



## Lab 5.3.5 Configure Ethernet/FastEthernet Interface

Estimated Time: 15 minutes

Number of Team Members: Students will work in teams of two.

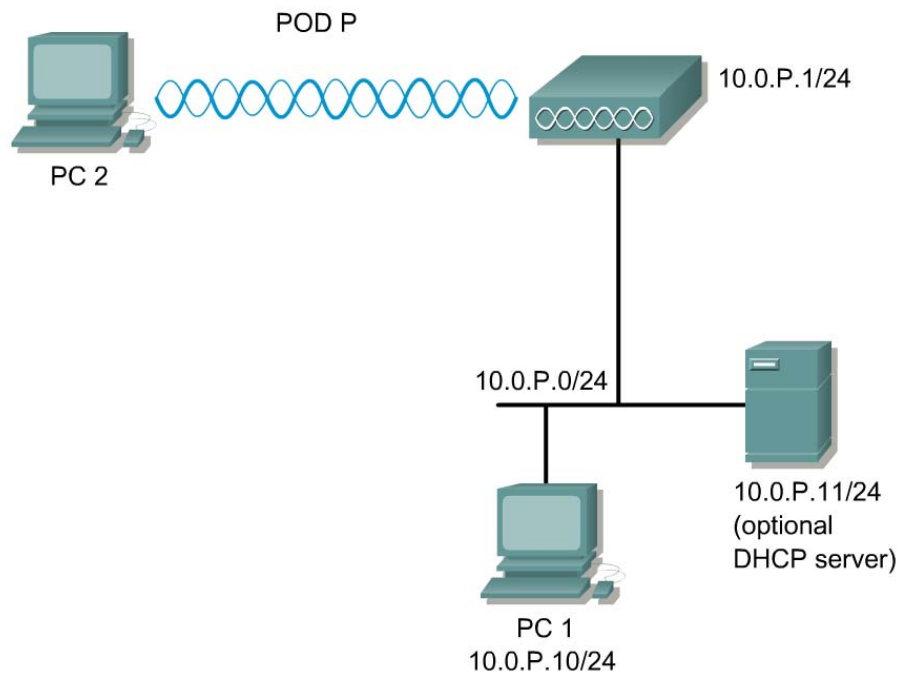
### Objective

In this lab, the student will use the AP setting pages to enter speed and duplex information for the AP.

### Scenario

This section describes how to configure the AP radio Ethernet and FastEthernet interfaces to lock in speed and duplex settings.

### Topology



## Preparation

Below are the basic settings to be applied to the AP.

<u>Team</u>	<u>AP Name</u>	<u>SSID</u>	<u>Address</u>
1	Pod1	AP1	10.0.1.1/24
2	Pod2	AP2	10.0.2.1/24

## Tools and Resources

- One Cisco 1200 AP
- PCs with properly installed Cisco wireless client adapters and utility.
- Several PCs on the wired network that can maintain connectivity to the configuration management pages on the AP.

## Step 1 Obtaining and Assigning an IP Address

HOME

EXPRESS SET-UP

NETWORK MAP +

ASSOCIATION

NETWORK INTERFACES +

SECURITY +

SERVICES +

WIRELESS SERVICES +

SYSTEM SOFTWARE +

EVENT LOG +

Cisco 1200 Access Point

Hostname apap uptime is 11 minutes

Home: Summary Status

Association

Clients: 0Repeaters: 0

Network Identity

IP Address10.0.0.1

MAC Address000b.46b8.ca90

Network Interfaces

Interface	MAC Address	Transmission Rate
FastEthernet	000b.46b8.ca90	100Mb/s
Radio0-802.11B	0007.85b3.646f	11.0Mb/s
Radio1-802.11A	000a.f4f3.4c8d	54.0Mb/s

