

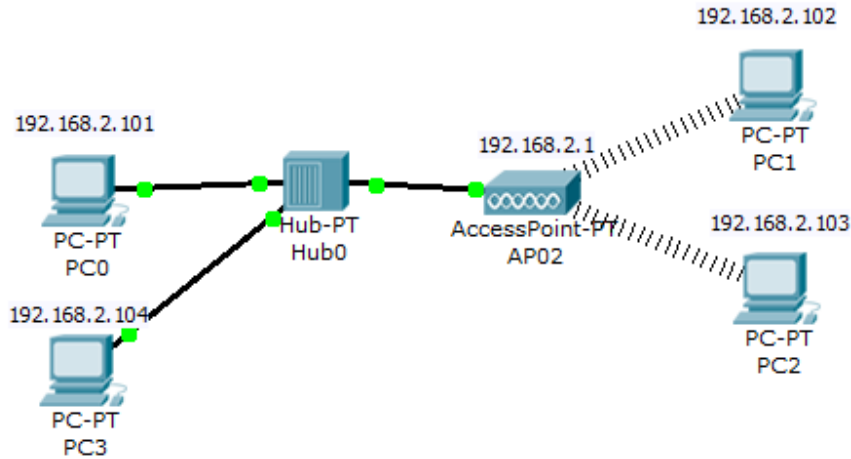
Wireless Lab 04

Introduction to Wireless Access points and Wireless Router

1. Access point

Equipment:

- 4 PCs
- 1 AP
- 1 switch



AP	
IP	192.168.2.101
Subnet mask	255.255.255.0
SSID	AP02
Country	Egypt
Mode	Access Point
DHCP	on [192.168.2.101 – 192.168.2.199]

PC0	
IP	192.168.2.101
Subnet mask	255.255.255.0
Gateway	-

PC1	
IP	192.168.2.103
Subnet mask	255.255.255.0
Gateway	-

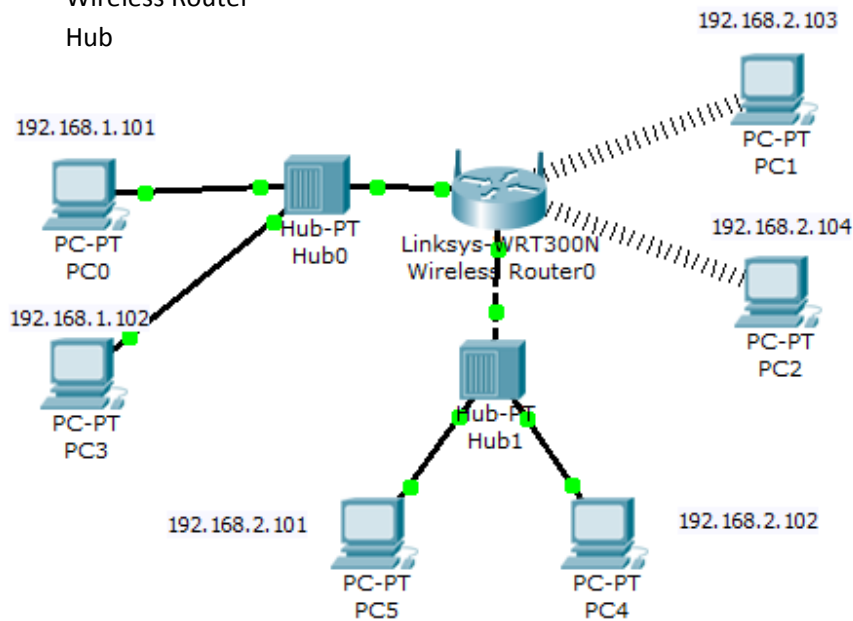
PC2	
IP	192.168.2.104
Subnet mask	255.255.255.0
Gateway	-

PC3	
IP	192.168.2.102
Subnet mask	255.255.255.0
Gateway	-

2. Wireless Router

Equipment:

- 6 PCs
- 1 Wireless Router
- 2 Hub



Router	
Network IP	192.168.2.1
Subnet mask	255.255.255.0
Internet IP	192.168.1.1
Subnet Mask	255.255.255.0
SSID	Router01
Country	Egypt
DHCP	on [192.168.2.101 – 192.168.2.199]

Internet Setup	
Internet Connection type	Static IP
	Internet IP Address: 192 . 168 . 1 . 1
	Subnet Mask: 255 . 255 . 255 . 0
	Default Gateway: 192 . 168 . 1 . 1



Network Setup

Router IP
 IP Address: 192 . 168 . 2 . 1
 Subnet Mask: 255.255.255.0

DHCP Server Settings
 DHCP Server: **Enabled** **Disabled**

Start IP Address: 192.168.2. 100
 Maximum number of Users: 50
 IP Address Range: 192.168.2. 100 - 149

