Packet Tracer - Compare In-Band and Out-of-Band Management Access

# Addressing Table

| Device | Interface | IP Address | | Subnet Mask |
| --- | --- | --- | --- | --- |
| East | G0/0/0 | 209.165.200.226 | | 255.255.255.224 |
| East | G0/0/1 | 192.168.1.1 | | 255.255.255.0 |
| West | G0/0/1 | 64.100.1.1 | 255.255.255.0 | |
| PC | NIC | DHCP | | |

# Objectives

In this activity, you will complete the following objectives.

* Establish an out-of-band connection.
* Establish an in-band connection.

**Note**: This activity opens in Physical mode. You will see a representation of the devices in an equipment rack. The PC is on a table next to the rack. You can switch to Simulation mode by clicking the button in the blue bar at the top.

# Instructions

## Establish an Out-of-Band Connection

Out-of-band connections are typically used for local access to the device. No IP addressing is required. The network technician has physical access to the device and can connect a cable to either the console or USB port between the device and a PC or laptop. The technician can then use terminal emulation software to connect to the command line interface.

In this part, you will use the console ports to connect to a router and a switch. Then you will use the USB port to connect to another router.

### Connect the console cable.

* + - 1. Using the device selection box, select the **Console** cable to connect the PC to the console port of the **Router**.
      2. Click the **Router**. Select **Console** in the pop-up menu.
      3. Locate the **PC** on the table. You will need to scroll down and to the right of the Rack to locate it.
      4. Click the **PC**. Select **RS-232** in the pop-up menu. You should now see a blue console cable connected to the correct port on the **Router** and the **PC**.

### Access the router.

* + - 1. Click **PC**.
      2. Click the **Desktop** tab. Click **Terminal**.
      3. Review the **Terminal Configuration** settings. These are the correct console settings for accessing a Cisco device using a console connection. Click **OK** to access the **Router**.
      4. At this point, there is no output because the router is powered off. Close the **Terminal**.

**Note**: With physical equipment, you will not need to reopen the terminal when powering on devices or move the console cable to a different device.

* + - 1. To power up the **Router**, click the **Router**. Power up the **Router**. Navigate to the **Physical** tab. Click the **Power** switch. Zoom in as necessary to locate the power switch.
      2. Connect to the **Router** again using the **Terminal** on the PC. You will see the router output. Enter **n** to skip the initial configuration dialog. Press **Enter** to start configuration.

#### Question:

What is the prompt?

A picture containing shape

Description automatically generated

* + - 1. Close the terminal window when done.
      2. Disconnect the console cable from the PC and the router when finished. Click **Delete** on the toolbar at the top and click one end of the console cable to disconnect the console cable. Click **Delete** again to de-select the tool.

### Access the switch.

You can also connect to the switch for configuration via the console port.

* + - 1. Connect a console cable from the **Switch** to the **PC** using the same procedure as the previous step.
      2. On the PC, navigate to the **Terminal**. Press **Enter** to see the prompt.

#### Question:

What is the prompt?

Type your answers here.

* + - 1. Close the terminal window when done.
      2. Disconnect the console cable from the PC and switch when finished.

### Access East via a USB console connection.

For some of the newer routers, you can also connect to the router via the USB console port from the USB port on a PC.

* + - 1. Using the device selection box, select the **USB** cable to connect the PC to the USB console port of the router **East**.
      2. Click **East**. Select **USB Console** in the pop-up menu.
      3. Click the **PC**. Select **USB0** in the pop-up menu.
      4. Click the **PC**. Click the **Desktop** tab. Click **Terminal**. Click **OK** to access the router **East**.
      5. Press **Enter** a few times to see the output.

## Establish an In-Band Connection

In-band connections are established across an existing network connection between the laptop or PC and the device you wish to access. For this type of connection, an IP address is required. However, you do not need to use terminal emulation software. You can simply use the command line on any device that can access to the remote device using IP addressing. In this part, you will access the routers **East** and **West** via an in-band connection.

The routers **East** and **West** are configured with a local username **admin** with the password **class** for SSH access.

### Use the existing East console connection to establish an in-band connection to the West router.

* + - 1. At the prompt of the router **East**, enter the command **ssh -l admin 64.100.1.1**. Enter the password **class** when prompted.

East> **ssh -l admin 64.100.1.1**

Password:

#### Question:

What is prompt after accessing the router successfully via SSH?

Type your answers here.

* + - 1. Close the **Terminal** when finished.

### From the PC, establish an in-band connection to the East router.

* + - 1. Click the **PC**. Then select **Command Prompt**.
      2. Enter the SSH command to access the router **East**.

#### Questions:

What command did you use to access the router **East**?

Type your answers here.

What is prompt after accessing the router successfully via SSH?

Type your answers here.

* + - 1. At the prompt, enter **exit** to exit the SSH session.

# Answer Key

## Establish an Out-of-Band Connection

### Connect the console cable.

### Access the router.

What is the prompt?

Router>

### Access the switch.

What is the prompt?

Switch>

### Access East via a USB console connection.

## Establish an In-Band Connection

### Use the existing East console connection to establish an in-band connection to the West router.

What is prompt after accessing the router successfully via SSH?

West#

### From the PC, establish an in-band connection to the East router.

What command did you use to access the router **East**?

C:\> ssh -l admin 192.168.1.1 or

C:\> ssh -l admin 209.165.200.226

What is prompt after accessing the router successfully via SSH?

East#

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