Event Log

Time	Severity	Description
Mar 1 00:11:22.632	◆Notification	Configured from console by console
Mar 1 00:09:56.616	◆Warning	Duplicate address 10.0.0.1 on BVI1, sourced by 0006.5bb8.54f5
Mar 1 00:07:25.197	◆Notification	Line protocol on Interface FastEthernet0, changed state to up
Mar 1 00:00:20.258	◆Notification	Line protocol on Interface Dot11Radio1, changed state to up
Mar 1 00:00:19.263	◆Error	Interface Dot11Radio1, changed state to up
Mar 1 00:00:19.257	◆Information	Interface Dot11Radio1, frequency 5280 selected
Mar 1 00:00:15.257	◆Notification	Line protocol on Interface Dot11Radio0, changed state to up
Mar 1 00:00:15.197	◆Notification	Line protocol on Interface FastEthernet0, changed state to down
Mar 1 00:00:14.276	◆Error	Interface Dot11Radio0, changed state to up
Mar 1 00:00:14.256	◆Information	Interface Dot11Radio0, frequency 2452 selected

Refresh

- If needed, console into the AP and configure the BVI IP address to 10.0.P.1/24. Set the hostname as well according to the Preparation table. Make sure the wired PC TCP/IP

settings are configured according to the Topology. A wireless connection to the AP can also be used.

1. Record the configuration commands below needed for Step1a.

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- b. Open up a browser on PC1 and browse to the AP's **Home** page

## Step 2 Express Setup page

HOME

EXPRESS SET-UP

NETWORK MAP

ASSOCIATION

NETWORK INTERFACES

SECURITY

SERVICES

WIRELESS SERVICES

SYSTEM SOFTWARE

EVENT LOG

Cisco 1200 Access Point

Hostname Pod1

Pod1 uptime is 19 minutes

Express Set-Up

System Name:

Pod1

MAC Address:

000b.46b8.ca90

Configuration Server Protocol:

☐ DHCP ☒ Static IP

IP Address:

10.0.1.1

IP Subnet Mask:

255.255.255.0

Default Gateway:

10.0.1.254

SNMP Community:

defaultCommunity

☒ Read-Only ☐ Read-Write

Radio0-802.11B

SSID:

AP1

Broadcast SSID in Beacon:

☐ Yes ☒ No

Role in Radio Network:

☒ Access Point Root ☐ Repeater Non-Root

Optimize Radio Network for:

☒ Throughput ☐ Range ☐ Custom

Aironet Extensions:

☒ Enable ☐ Disable

Radio1-802.11A

SSID:

AP1

Broadcast SSID in Beacon:

☐ Yes ☒ No

Role in Radio Network:

☒ Access Point Root ☐ Repeater Non-Root

Optimize Radio Network for:

☐ Throughput ☐ Range ☒ Default ☐ Custom

Aironet Extensions:

☒ Enable ☐ Disable

Browse to the **EXPRESS SET-UP** Page and verify the settings configured in Step 1 through GUI.

### Step 3 Data rate speed and Duplex of the FastEthernet interface

The screenshot shows the Cisco 1200 Access Point configuration interface. The left sidebar contains a menu with options: HOME, EXPRESS SET-UP, NETWORK MAP, ASSOCIATION, NETWORK INTERFACES (highlighted), IP Address, FastEthernet, Radio0-802.11B, Radio1-802.11A, SECURITY, SERVICES, WIRELESS SERVICES, SYSTEM SOFTWARE, and EVENT LOG. The main content area is titled 'Cisco 1200 Access Point' and has tabs for 'FASTETHERNET STATUS' and 'SETTINGS'. The 'SETTINGS' tab is active, showing 'Pod1' as the hostname and 'Pod1 uptime is 21 minutes'. Below this, the 'Network Interfaces: FastEthernet Settings' section is displayed. It includes the following settings: 'Enable Ethernet' (radio buttons for Enable and Disable, with 'Enable' selected), 'Current Status (Software/Hardware):' (green arrows and text for 'Enabled' and 'Up'), 'Requested Duplex: \*' (radio buttons for Auto, Half, and Full, with 'Auto' selected), and 'Requested Speed: \*' (radio buttons for Auto, 100 Mbps, and 10 Mbps, with 'Auto' selected). A footnote at the bottom states: '\* Do not modify while using inline power. The "Requested Duplex" and "Requested Speed" controls may be set to "auto" only when operating with normal power. They may also be set by using the [Upload New Startup Configuration File](#) feature.' At the bottom right of the settings area are 'Apply' and 'Cancel' buttons.

