CCNA Exploration: LAN Switching and Wireless Student Skills-Based Assessment Lab Answer Key

Topology Diagram

Addressing Table

<table>
<thead>
<tr>
<th>Device</th>
<th>Interface</th>
<th>IP Address</th>
<th>Subnet Mask</th>
<th>Default Gateway</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>Fa0/1</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>F0/1.10</td>
<td>172.17.10.1</td>
<td>255.255.255.0</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>F0/1.20</td>
<td>172.17.20.1</td>
<td>255.255.255.0</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>F0/1.30</td>
<td>172.17.30.1</td>
<td>255.255.255.0</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>F0/1.99</td>
<td>172.17.99.1</td>
<td>255.255.255.0</td>
<td>N/A</td>
</tr>
<tr>
<td>S1</td>
<td>VLAN99</td>
<td>172.17.99.11</td>
<td>255.255.255.0</td>
<td>172.17.99.1</td>
</tr>
<tr>
<td>S2</td>
<td>VLAN99</td>
<td>172.17.99.12</td>
<td>255.255.255.0</td>
<td>172.17.99.1</td>
</tr>
<tr>
<td>Device</td>
<td>Interface</td>
<td>IP Address</td>
<td>Subnet Mask</td>
<td>Default Gateway</td>
</tr>
<tr>
<td>--------</td>
<td>-----------</td>
<td>--------------</td>
<td>------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>S3</td>
<td>VLAN99</td>
<td>172.17.99.13</td>
<td>255.255.255.0</td>
<td>172.17.99.1</td>
</tr>
<tr>
<td>PC1</td>
<td>NIC</td>
<td>172.17.10.21</td>
<td>255.255.255.0</td>
<td>172.17.10.1</td>
</tr>
<tr>
<td>PC2</td>
<td>NIC</td>
<td>172.17.20.22</td>
<td>255.255.255.0</td>
<td>172.17.20.1</td>
</tr>
<tr>
<td>PC3</td>
<td>NIC</td>
<td>172.17.30.23</td>
<td>255.255.255.0</td>
<td>172.17.30.1</td>
</tr>
</tbody>
</table>

### Learning Objectives

To complete this lab:

- Cable a network according to the topology diagram
- Erase the startup configuration and reload a router to the default state
- Perform basic configuration tasks on a router
- Configure and activate interfaces
- Configure VTP servers and client
- Configure VLANs on the switches
- Configure STP
- Configure inter-VLAN routing

### Scenario

This lab tests you on the skills and knowledge that you learned in Exploration 3. Use `cisco` for all passwords in this lab, except for the enable secret password, which is `class`.

### Port Assignments

#### Switch 2

<table>
<thead>
<tr>
<th>Ports</th>
<th>Assignment</th>
<th>Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fa0/1 – 0/4</td>
<td>802.1q Trunks (Native VLAN 99)</td>
<td>172.17.99.0 /24</td>
</tr>
<tr>
<td>Fa0/6 – 0/10</td>
<td>VLAN 30 – Guest (Default)</td>
<td>172.17.30.0 /24</td>
</tr>
<tr>
<td>Fa0/11 – 0/17</td>
<td>VLAN 10 – Faculty/Staff</td>
<td>172.17.10.0 /24</td>
</tr>
<tr>
<td>Fa0/18 – 0/24</td>
<td>VLAN 20 – Students</td>
<td>172.17.20.0 /24</td>
</tr>
</tbody>
</table>

#### Switch 1

<table>
<thead>
<tr>
<th>Ports</th>
<th>Assignment</th>
<th>Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fa0/1 – 0/4</td>
<td>802.1q Trunks (Native VLAN 99)</td>
<td>172.17.99.0 /24</td>
</tr>
<tr>
<td>Fa0/5</td>
<td>802.1q Trunks</td>
<td>172.17.99.0 /24</td>
</tr>
</tbody>
</table>

#### Switch 3

<table>
<thead>
<tr>
<th>Ports</th>
<th>Assignment</th>
<th>Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fa0/1 – 0/4</td>
<td>802.1q Trunks (Native VLAN 99)</td>
<td>172.17.99.0 /24</td>
</tr>
</tbody>
</table>
Task 1: Prepare the Network

Step 1: Cable a network that is similar to the one in the topology diagram.

