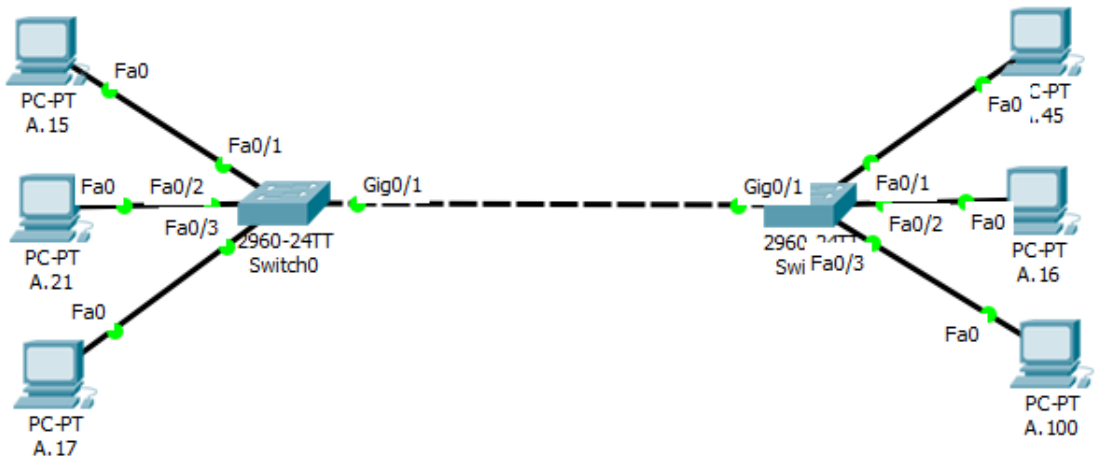
Assignment 4-1: Finish Initial Configuration

Name: _____

Objective

In this lab, we demonstrate the steps an administrator would take to complete an initial configuration for a switch or router. The steps in this lab could be complete remotely from anywhere on the network – you would not need a console cable but could use one if it made sense in your environment. Like the last exercise, these steps should become an automatic part of your initial setup session so that they don't get forgotten. We will be adding the rest of the steps to establish basic device security or Steps 7-9 of the **Basic Cisco Configuration Steps** covered in the last exercise and on the **File 3-3x** handout.

Lab Topology to Start



Task 1 – Getting Started

This topology assumes that you successfully completed and saved the last exercise as ***yourname*4-3-3**. If for any reason you do not have that you can download Class4-1-1.

Open your Packet Tracer file ***yourname*3-3-3.pkt** either by double-clicking on the file or using File | Open from the Packet Tracer menu. Otherwise, download **Class4-1-1**.

Immediately save your open file as ***yourname*4-1-1**.

Task 2 – Cleanup our topology diagram

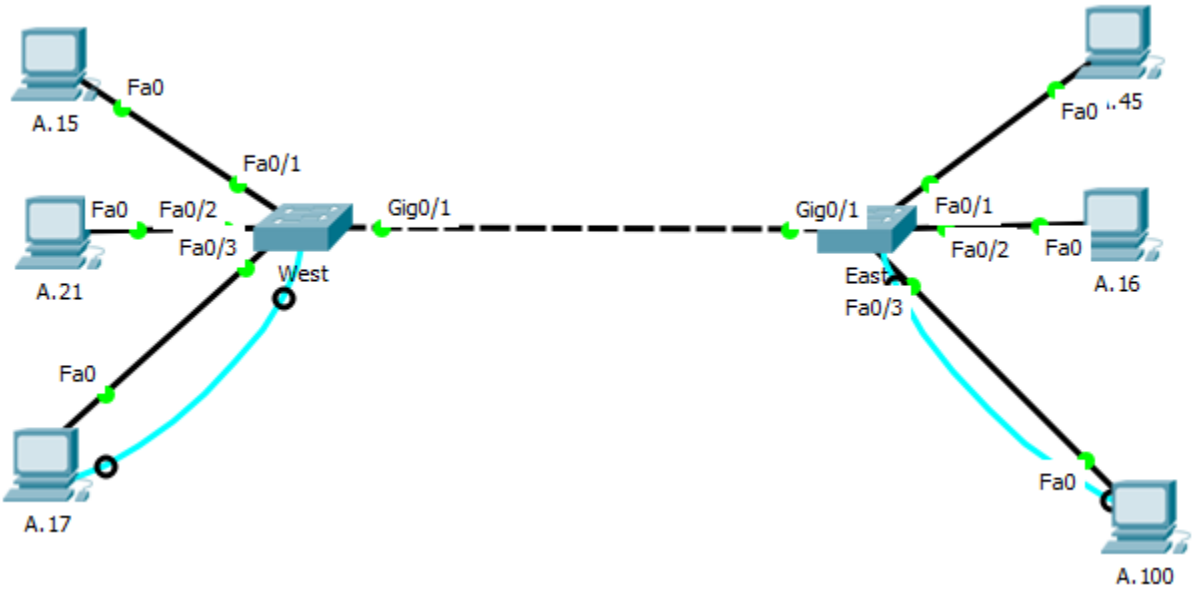
To clean up our topology image a bit, use **Options | Preferences** from the menu and remove the check from **Show Device Model Labels** and close the **Preferences** window.

