1(config-if)#duplex full
P1DSW1(config-if)#description P1DSW1 to P2ASW2
```
8. You should issue the following commands on P2DSW2 to enable the interfaces that connect the Distribution layer switch to the Access layer switches, to configure the speed and duplex settings, and to configure the descriptions:

Password:cisco
P2DSW2>enable
P2DSW2#configure terminal
P2DSW2(config)#interface fastethernet 0/1
P2DSW2(config-if)#speed 100
P2DSW2(config-if)#duplex full
P2DSW2(config-if)#description P2DSW2 to P1ASW1
P2DSW2(config-if)#interface fastethernet 0/2
P2DSW2(config-if)#speed 100
P2DSW2(config-if)#duplex full
P2DSW2(config-if)#description P2DSW2 to P1ASW1
P2DSW2(config-if)#interface fastethernet 0/3
P2DSW2(config-if)#speed 100
P2DSW2(config-if)#duplex full
P2DSW2(config-if)#description P2DSW2 to P2ASW2
P2DSW2(config-if)#interface fastethernet 0/4
P2DSW2(config-if)#speed 100
P2DSW2(config-if)#duplex full
P2DSW2(config-if)#description P2DSW2 to P2ASW2

9. You should issue the following commands on P1DSW1 to enable the interfaces that connect to P2DSW2, to configure the speed and duplex settings, and to configure the descriptions:

P1DSW1(config)#interface fastethernet 0/11
P1DSW1(config-if)#speed 100
P1DSW1(config-if)#duplex full
P1DSW1(config-if)#description P1DSW1 to P2DSW2
P1DSW1(config-if)#interface fastethernet 0/12
P1DSW1(config-if)#speed 100
P1DSW1(config-if)#duplex full
P1DSW1(config-if)#description P1DSW1 to P2DSW2

10. You should issue the following commands on P2DSW2 to enable the interfaces that connect to P1DSW1, to configure the speed and duplex settings, and to configure the descriptions:

P2DSW2(config)#interface fastethernet 0/11
P2DSW2(config-if)#speed 100
P2DSW2(config-if)#duplex full
P2DSW2(config-if)#description P2DSW2 to P1DSW1
P2DSW2(config-if)#interface fastethernet 0/12
P2DSW2(config-if)#speed 100
P2DSW2(config-if)#duplex full
P2DSW2(config-if)#description P2DSW2 to P1DSW1
11. On the Access layer switches, you should issue the following commands to configure the FastEthernet 0/1 through 0/5 interfaces to be access ports:

   P1ASW1(config)#interface range fastethernet 0/1 - 5
   P1ASW1(config-if-range)#switchport mode access

   P2ASW2(config)#interface range fastethernet 0/1 - 5
   P2ASW2(config-if-range)#switchport mode access

12. On the Access layer switches, you should issue the following command to verify that the interface configurations are correct:

   P1ASW1#show interfaces status

   Port    Name               Status       Vlan    Duplex  Speed Type
   Fa0/1   P1ASW1 to P1DSW1   connected    1         full    100 10/100BaseTX
   Fa0/2   P1ASW1 to P1DSW1   connected    1         full    100 10/100BaseTX
   Fa0/3   P1ASW1 to P2DSW2   connected    1         full    100 10/100BaseTX
   Fa0/4   P1ASW1 to P2DSW2   connected    1         full    100 10/100BaseTX
   Fa0/5   student P1PC1 on P connected    1         half     10 10/100BaseTX
   Fa0/6                      notconnect   1         auto   auto 10/100BaseTX
   Fa0/7                      notconnect   1         auto   auto 10/100BaseTX
   Fa0/8                      notconnect   1         auto   auto 10/100BaseTX
   Fa0/9                      notconnect   1         auto   auto 10/100BaseTX
   Fa0/10                     notconnect   1         auto   auto 10/100BaseTX
   Fa0/11                     notconnect   1         auto   auto 10/100BaseTX
   Fa0/12                     notconnect   1         auto   auto 10/100BaseTX

   P2ASW2#show interfaces status

   Port    Name               Status       Vlan    Duplex  Speed Type
   Fa0/1   P2ASW2 to P1DSW1   connected    1         full    100 10/100BaseTX
   Fa0/2   P2ASW2 to P1DSW1   connected    1         full    100 10/100BaseTX
   Fa0/3   P2ASW2 to P2DSW2   connected    1         full    100 10/100BaseTX
   Fa0/4   P2ASW2 to P2DSW2   connected    1         full    100 10/100BaseTX
   Fa0/5   student P2PC2 on P connected    1         half     10 10/100BaseTX
   Fa0/6                      notconnect   1         auto   auto 10/100BaseTX
   Fa0/7                      notconnect   1         auto   auto 10/100BaseTX
   Fa0/8                      notconnect   1         auto   auto 10/100BaseTX
   Fa0/9                      notconnect   1         auto   auto 10/100BaseTX
   Fa0/10                     notconnect   1         auto   auto 10/100BaseTX
   Fa0/11                     notconnect   1         auto   auto 10/100BaseTX
   Fa0/12                     notconnect   1         auto   auto 10/100BaseTX
13. On the Distribution layer switches, you should issue the following commands to configure the FastEthernet 0/1 through 0/4 and 0/11 through 0/12 interfaces to be access ports:

