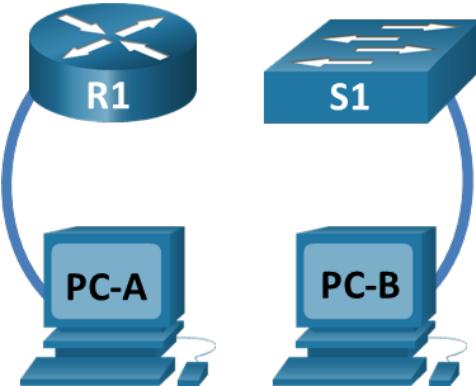


Lab - Initialize and Reload a Router and Switch (**Instructor Version**)

Instructor Note: Red font color or gray highlights indicate text that appears in the instructor copy only.

Topology



Objectives

Part 1: Set Up Devices in the Network as Shown in the Topology

Part 2: Initialize the Router and Reload

Part 3: Initialize the Switch and Reload

Background / Scenario

Before starting a CCNA hands-on lab that makes use of either a Cisco router or switch, ensure that the devices in use have been erased and have no startup configurations present. Otherwise, the results of your lab may be unpredictable. This lab provides a detail procedure for initializing and reloading a Cisco router and a Cisco switch.

Note: The routers used with CCNA hands-on labs are Cisco 4221 with Cisco IOS XE Release 16.9.3 (universalk9 image). The switches used in the labs are Cisco Catalyst 2960 with Cisco IOS Release 15.0(2) (lanbasek9 image). Other routers, switches, and Cisco IOS versions can be used. Depending on the model and Cisco IOS version, the commands available and the output produced might vary from what is shown in the labs. Refer to the Router Interface Summary Table at the end of the lab for the correct interface identifiers.

Instructor Note: Refer to the Instructor Lab Manual for the procedures to initialize and reload devices.

Required Resources

- 1 Router (Cisco 4221 with Cisco IOS XE Release 16.9.3 universal image or comparable)
- 1 Switch (Cisco 2960 with Cisco IOS Release 15.0(2) lanbasek9 image or comparable)
- 2 PCs (Windows with terminal emulation program, such as Tera Term)
- Console cables to configure the Cisco IOS devices via the console ports

Instructions

Part 1: Set Up Devices in the Network as Shown in the Topology

Step 1: Cable the network as shown in the topology.

Attach console cables to the devices shown in the topology diagram.

Step 2: Power on all the devices in the topology.

Wait for all devices to finish the software load process before moving to Part 2.

Part 2: Initialize the Router and Reload

Step 1: Connect to the router.

Console into the router and enter privileged EXEC mode using the **enable** command.

```
Router> enable  
Router#
```

Step 2: Erase the startup configuration file from NVRAM.

Type the **erase startup-config** command to remove the startup configuration from nonvolatile random-access memory (NVRAM).

```
Router# erase startup-config  
Erasing the nvram filesystem will remove all configuration files! Continue?  
[confirm]  
[OK]  
Erase of nvram: complete  
Router#
```

Step 3: Reload the router.

Issue the **reload** command to remove an old configuration from memory. When prompted to Proceed with reload, press Enter to confirm the reload. Pressing any other key will abort the reload.

```
Router# reload  
Proceed with reload? [confirm]  
  
*Nov 29 18:28:09.923: %SYS-5-RELOAD: Reload requested by console. Reload  
Reason: Reload Command.  
  
Note: You may receive a prompt to save the running configuration prior to reloading the router. Respond  
by typing no and press Enter.  
  
System configuration has been modified. Save? [yes/no]: no
```

Step 4: Bypass the initial configuration dialog.

After the router reloads, you are prompted to enter the initial configuration dialog. Enter no and press Enter.

```
Would you like to enter the initial configuration dialog? [yes/no]: no
```

Step 5: Terminate the autoinstall program.

You will be prompted to terminate the autoinstall program. Respond yes and then press Enter.

```
Would you like to terminate autoinstall? [yes]: yes  
Router>
```

Part 3: Initialize the Switch and Reload

Step 1: Connect to the switch.

Console into the switch and enter privileged EXEC mode.

```
Switch> enable  
Switch#
```

Step 2: Determine if there have been any virtual local-area networks (VLANs) created.