Click on the right-side switch, the one we named East, and then on the **Config** tab. Change the **Display Name** to the same as the **Hostname** (East). Don't worry if one of your interface IDs obliterates part of the name.

Do the same with the West switch.

You can experiment with moving devices to get fewer label overlaps – if you want.

Your new cleaned up topology might look like this. The shape is not important.



Task 3 – Start a Telnet session

From host A.15, use the Desktop | Command Prompt and Telnet to East. Remember that you will be prompted for two passwords

Packet Tracer PC Command Line 1.0

```
C:\>telnet 10.0.0.2
Trying 10.0.0.2 ...Open

User Access Verification

Password:      (ischool)
East>en
Password:      (info341)
East#
```

Task 4 – Creating a Login Banner

A banner is a warning message the user sees when logging into a Cisco device. No login, no banner.

Message of the Day (MOTD): This logon message originally displayed a temporary notice to users, such as planned maintenance windows, etc. But since this message appears before login, most administrators now use it to display legal notices regarding access to the device.

Return to Global Configuration mode with configure terminal (config t). In each case, the # is our choice of a “code” to tell the IOS that we are finished with our message. It could be any symbol that doesn’t appear in your message, such as @.

Use the following steps: **banner MOTD #** and press **[Enter]**, and then type **[Enter] This is an example of a Message of the Day! #** and press **[Enter]**.

Note the red [Enter] at the start of the message creates a blank line before the message – separating it from any system messages. You could use two or more for more separation. The same trick could be used before your message ending # for blank rows following.

The result might look like the following.

```
East#config t
East(config)#banner motd #
Enter TEXT message.  End with the character '#'.

This is an example of a Message of the Day! #

East(config)#^Z
East#exit

[Connection to 10.0.0.2 closed by foreign host]
C:\>telnet 10.0.0.2
Trying 10.0.0.2 ...Open

This is an example of a Message of the Day!

User Access Verification

Password:
```

Note that our example is very simple to show where banners appear, but banners are an important part of the configuration, providing the warning to possible unauthorized persons. Here is an example of what a MOTD might look like.

```
banner motd #

---------------Warning!--------------------

Terms of Use

Any or all uses of our server systems, network equipment and all
traffic on this network may be intercepted, monitored, recorded,
copied, audited, inspected, and disclosed to authorized site and
law enforcement personnel. By logging into this network service,
the user consents to such interception, monitoring, recording,
copying, auditing, inspection, and disclosure at the discretion
of authorized site personnel.

Unauthorized or improper use of our servers or network or systems
within the network, may result in administrative disciplinary
action and civil and criminal penalties.

By logging on to this network, you indicate your awareness of
and consent to these terms and conditions of use.

For assistance, contact Network Security at 555-1212.
#
```

Task 5 – Securing Unencrypted Password

Do a **show run** command and note not only is the **enable password** unencrypted but so are the passwords we set for our Console (CON) and Virtual (VTY) connections.

Note also where your MOTD banner occurs.

```
East>en
Password:
East#show run
Building configuration...

Current configuration: 1293 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname East
!
enable secret 5 $1$mERr$gzv89F7IwFptX3urMu3zV/
enable password junk
!
~~Some lines omitted~~
!
interface GigabitEthernet0/2
!
interface Vlan1
 ip address 10.0.0.2 255.255.255.0
!
banner motd ^C

This is an example of a Message of the Day! ^C
!
line con 0
 password ischool
 login
 history size 20
!
line vty 0 4
 password ischool
 login
line vty 5 15
 password ischool
 login
!
end

East#
```

It is possible to force all unencrypted passwords to be encrypted. This is often one of the final steps after testing and making sure that you are sure that you remember all passwords. Note that no command will reverse this process.