```
P1DSW1(config)#interface range fastethernet 0/1 - 4
P1DSW1(config-if-range)#switchport mode access
P1DSW1(config-if-range)#interface range fastethernet 0/11 - 12
P1DSW1(config-if-range)#switchport mode access
```

```
P2DSW2(config)#interface range fastethernet 0/1 - 4
P2DSW2(config-if-range)#switchport mode access
P2DSW2(config-if-range)#interface range fastethernet 0/11 - 12
P2DSW2(config-if-range)#switchport mode access
```

14. On the Distribution layer switches, you should issue the following command to verify that the interface configurations are correct:

```
P1DSW1#show interfaces status
```

<table>
<thead>
<tr>
<th>Port</th>
<th>Name</th>
<th>Status</th>
<th>Vlan</th>
<th>Duplex</th>
<th>Speed</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fa0/1</td>
<td>P1DSW1 to P1ASW1</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/2</td>
<td>P1DSW1 to P1ASW1</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/3</td>
<td>P1DSW1 to P2ASW2</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/4</td>
<td>P1DSW1 to P2ASW2</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/5</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/6</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/7</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/8</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/9</td>
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<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/10</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/11</td>
<td>P1DSW1 to P2DSW2</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/12</td>
<td>P1DSW1 to P2DSW2</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Gi0/1</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Gi0/2</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
</tbody>
</table>

```
P2DSW2#show interfaces status
```

<table>
<thead>
<tr>
<th>Port</th>
<th>Name</th>
<th>Status</th>
<th>Vlan</th>
<th>Duplex</th>
<th>Speed</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fa0/1</td>
<td>P2DSW2 to P1ASW1</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/2</td>
<td>P2DSW2 to P1ASW1</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/3</td>
<td>P2DSW2 to P2ASW2</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/4</td>
<td>P2DSW2 to P2ASW2</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/5</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
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<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/7</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/8</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/9</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/10</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/11</td>
<td>P2DSW2 to P1DSW1</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Fa0/12</td>
<td>P2DSW2 to P1DSW1</td>
<td>connected</td>
<td>1</td>
<td>full</td>
<td>100</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Gi0/1</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
<tr>
<td>Gi0/2</td>
<td></td>
<td>notconnect</td>
<td>1</td>
<td>auto</td>
<td>auto</td>
<td>10/100BaseTX</td>
</tr>
</tbody>
</table>
15. You should issue the following command on P1ASW1 and P2ASW2 to verify that the switchport configurations are correct. Sample output is shown below:

```
P1ASW1#show interfaces fastethernet 0/1 switchport
Name: Fa0/1
Switchport: Enabled
Administrative Mode: static access
Operational Mode: static access
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Trunking VLANs Enabled: ALL
Pruning VLANs Enabled: 2-1001

Protected: false

Appliance trust: none
```

```
P2ASW2#show interfaces fastethernet 0/1 switchport
Name: Fa0/1
Switchport: Enabled
Administrative Mode: static access
Operational Mode: static access
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Trunking VLANs Enabled: ALL
Pruning VLANs Enabled: 2-1001

Protected: false

Appliance trust: none
```

16. You should issue the following command on all switches to save the configurations to NVRAM.