Step 2: Clear any existing configurations on the devices.

Step 3: Disable all ports using the `shutdown` command.

```console
S1(config)#interface range fa0/1-24
S1(config-if-range)#shutdown
S1(config-if-range)#interface range gi0/1-2
S1(config-if-range)#shutdown

S2(config)#interface range fa0/1-24
S2(config-if-range)#shutdown
S2(config-if-range)#interface range gi0/1-2
S2(config-if-range)#shutdown

S3(config)#interface range fa0/1-24
S3(config-if-range)#shutdown
S3(config-if-range)#interface range gi0/1-2
S3(config-if-range)#shutdown
```

Step 4: Re-enable the active user ports on S2 in access mode.

```console
S2(config)#interface fa0/6
S2(config-if)#switchport mode access
S2(config-if)#no shutdown
S2(config-if)#interface fa0/11
S2(config-if)#switchport mode access
S2(config-if)#no shutdown
S2(config-if)#interface fa0/18
S2(config-if)#switchport mode access
S2(config-if)#no shutdown
```

Task 2: Perform Basic Device Configurations

Configure the S1, S2, and S3 switches according to the following guidelines:

- Configure the hostname.
- Disable DNS lookup.
- Configure an EXEC mode password.
- Configure a message-of-the-day banner.
- Configure a password for console connections.
- Configure synchronous logging.
- Configure a password for vty connections.

```console
enable
configure terminal
no ip domain-lookup
enable secret class
banner motd ^CUnauthorized access strictly prohibited and prosecuted to the full extent of the law^C
```
Task 3: Configure and Activate Network Addresses

Step 1: Configure the Management VLAN interface and default gateway on S1, S2, and S3.

S1:
```
interface Vlan99
  ip address 172.17.99.11 255.255.255.0
  no shutdown
  exit
ip default-gateway 172.17.99.1
```

S2:
```
interface Vlan99
  ip address 172.17.99.12 255.255.255.0
  no shutdown
  exit
ip default-gateway 172.17.99.1
```

S3:
```
interface Vlan99
  ip address 172.17.99.13 255.255.255.0
  no shutdown
  exit
ip default-gateway 172.17.99.1
```

Step 2: Configure the PC1, PC2, and PC3 Ethernet interfaces.

Task 4: Configure VTP

Step 1: Configure S1 as the VTP server, with domain name cisco and password cisco.
```
vtp domain cisco
vtp password cisco
vtp mode server
```

Step 2: Configure S2 and S3 as VTP clients, with domain name and password.
```
S2:
```
vtp domain cisco
vtp password cisco
vtp mode client

S3:
vtp domain cisco
vtp password cisco
vtp mode client

**Step 3: Configure all trunks. All trunks should allow only traffic for VLANs 10, 20, 30, and 99.**

**S1:**
interface FastEthernet0/1
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!
interface FastEthernet0/2
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!
interface FastEthernet0/3
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!
interface FastEthernet0/4
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!
interface FastEthernet0/5
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!

**S2:**
interface FastEthernet0/1
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!
interface FastEthernet0/2
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!
interface FastEthernet0/3
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!
interface FastEthernet0/4
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!
S3:
interface FastEthernet0/1
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!
interface FastEthernet0/2
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!
interface FastEthernet0/3
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!
interface FastEthernet0/4
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
  no shutdown
!

Task 5: Configure VLANs

Step 1: Configure the VLANs on the VTP server. (Note: Remember to assign the appropriate ports to the VLANS as described in the Port Assignments table on page 2.)

Configure the VLANs in the table below on the VTP server.

<table>
<thead>
<tr>
<th>VLAN</th>
<th>VLAN Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLAN 99</td>
<td>management</td>
</tr>
<tr>
<td>VLAN 10</td>
<td>faculty-staff</td>
</tr>
<tr>
<td>VLAN 20</td>
<td>students</td>
</tr>
<tr>
<td>VLAN 30</td>
<td>guest</td>
</tr>
</tbody>
</table>

S1:
vlan 10
  name faculty-staff
! vlan 20  
   name students  
!
vlan 30  
   name guest  
!
vlan 99  
   Name management

S2:

S2(config)#interface range fa0/6-10
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 30
S2(config-if)#interface range fa0/11-17
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 10
S2(config-if)#interface range fa0/18-24
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 20

Step 2: Verify that the VTP clients are receiving VLAN configurations from the server.

