

IOS Detection

Objective

Manage IOS system image files to increase network reliability in a small- to medium-sized business network.

Scenario

Your school or university has just received a donation of Cisco routers and switches. You transport them from your shipping and receiving department to your Cisco networking lab and start sorting them into switch and router groups.

After all the equipment has been sorted, you cannot wait to turn them on to see if they really work. Once you do power them up, you find out that all of the equipment operating systems have been erased! Because computers use different operating systems, you think that routers and switches also use different internetworking operating systems (or IOS) as well.

One good thing you notice is that most of the routers are either models 1941 or 2911. The switch models are either 2960 or 3560. You have worked with this type of equipment in the past and know you can research which IOS is appropriate to purchase for each model. You also know that documenting hardware features, serial numbers, and MAC addresses is very important to do whenever you add networking equipment to any network topology.

Refer to the accompanying PDF for directions on how to proceed with this modeling activity. Save your work and share the data you found with another group or the entire class.

Resources

- Packet Tracer software
- Internet connectivity

Directions

Step 1: Create a switch and router matrix for documenting hardware and software information.

- a. Design a matrix to record information about your two router models, 1941 and 2911. Both models are included in your Packet Tracer software. Record the following information in your matrix:
 - 1) The system serial numbers of the equipment
 - 2) The Cisco IOS type and version shown for each model
 - 3) The name of the preferred system image file
 - 4) How much NVRAM is present on the routers
 - 5) How many and which types of interfaces are built in to the routers
- b. Design a matrix to record information about your two switch models, 2960 and 3560, from Packet Tracer. Record the following information in your matrix:
 - 1) The system serial number for this type of equipment
 - 2) The Cisco IOS type and version shown for these models
 - 3) The name of the preferred SW image
 - 4) How much NVRAM is present on the models

- 5) How many and which types of interfaces are built in to the switches

Step 2: Open Packet Tracer.

- a. Place one router and switch for each router and switch model you will research on the desktop.
- b. Open the router or switch models on Packet Tracer and use the **show version** command to display operating system and other information about your equipment.
- c. Read and record the information found in Step 2b to your matrix designs.

Step 3: Visit <http://www.cisco.com> for further model research content.

- a. Sign in to your account at cisco.com. If you do not have an account, create one.
- b. Research your router and switch models for additional feature sets available for the models.
- c. Note the physical hardware designs of the devices. Check if additional network cards can be installed; if so, record what types of cards can be installed for your router and switch models.
- d. Mention some of these facts below in your two matrix designs.

Step 4: Document the information you found to share with the class or another group of students.