

Lab 6.1 - Build a Network

Building the Network

Using the following list of network components, build and connect a network as illustrated in figure 1.

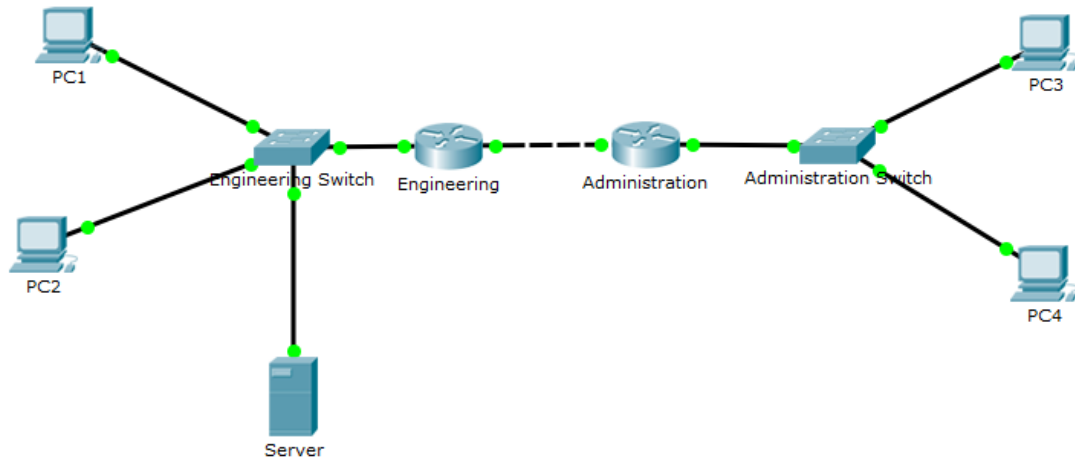


Figure 1: Network Topology

The network configuration consists of:

- 2 x Cisco 1841 Router
- 2 x Cisco 2960 Switch
- 4 x PC's
- 1 x Server

Place each of the network components within the packet tracer work space.

Each of the devices are to be connected with the *copper straight through* cables with the exception of the routers which requires a *copper cross-over* cable.

■ The cable used to connect the two routers is different, why is this the case?

Configure the Network

Securing the Network

After constructing your network topology, you need to secure connectivity before carrying out any configuration. Using the passwords in Table 1, restrict access to the routers using an encrypted password.

Table 1: Password Configuration

Devices	Access	Password
Engineering Router Administration Router	Console	console1
	Privileged Mode (Encrypted)	enable1

What is the command to configure the Message of the Day (MOTD)?

Using the command identified, set the MOTD to:

“WARNING – NOT AUNAUTHORIZED ACCESS ALLOWED”

Configure the Interfaces

Device	Interface	IP	Subnet	Default Gateway
Engineering Router	FA 0/0	192.168.1.1	255.255.255.0	
	FA 0/1	192.168.2.1	255.255.255.0	
Administration Router	FA 0/0	192.168.2.2	255.255.255.0	
	FA 0/1	192.168.3.1	255.255.255.0	
PC 1		192.168.1.2	255.255.255.0	192.168.1.1
PC 2		192.168.1.3	255.255.255.0	192.168.1.1
Server		192.168.1.4	255.255.255.0	192.168.1.1
PC 3		192.168.3.3	255.255.255.0	192.168.3.1
PC 4		192.168.3.2	255.255.255.0	192.168.3.1

Starting in configuration mode, use the following commands to configure the FA 0/0 interface on the Engineering Router.

- interface FA 0/0
- ip address 192.168.1.1 255.255.255.0
- no shut
- exit

Repeat these steps for each of the remaining router interfaces

What is the purpose of the “no shut” command in the configuration guidelines listed above?

How many networks are in this topology?

The network address scheme is considered wasteful, why is this?

The switch is not configured with an IP address, why is this?

Router RIP

Why can't a computer in Engineering ping a computer in Administration?

What is the purpose of RIP?

Starting in configuration mode, use the following commands to enable and configure RIP for the Engineering Router:

- router rip
- network 192.168.1.0
- network 192.168.2.0

Using the above commands as an example, repeat the process on the administration router.

Remember! You only need to advertise networks which are directly connected.

Using a command, identify the routes which are known to the router to each of the routers.

What is the difference between routing table entries which begin with “C” and “R”?

There are two versions of RIP, V1 and V2 – What is the difference between these?

■ Identify the command enable RIP V2

■ What is the purpose of the “default-information originate” command? Where would this be useful?

■ Calculate an alternative non wasteful addressing scheme for the network