S2:
S2#show vlan

<table>
<thead>
<tr>
<th>VLAN Name</th>
<th>Status</th>
<th>Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>default</td>
<td>active</td>
</tr>
<tr>
<td>10</td>
<td>VLAN0010</td>
<td>active</td>
</tr>
<tr>
<td>20</td>
<td>VLAN0020</td>
<td>active</td>
</tr>
<tr>
<td>30</td>
<td>VLAN0030</td>
<td>active</td>
</tr>
<tr>
<td>1002</td>
<td>fddi-default</td>
<td>act/unsup</td>
</tr>
<tr>
<td>1003</td>
<td>token-ring-default</td>
<td>act/unsup</td>
</tr>
<tr>
<td>1004</td>
<td>fddinet-default</td>
<td>act/unsup</td>
</tr>
<tr>
<td>1005</td>
<td>trnet-default</td>
<td>act/unsup</td>
</tr>
</tbody>
</table>

S3:
S3#show vlan

<table>
<thead>
<tr>
<th>VLAN Name</th>
<th>Status</th>
<th>Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>default</td>
<td>active</td>
</tr>
</tbody>
</table>

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Task 6: Configure STP

Step 1: Configure S1 to be the root for all VLANS.

spanning-tree vlan 10,20,30,99 root primary

Step 2: Configure RSTP.

S1:
spanning-tree mode rapid-pvst

S2:
spanning-tree mode rapid-pvst

S3:
spanning-tree mode rapid-pvst

Step 3: Verify that STP is running correctly.

S1:
S1#show spanning-tree summary
Switch is in rapid-pvst mode
Root bridge for: VLAN0010, VLAN0020, VLAN0030, VLAN0099
Configured Pathcost method used is short

<table>
<thead>
<tr>
<th>Name</th>
<th>Blocking</th>
<th>Listening</th>
<th>Learning</th>
<th>Forwarding</th>
<th>STP</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLAN0010</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>VLAN0020</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>VLAN0030</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>VLAN0099</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>4 vlans</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

S2:
S2#show spanning-tree summary
Switch is in rapid-pvst mode
Root bridge for: none
Configured Pathcost method used is short

<table>
<thead>
<tr>
<th>Name</th>
<th>Blocking</th>
<th>Listening</th>
<th>Learning</th>
<th>Forwarding</th>
<th>STP</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLAN0010</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>VLAN0020</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
VLAN0030 2 0 0 3 5
VLAN0099 2 0 0 3 5

4 vlans 8 0 0 12 20

**Task 7: Configure Inter-VLAN routing**

**Step 1: Create a basic configuration on the router.**

R1:
hostname R1
!
no ip domain lookup
!
interface FastEthernet0/0
  no ip address
  shutdown
!
interface FastEthernet0/1
  no ip address
  no shutdown
!
line con 0
  exec-timeout 5 0
  password cisco
  logging synchronous
line aux 0
line vty 0 4
  password cisco
  no login
!
end

**Step 2: Configure the trunking interface on R1.**

interface FastEthernet0/1
  no shutdown
!
interface FastEthernet0/1.10
encapsulation dot1Q 10
ip address 172.17.10.1 255.255.255.0
!
interface FastEthernet0/1.20
encapsulation dot1Q 20
ip address 172.17.20.1 255.255.255.0
!
interface FastEthernet0/1.30
encapsulation dot1Q 30
ip address 172.17.30.1 255.255.255.0
!
interface FastEthernet0/1.99
encapsulation dot1Q 99 native
ip address 172.17.99.1 255.255.255.0

Step 3: Verify Inter-VLAN routing.
Ping from each host to every other host.