- Go to the **NETWORK INTERFACES>FastEthernet** Page and click on the settings tab of the AP.
- The **Enable Ethernet:** setting should be set to **Enable**.

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**Note** If the FastEthernet settings are modified while connected through the wired network, the connection may be lost. These will actually be modified in Step 4 through the Console. The Requested Duplex Setting should be set to **Auto** by default. In a production environment, the duplex should be locked into the optimum setting of the connected switch.

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- The Requested Speed Setting should be set to **Auto** by default. In a production environment, the speed should be locked into the optimum setting of the connected switch.

## Step 4 Configure Ethernet/FastEthernet Interfaces through IOS CLI

Typically, an IP address is configured on the BVI interface only. However, there are some other settings which should be set on the FastEthernet interface. Below is a command table which will be used in this step.

Command	Description
<code>configure terminal</code>	enter global configuration mode
<code>interface fastEthernet interface number</code>	enter the device Ethernet/fastEthernet interface
<code>duplex auto full half</code>	set the role of the AP device
<code>show interfaces &lt;cr&gt; interface number</code>	View the interface(s) detailed status
<code>show ip interface brief</code>	View a brief status of IP interfaces
<code>show running-config</code>	View the running configuration
<code>speed 10 100 auto</code>	set the data rate of the AP

Console into the AP

- a. Beginning in configuration mode. Follow these steps to set the AP Ethernet/FastEthernet settings:

```
PodP(config)#interface fastEthernet 0
```

- b. Now see what duplex settings are possible.

```
PodP(config-if)#duplex ?  
auto  Enable AUTO duplex configuration  
full  Force full duplex operation  
half  Force half-duplex operation
```

- c. Set the duplex to full

```
PodP(config-if)#duplex full
```

- d. Now see what speed settings are possible.

```
PodP(config-if)# speed ?  
10    Force 10 Mbps operation  
100   Force 100 Mbps operation  
auto  Enable AUTO speed configuration
```

- e. Now set the speed to 100 Mbps.

```
PodP(config-if)#speed 100  
PodP(config-if)#end
```

- f. Check the running configuration.

```
PodP#show running-config
```

g. Display the FastEthernet interface status

PodP#**show interfaces fastEthernet 0**

```
FastEthernet0 is up, line protocol is up
  Hardware is PowerPC405GP Ethernet, address is 000b.46b8.ca90 (bia 000b.46b8.ca90)
  MTU 1500 bytes, BW 100000 Kbit, DLY 100 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s, MII
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:23:18, output 00:01:54, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    1783 packets input, 164809 bytes
    Received 29 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 watchdog
    0 input packets with dribble condition detected
  1141 packets output, 449852 bytes, 0 underruns
  0 output errors, 0 collisions, 4 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier
  0 output buffer failures, 0 output buffers swapped out
```

h. Quickly verify all the interfaces are up

PodP#**show ip interface brief**

PodP#show ip interface brief

Interface	IP-Address	OK?	Method	Status	Protocol
BVI1	10.0.P.1	YES	other	up	up
Dot11Radio0	unassigned	YES	TFTP	up	up
Dot11Radio1	unassigned	YES	TFTP	up	up
FastEthernet0	unassigned	YES	other	up	up
Virtual-Dot11Radio0	unassigned	YES	TFTP	down	down
Virtual-Dot11Radio1	unassigned	YES	TFTP	down	down

PodP#

i. Now check the detailed status of all the interfaces

PodP#show interfaces