In Global Configuration mode (config t), type **service password-encryption** and press **[Enter]**.

Exit back to the Privileged mode using **[Ctrl]+z** and do another **show run** to see the results.

Task 6 – Testing Your Work

Exit out of the router.

Press enter to reconnect to the router – you should see your banner and be prompted for a password. If you like, try something other than **ischool** or change the capitalization. You will see that Cisco not at all tolerant.

Finish logging in.

Task 7 – Some useful code to consider adding

While not required the following bits of configuration can make working with Cisco devices less frustrating and repetitive.

Spelling errors

You may have already discovered that if you misspell a command the device pauses (it seems forever) and displays some message about a domain server – see below. It is asking any DNS servers if they know that word as the device name. When none answers you eventually get the % Unknown command… message.

```
East#homf
Translating "homf"...domain server (255.255.255.255)
% Unknown command or computer name, or unable to find computer
     address
East#
```

The **no ip domain lookup** command will prevent IOS from attempting to convert any spelling mistakes you make into domain names. You could skip this step if you're a perfect typist, I suppose or very patient.

Make the following entries and re-enter the mistake. You will still get the error message but no DNS search and no wait.

```
East#conf t
East(config)#no ip domain lookup
East(config)#exit
East#homf
Translating "homf"
% Unknown command or computer name, or unable to find computer
     address
East#
```

Syslog (system) messages

You may have noticed the device issues system messages from time to time (Interface UP, etc.). Invariably right in the middle of typing a new command or output that you want to capture.

The **no logging console** command will prevent IOS from outputting Syslog messages to the console as you're working.

```
East#conf t
Enter configuration commands, one per line. End with CNTL/Z.
East(config)#no logging console
East(config)#^Z
East#
```

Session keeps timing out

Requiring you to login over and over. By default, Cisco devices close remote sessions (CON and VTY) after 10 minutes of inactivity. This is a simple security feature, but it can be very irritating particularly for students doing labs who are often pausing to think, read instructions, discuss results with peers.

The **exec-timeout 10 0** command issued on the CON or VTY interfaces will set the timeout to 10 minutes 0 seconds (the default). If only one number is entered, it will be minutes. The range of numbers that can be used is 0 to 525600 (1 year???). **no exec-timeout** will restore the default.

Setting the value to 0 minutes disables the timeout feature. While frequently done in labs or even device setup in the outside world, it can leave a device vulnerable if you forget to reset it when you are done.

The CON and VTY interfaces must be set separately and in the real world might warrant different values – different levels of exposure.

Now you can begin the actual setup. You should still be in privileged EXEC mode (if not, enter the enable command), and start terminal configuration mode by entering

Try these commands to set both remote connections. Change the numbers if you like,

```
East#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
East(config)#line con 0
East(config-line)#exec-timeout 30
East(config-line)#line vty 0 15
East(config-line)#exec-timeout 30
East(config-line)#^Z
East#
```

Do a **show run** to see your handiwork. A sample is at the end of this exercise.

Task 8 - Saving Our Work

Since we changed the running-config immediately with many of these commands, we need to again save it to the **Startup-config** so we don't lose it on the device. Not the same as saving our Packet Tracer file.

In the Privileged mode, type **copy run start** (copy running-config startup-config) (copy run start) and press enter.

Do a **show start** (show startup-config) and see that it is there now.

Save your Packet Tracer file using the name *Yourname*4-1-2.

Challenge

Use the skills from this exercise to configure the West switch.

- Experiment with (change) the banner MOTD if you like.
- Try different timeout values if you like. Think about how long, why, and what are the risks that you introduce.
- Save your switch configuration.
- Save your Packet Tracer file again using the name *Yourname*4-1-3.

Bob's East Configuration

```
East#sho run
Current configuration: 1427 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname East
!
no logging console
enable secret 5 $1$mERr$gzv89F7IwFptX3urMu3zV/
enable password 7 082B594002
!
no ip domain-lookup
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
!
~~ Some untouched lines omitted~~
!
interface GigabitEthernet0/2
!
interface Vlan1
 ip address 10.0.0.2 255.255.255.0
!
banner motd ^C

This is an example of a Message of the Day! ^C
!
line con 0
 password 7 08285F4D01160A1B
 login
 history size 20
 exec-timeout 30 0
!
line vty 0 4
 exec-timeout 30 0
 password 7 08285F4D01160A1B
 login
line vty 5 15
 exec-timeout 30 0
 password 7 08285F4D01160A1B
 login
end
East#
```