PC1:
C:\ >ping 172.17.20.22

Pinging 172.17.20.22 with 32 bytes of data:
Reply from 172.17.20.22: bytes=32 time=1ms TTL=255
Reply from 172.17.20.22: bytes=32 time=2ms TTL=255
Reply from 172.17.20.22: bytes=32 time=1ms TTL=255
Reply from 172.17.20.22: bytes=32 time=1ms TTL=255

Ping statistics for 172.17.20.22:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms
C:\ >ping 172.17.30.23

Pinging 172.17.30.23 with 32 bytes of data:
Reply from 172.17.30.23: bytes=32 time=1ms TTL=255
Reply from 172.17.30.23: bytes=32 time=2ms TTL=255
Reply from 172.17.30.23: bytes=32 time=1ms TTL=255
Reply from 172.17.30.23: bytes=32 time=1ms TTL=255

Ping statistics for 172.17.30.23:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms

PC2:
C:\ >ping 172.17.10.21

Pinging 172.17.10.21 with 32 bytes of data:
Reply from 172.17.10.21: bytes=32 time=1ms TTL=255
Reply from 172.17.10.21: bytes=32 time=2ms TTL=255
Reply from 172.17.10.21: bytes=32 time=1ms TTL=255
Reply from 172.17.10.21: bytes=32 time=1ms TTL=255
Ping statistics for 172.17.10.21:
   Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
   Minimum = 1ms, Maximum = 2ms, Average = 1ms
C:\ >ping 172.17.30.23

Pinging 172.17.30.23 with 32 bytes of data:

Reply from 172.17.30.23: bytes=32 time=1ms TTL=255
Reply from 172.17.30.23: bytes=32 time=2ms TTL=255
Reply from 172.17.30.23: bytes=32 time=1ms TTL=255
Reply from 172.17.30.23: bytes=32 time=1ms TTL=255

Ping statistics for 172.17.30.23:
   Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
   Minimum = 1ms, Maximum = 2ms, Average = 1ms

PC3:
C:\ >ping 172.17.10.21

Pinging 172.17.10.21 with 32 bytes of data:

Reply from 172.17.10.21: bytes=32 time=1ms TTL=255
Reply from 172.17.10.21: bytes=32 time=2ms TTL=255
Reply from 172.17.10.21: bytes=32 time=1ms TTL=255
Reply from 172.17.10.21: bytes=32 time=1ms TTL=255

Ping statistics for 172.17.10.21:
   Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
   Minimum = 1ms, Maximum = 2ms, Average = 1ms
C:\ >ping 172.17.20.22

Pinging 172.17.20.22 with 32 bytes of data:

Reply from 172.17.20.22: bytes=32 time=1ms TTL=255
Reply from 172.17.20.22: bytes=32 time=2ms TTL=255
Reply from 172.17.20.22: bytes=32 time=1ms TTL=255
Reply from 172.17.20.22: bytes=32 time=1ms TTL=255

Ping statistics for 172.17.20.22:
   Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
   Minimum = 1ms, Maximum = 2ms, Average = 1ms

Task 8: Document the Configurations

On each device, issue the *show run* command and capture the configurations.

**S1:**
hostname S1
!
enable secret class
!
no ip domain-lookup
!
vtp domain cisco
vtp password cisco
vtp mode server
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
spanning-tree vlan 1-1000 priority 24576
!
vlan 10
  name faculty-staff
!
vlan 20
  name students
!
vlan 30
  name guest
!
vlan 99
  Name management
!
interface FastEthernet0/1
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface FastEthernet0/2
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface FastEthernet0/3
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface FastEthernet0/4
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface FastEthernet0/5
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface range FastEthernet0/6-24
  shutdown
!
interface GigabitEthernet0/1
  shutdown
!
interface GigabitEthernet0/2
  shutdown
!
interface Vlan1
no ip address
! shutdown
!
interface Vlan99
 ip address 172.17.99.11 255.255.255.0
 no shutdown
!
ip default-gateway 172.17.99.1
!
line con 0
 exec-timeout 5 0
 privilege level
 logging synchronous
 password cisco
 line vty 0 4
   password cisco
 no login
 line vty 5 15
   no login
!
end