Basic Wireless Settings

Network Mode: Mixed
 Network Name (SSID): Router01
 Radio Band: Auto
 Wide Channel: Auto
 Standard Channel: 1 - 2.412GHz
 SSID Broadcast: **Enabled** **Disabled**

PC0	
IP settings	Static
IP	192.168.1.101
Subnet mask	255.255.255.0
Gateway	192.168.1.1

PC3	
IP settings	Static
IP	192.168.1.102



Subnet mask	255.255.255.0
Gateway	192.168.1.1

PC1	
IP settings	DHCP
IP	192.168.2.101
Subnet mask	255.255.255.0
Gateway	192.168.2.1

PC4	
IP settings	DHCP
IP	192.168.2.102
Subnet mask	255.255.255.0
Gateway	192.168.2.1

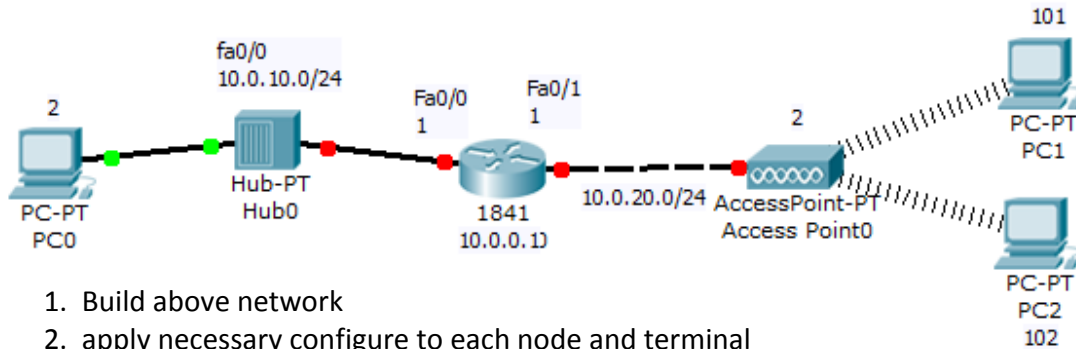
PC5	
IP settings	DHCP
IP	192.168.2.103
Subnet mask	255.255.255.0
Gateway	192.168.2.1

PC6	
IP settings	DHCP
IP	192.168.2.104
Subnet mask	255.255.255.0
Gateway	192.168.2.1

3. Extended service set using Wireless Access Point

Equipment

- 3 Router
- 1 PC
- 2 Wireless PC
- 1 Access point



1. Build above network
2. apply necessary configure to each node and terminal
3. Goals:
 - a. Each node and terminal can ping the rest devices in the network
 - b. Access Router0 & Router1 & Router 2 remotely from any PC