```
P1ASW1#copy running-config startup-config

P2ASW2#copy running-config startup-config

P1DSW1#copy running-config startup-config

P2DSW2#copy running-config startup-config
```
### Sample Configuration Scripts

<table>
<thead>
<tr>
<th>P1ASW1</th>
<th>P1ASW1 (continued)</th>
</tr>
</thead>
</table>
| P1ASW1#show running-config  
Building configuration...  
Current configuration : 1323 bytes  
!  
Version 15.b  
service timestamps debug uptime  
service timestamps log uptime  
no service password-encryption  
!  
hostname P1ASW1  
!  
ip subnet-zero  
!  
no ip domain-lookup  
spanning-tree mode pvst  
spanning-tree extend system-id  
!  
interface FastEthernet0/1  
description P1ASW1 to P1DSW1  
switchport mode access  
speed 100  
duplex full  
!  
interface FastEthernet0/2  
description P1ASW1 to P1DSW1  
switchport mode access  
speed 100  
duplex full  
!  
interface FastEthernet0/3  
description P1ASW1 to P2DSW2  
switchport mode access  
speed 100  
duplex full  
!  
interface FastEthernet0/4  
description P1ASW1 to P2DSW2  
switchport mode access  
speed 100  
duplex full  
| interface FastEthernet0/5  
description student P1PC1 on P1ASW1  
switchport mode access  
speed 10  
duplex half  
!  
interface FastEthernet0/6  
!  
interface FastEthernet0/7  
!  
interface FastEthernet0/8  
!  
interface FastEthernet0/9  
!  
interface FastEthernet0/10  
!  
interface FastEthernet0/11  
!  
interface FastEthernet0/12  
!  
interface Vlan 1  
ip address 172.16.1.10 255.255.0.0  
no ip route-cache  
!  
ip classless  
no ip http server  
!  
line con 0  
login  
password cisco  
line aux 0  
line vty 0 15  
login  
password cisco  
!  
no scheduler allocate  
end |
<table>
<thead>
<tr>
<th>P1DSW1</th>
<th>P1DSW1 (continued)</th>
</tr>
</thead>
</table>
| P1DSW1#show running-config  
Building configuration...  
Current configuration : 1465 bytes |
| interface FastEthernet0/6  
!  
interface FastEthernet0/7  
!  
interface FastEthernet0/8  
!  
interface FastEthernet0/9  
!  
interface FastEthernet0/10  
!  
interface FastEthernet0/11  
description P1DSW1 to P2DSW2  
switchport mode access  
speed 100  
duplex full  
!  
interface GigabitEthernet0/1  
!  
interface GigabitEthernet0/2  
!  
interface Vlan 1  
  ip address 172.16.1.100 255.255.0.0  
  no ip route-cache  
!  
ip classless  
no ip http server  
!  
line con 0  
  login  
  password cisco  
line aux 0  
line vty 0 4  
  login  
  password cisco  
!  
no scheduler allocate  
end |
| !  
hostname P1DSW1  
!  
ip subnet-zero  
!  
ip cef  
no ip domain-lookup  
spanning-tree mode pvst  
spanning-tree extend system-id  
!  
interface FastEthernet0/1  
  description P1DSW1 to P1ASW1  
  switchport mode access  
speed 100  
duplex full  
!  
interface FastEthernet0/2  
  description P1DSW1 to P1ASW1  
  switchport mode access  
speed 100  
duplex full  
!  
interface FastEthernet0/3  
  description P1DSW1 to P2ASW2  
  switchport mode access  
speed 100  
duplex full  
!  
interface FastEthernet0/4  
  description P1DSW1 to P2ASW2  
  switchport mode access  
speed 100  
duplex full  
!  
interface FastEthernet0/5  
!  
interface FastEthernet0/6  
!  
interface FastEthernet0/7  
!  
interface FastEthernet0/8  
!  
interface FastEthernet0/9  
!  
interface FastEthernet0/10  
!  
interface FastEthernet0/11  
description P1DSW1 to P2DSW2  
switchport mode access  
speed 100  
duplex full  
!  
interface FastEthernet0/12  
description P1DSW1 to P2DSW2  
switchport mode access  
speed 100  
duplex full  
!  
interface GigabitEthernet0/1  
!  
interface GigabitEthernet0/2  
!  
interface Vlan 1  
  ip address 172.16.1.100 255.255.0.0  
  no ip route-cache  
!  
ip classless  
no ip http server  
!  
line con 0  
  login  
  password cisco  
line aux 0  
line vty 0 4  
  login  
  password cisco  
!  
no scheduler allocate  
end |
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