S2:
hostname S2
!
enable secret class
!
no ip domain-lookup
!
vtp domain cisco
vtp password cisco
vtp mode client
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
!
vlan internal allocation policy ascending
!
interface FastEthernet0/1
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface FastEthernet0/2
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface FastEthernet0/3
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface FastEthernet0/4
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
switchport mode trunk
!
interface FastEthernet0/5
  shutdown
!
interface FastEthernet0/6
  switchport access vlan 30
  switchport mode access
!
interface FastEthernet0/7
  switchport access vlan 30
  switchport mode access
!
interface FastEthernet0/8
  switchport access vlan 30
  switchport mode access
!
interface FastEthernet0/9
  switchport access vlan 30
  switchport mode access
!
interface FastEthernet0/10
  switchport access vlan 30
  switchport mode access
!
interface FastEthernet0/11
  switchport access vlan 10
  switchport mode access
!
interface FastEthernet0/12
  switchport access vlan 10
  switchport mode access
!
interface FastEthernet0/13
  switchport access vlan 10
  switchport mode access
!
interface FastEthernet0/14
  switchport access vlan 10
  switchport mode access
!
interface FastEthernet0/15
  switchport access vlan 10
  switchport mode access
!
interface FastEthernet0/16
  switchport access vlan 10
  switchport mode access
!
interface FastEthernet0/17
  switchport access vlan 10
  switchport mode access
!
interface FastEthernet0/18
  switchport access vlan 20
  switchport mode access
! interface FastEthernet0/19
  switchport access vlan 20
  switchport mode access
!
interface FastEthernet0/20
  switchport access vlan 20
  switchport mode access
!
interface FastEthernet0/21
  switchport access vlan 20
  switchport mode access
!
interface FastEthernet0/22
  switchport access vlan 20
  switchport mode access
!
interface FastEthernet0/23
  switchport access vlan 20
  switchport mode access
!
interface FastEthernet0/24
  switchport access vlan 20
  switchport mode access
!
interface GigabitEthernet0/1
  shutdown
!
interface GigabitEthernet0/2
  shutdown
!
interface Vlan1
  no ip address
  shutdown
!
interface Vlan99
  ip address 172.17.99.12 255.255.255.0
  no shutdown
!
  ip default-gateway 172.17.99.1
!
  line con 0
    exec-timeout 5 0
    password cisco
    logging synchronous
  line vty 0 4
    password cisco
    no login
  line vty 5 15
    no login
!
end

S3:
hostname S3
!
enable secret class
!
no ip domain-lookup
!
vtp domain cisco
vtp password cisco
vtp mode client
!
spanning-tree mode rapid-pvst
spanning-tree extend system-id
!
vlan internal allocation policy ascending
!
interface FastEthernet0/1
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface FastEthernet0/2
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface FastEthernet0/3
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface FastEthernet0/4
  switchport trunk native vlan 99
  switchport trunk allowed vlan 10,20,30,99
  switchport mode trunk
!
interface range FastEthernet0/5-24
  shutdown
!
interface GigabitEthernet0/1
  shutdown
!
interface GigabitEthernet0/2
  shutdown
!
interface Vlan1
  no ip address
  shutdown
!
interface Vlan99
  ip address 172.17.99.13 255.255.255.0
  no shutdown
!
  ip default-gateway 172.17.99.1
!
line con 0
  exec-timeout 0 0
  password cisco
  logging synchronous
line vty 0 4
  password cisco
  no login
line vty 5 15
  no login
!
end

R1:
hostname R1
!
enable secret class
!
no ip domain lookup
!
interface FastEthernet0/0
  no ip address
  shutdown
!
interface FastEthernet0/1
  no ip address
  no shutdown
!
interface FastEthernet0/1.10
  encapsulation dot1Q 10
  ip address 172.17.10.1 255.255.255.0
!
interface FastEthernet0/1.20
  encapsulation dot1Q 20
  ip address 172.17.20.1 255.255.255.0
!
interface FastEthernet0/1.30
  encapsulation dot1Q 30
  ip address 172.17.30.1 255.255.255.0
!
interface FastEthernet0/1.99
  encapsulation dot1Q 99
  ip address 172.17.99.1 255.255.255.0
!
line con 0
  exec-timeout 5 0
  password cisco
  logging synchronous
line aux 0
line vty 0 4
  password cisco
  no login
!
end

Task 9: Clean Up

Erase the configurations and reload the routers. Disconnect and store the cabling. For PC hosts that are normally connected to other networks, such as the school LAN or to the Internet, reconnect the appropriate cabling and restore the TCP/IP settings.