Subnet mask

255.255.255.252 /30 ▼

255.255.240.0 /20
255.255.224.0 /19
255.255.192.0 /18
255.255.128.0 /17
255.255.0.0 /16
255.254.0.0 /15
255.252.0.0 /14
255.248.0.0 /13
255.240.0.0 /12
255.224.0.0 /11
255.192.0.0 /10
255.128.0.0 /9
255.0.0.0 /8
254.0.0.0 /7
252.0.0.0 /6
248.0.0.0 /5
240.0.0.0 /4
224.0.0.0 /3
192.0.0.0 /2
128.0.0.0 /1

255.255.255.128 /25 ▼

255.255.255.255 /32
255.255.255.254 /31
255.255.255.252 /30
255.255.255.248 /29
255.255.255.240 /28
255.255.255.224 /27
255.255.255.192 /26
255.255.255.128 /25
255.255.255.0 /24
255.255.254.0 /23
255.255.252.0 /22
255.255.248.0 /21
255.255.240.0 /20
255.255.224.0 /19
255.255.192.0 /18
255.255.128.0 /17
255.255.0.0 /16
255.254.0.0 /15
255.252.0.0 /14
255.248.0.0 /13

Chia thử 1 ví dụ

192.168.1.0 /24

Chia thành 2 xong rồi thành 4

192.168.1.0 **/25** → 192.168.1.127 **/25**	192.168.1.128 **/25** → 192.168.1.254 **/25**
192.168.1.0 **/26** → 192.168.1.63 **/26** 192.168.1.**64 /26** → 192.168.1.127 **/26**	192.168.1.128 **/26** → 192.168.1.191 **/26** 192.168.1.193 **/26** → 192.168.1.254 **/26**
	Bỏ 2 network ở giai đoạn cuối Bỏ network 192

Basic Switch Configuration

```
Switch# configure terminal
Switch(config)# hostname MidName

    S1(config)# exit
    S1#
```

Step 6: Secure access to the console line.

To secure access to the console line, access config-line mode a

```
    S1# configure terminal
    Enter configuration commands, one per line. I
    S1(config)# line console 0
    S1(config-line)# password eiu
    S1(config-line)# login
    S1(config-line)# exit
    S1(config)# exit
    %SYS-5-CONFIG_I: Configured from console by o
    S1#
```

Step 8:   Secure privileged mode access.

Set the **enable** password to **cisco**. This password protects access to privile

Note: The **0** in **cisco** is a zero, not a capital O. This password will not grade
it in Step 8.

```
S1> enable
S1# configure terminal
S1(config)# enable password cisco
S1(config)# exit
%SYS-5-CONFIG_I: Configured from console by console
S1#
```

Step 10: Configure an encrypted password to secure access to privileged mode.

The **enable password** should be replaced with the newer encrypted secret password using th
secret command. Set the enable secret password to **iteiu**.

```
S1# config t
S1(config)# enable secret iteiu
S1(config)# exit
S1#
```

Step 12: Encrypt the enable and console passwords.

As you noticed in Step 7, the **enable secret** password was encrypted
passwords were still in plain text. We will now encrypt these plain text
password-encryption command.

```
S1# config t
S1(config)# service password-encryption
S1(config)# exit
```

4. Configure a MOTD Banner

Configure a message of the day (MOTD) banner.

The Cisco IOS command set includes a feature that allows you to configure
onto the switch sees. These messages are called message of the day, or M
text in quotations or use a delimiter different from any character appearing in

```
S1# config t
S1(config)# banner motd "This is Switch Middle Name"
S1(config)# exit
%SYS-5-CONFIG_I: Configured from console by console
S1#
```

5. Save Configuration Files to NVRAM

Step 1: Verify that the configuration is accurate using the sl

Step 2: Save the configuration file.

You have completed the basic configuration of the switch. Now ba
NVRAM to ensure that the changes made are not lost if the syster

```
S1# copy running-config startup-config
Destination filename [startup-config]?[Enter]
Building configuration...
[OK]
```

Configure VLANS

```
S1(config)#vlan 10
S1(config-vlan)#name Faculty

S2(config)#int f0/1  (int rang f0/1-7)
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 10

S1(config-if)#int vlan 10
S1(config-if)#ip add 192.168.10.252 255.255.255.0
S1(config-if)# exit
S1(config)#ip default-gateway 192.168.10.1
```

Configure Trunks

```
S1(config-if)#int g0/1
S1(config-if)#switchport mode trunk
```

Configure Subinterfaces

```
Router(config)#int g0/0
Router(config-if)#no sh
Router(config-if)#int g0/0.10
Router(config-subif)#encapsulation dot1Q 10

Router(config-subif)#ip add 192.168.10.1 255.255.255.0
Router(config-subif)#no sh
```

DHCP

```
Router2(config)#ip dhcp pool Lan2
Router2(dhcp-config)#network 192.168.40.0 255.255.255.0
```

```
Router2(dhcp-config)#default-router 192.168.40.1
Router2(dhcp-config)#dns-server 192.168.50.2
Router2(dhcp-config)#exit
Router2(config)#ip dh
Router2(config)#ip dhcp excluded-address 192.168.40.1 192.168.40.20
```

Routing IPv6

Conf t → ipv6 unicast-routing → ipv6 route : ::/0 se0/0/0 (đường vào nội bộ)

Routing cho nó thì
Conf t → ipv6 unicast-routing → ipv6 router eigrp 1 → eigrp router-id 5.5.5.5 → int g0/0 →
ipv6 eigrp 1 (add cái đường vào eigrp 1)