used devices

Router



Wireless router



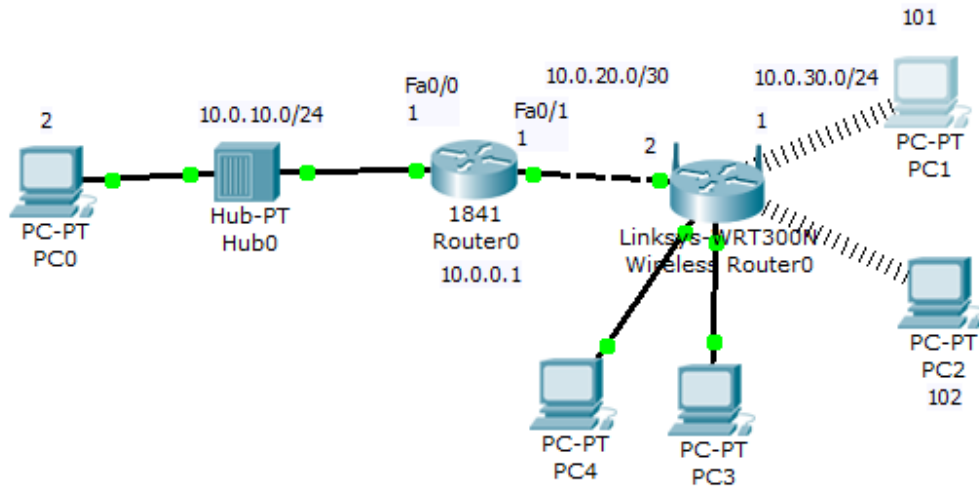


Router	<pre> en config t interface fa0/0 ip address 10.0.10.1 255.255.255.0 no sh end config t interface fa0/1 ip address 10.0.20.1 255.255.255.0 no sh end config t interface loopback 0 ip address 10.0.0.1 255.255.255.255 no sh end </pre>																	
Wireless AP	<table border="1"> <tr><td colspan="2">AP</td></tr> <tr><td>IP</td><td>10.0.20.2</td></tr> <tr><td>Subnet mask</td><td>255.255.255.0</td></tr> <tr><td>GW</td><td>10.0.20.1</td></tr> <tr><td>SSID</td><td>AP02</td></tr> <tr><td>Country</td><td>Egypt</td></tr> <tr><td>Mode</td><td>Access Point</td></tr> <tr><td>DHCP</td><td>on [10.0.20.101 – 10.0.20.199]</td></tr> </table>		AP		IP	10.0.20.2	Subnet mask	255.255.255.0	GW	10.0.20.1	SSID	AP02	Country	Egypt	Mode	Access Point	DHCP	on [10.0.20.101 – 10.0.20.199]
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PC0	<table border="1"> <tr><td colspan="2">PC0</td></tr> <tr><td>IP settings</td><td>Static</td></tr> <tr><td>IP</td><td>10.0.10.2</td></tr> <tr><td>Subnet mask</td><td>255.255.255.0</td></tr> <tr><td>Gateway</td><td>10.0.10.1</td></tr> </table>		PC0		IP settings	Static	IP	10.0.10.2	Subnet mask	255.255.255.0	Gateway	10.0.10.1						
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PC1	<table border="1"> <tr><td colspan="2">PC1</td></tr> <tr><td>IP settings</td><td>Static</td></tr> <tr><td>IP</td><td>10.0.20.101</td></tr> <tr><td>Subnet mask</td><td>255.255.255.0</td></tr> <tr><td>Gateway</td><td>10.0.20.1</td></tr> </table>		PC1		IP settings	Static	IP	10.0.20.101	Subnet mask	255.255.255.0	Gateway	10.0.20.1						
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PC2	<table border="1"> <tr><td colspan="2">PC2</td></tr> <tr><td>IP settings</td><td>Static</td></tr> <tr><td>IP</td><td>10.0.20.102</td></tr> <tr><td>Subnet mask</td><td>255.255.255.0</td></tr> <tr><td>Gateway</td><td>10.0.20.1</td></tr> </table>		PC2		IP settings	Static	IP	10.0.20.102	Subnet mask	255.255.255.0	Gateway	10.0.20.1						
PC2																		
IP settings	Static																	
IP	10.0.20.102																	
Subnet mask	255.255.255.0																	
Gateway	10.0.20.1																	

4. Extended service set using Wireless Router

Equipment

- 3 Router
- 1 PC
- 2 Wireless PC
- 1 Wireless Router



- Build above network
- apply necessary configure to each node and terminal
- Goals:
 - c. Each node and terminal can ping the rest devices in the network
 - d. Access Router0 & Router1 & Router 2 & wireless router remotely from any PC

used devices

Router



Wireless router



Router

```
en
config t
interface fa0/0
ip address 10.0.10.1 255.255.255.0
no sh
end

config t
interface fa0/1
ip address 10.0.20.1 255.255.255.0
no sh
end

config t
interface loopback 0
ip address 10.0.0.1 255.255.255.255
no sh
end

config t
ip route 10.0.10.0 255.255.255.0 fa0/0
ip route 10.0.20.0 255.255.255.0 fa0/1
ip route 10.0.30.0 255.255.255.0 fa0/1
end
```




Wireless Router	Network IP	10.0.30.1
	Subnet mask	255.255.255.0
	Internet IP	10.0.20.2
	Subnet Mask	255.255.255.0
	Gateway	10.0.20.1
	SSID	Router01
	Country	Egypt
	DHCP	on [10.0.30.101 – 10.0.30.199]
PC0	PC0	
	IP settings	Static
	IP	10.0.10.2
	Subnet mask	255.255.255.0
PC1	PC1	
	IP settings	DHCP
	IP	10.0.30.101
	Subnet mask	255.255.255.0
Wireless Router	Internet Connection type	
	Internet Connection type	Static IP
	Internet IP Address:	10 . 0 . 20 . 2
	Subnet Mask:	255 . 255 . 255 . 0
Wireless Router	Network Setup	
	Router IP	IP Address: 10 . 0 . 30 . 1
	Subnet Mask:	255.255.255.0
	DHCP Server Settings	
Wireless Router	DHCP Server:	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled <input type="button" value="DHCP Reservation"/>
	Start IP Address:	10.0.30. 101
	Maximum number of Users:	99
	IP Address Range:	10.0.30.101 - 199



PC2	PC2	
	IP settings	DHCP
	IP	10.0.30.102
	Subnet mask	255.255.255.0
	Gateway	10.0.30.1
PC3	PC1	
	IP settings	DHCP
	IP	10.0.30.103
	Subnet mask	255.255.255.0
	Gateway	10.0.30.1
PC4	PC2	
	IP settings	DHCP
	IP	10.0.30.104
	Subnet mask	255.255.255.0
	Gateway	10.0.30.1