Use the **show flash** command to determine if any VLANs have been created on the switch.

```
Switch# show flash  
  
Directory of flash:/  
  
2 -rwx 1919 Mar 1 1993 00:06:33 +00:00 private-config.text  
3 -rwx 1632 Mar 1 1993 00:06:33 +00:00 config.text  
4 -rwx 13336 Mar 1 1993 00:06:33 +00:00 multiple-fs  
5 -rwx 11607161 Mar 1 1993 02:37:06 +00:00 c2960-lanbasek9-mz.150-2.SE.bin  
6 -rwx 616 Mar 1 1993 00:07:13 +00:00 vlan.dat  
  
32514048 bytes total (20886528 bytes free)  
Switch#
```

Step 3: Delete the VLAN file.

- If the **vlan.dat** file was found in flash, then delete this file.

```
Switch# delete vlan.dat  
Delete filename [vlan.dat]?
```

You will be prompted to verify the file name. At this point, you can change the file name or just press Enter if you have entered the name correctly.

- When you are prompted to delete this file, press Enter to confirm the deletion. (Pressing any other key will abort the deletion.)

```
Delete flash:/vlan.dat? [confirm]  
Switch#
```

Step 4: Erase the startup configuration file.

Use the **erase startup-config** command to erase the startup configuration file from NVRAM. When you are prompted to remove the configuration file, press Enter to confirm the erase. (Pressing any other key will abort the operation.)

```
Switch# erase startup-config  
Erasing the nvram filesystem will remove all configuration files! Continue?  
[confirm]  
[OK]  
Erase of nvram: complete  
Switch#
```

Step 5: Reload the switch.

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Reload the switch to remove any old configuration information from memory. When you are prompted to reload the switch, press Enter to proceed with the reload. (Pressing any other key will abort the reload.)

```
Switch# reload
```

```
Proceed with reload? [confirm]
```

Note: You may receive a prompt to save the running configuration prior to reloading the switch. Type no and press Enter.

```
System configuration has been modified. Save? [yes/no]: no
```

Step 6: Bypass the initial configuration dialog.

After the switch reloads, you should see a prompt to enter the initial configuration dialog. Type no at the prompt and press Enter.

```
Would you like to enter the initial configuration dialog? [yes/no]: no
```

```
Switch>
```

Reflection Questions

1. Why is it necessary to erase the startup configuration before reloading the router?

Type your answers here.

The startup configuration file is loaded into memory and becomes the running-config after the router reloads. Erasing this file allows the router to return to its basic configuration after a reload.

2. You find a couple configurations issues after saving the running configuration to the startup configuration, so you make the necessary changes to fix those issues. If you were to reload the device now, what configuration would be restored to the device after the reload?

Type your answers here.

The configuration at the time of the last save is restored to the device after a reload. Any changes made to the running configuration after the last save would be lost.

Router Interface Summary Table

Router Model	Ethernet Interface #1	Ethernet Interface #2	Serial Interface #1	Serial Interface #2
1800	Fast Ethernet 0/0 (F0/0)	Fast Ethernet 0/1 (F0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
1900	Gigabit Ethernet 0/0 (G0/0)	Gigabit Ethernet 0/1 (G0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
2801	Fast Ethernet 0/0 (F0/0)	Fast Ethernet 0/1 (F0/1)	Serial 0/1/0 (S0/1/0)	Serial 0/1/1 (S0/1/1)
2811	Fast Ethernet 0/0 (F0/0)	Fast Ethernet 0/1 (F0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
2900	Gigabit Ethernet 0/0 (G0/0)	Gigabit Ethernet 0/1 (G0/1)	Serial 0/0/0 (S0/0/0)	Serial 0/0/1 (S0/0/1)
4221	Gigabit Ethernet 0/0/0 (G0/0/0)	Gigabit Ethernet 0/0/1 (G0/0/1)	Serial 0/1/0 (S0/1/0)	Serial 0/1/1 (S0/1/1)
4300	Gigabit Ethernet 0/0/0 (G0/0/0)	Gigabit Ethernet 0/0/1 (G0/0/1)	Serial 0/1/0 (S0/1/0)	Serial 0/1/1 (S0/1/1)

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Note: To find out how the router is configured, look at the interfaces to identify the type of router and how many interfaces the router has. There is no way to effectively list all the combinations of configurations for each router class. This table includes identifiers for the possible combinations of Ethernet and Serial interfaces in the device. The table does not include any other type of interface, even though a specific router may contain one. An example of this might be an ISDN BRI interface. The string in parenthesis is the legal abbreviation that can be used in Cisco IOS commands to represent the interface.