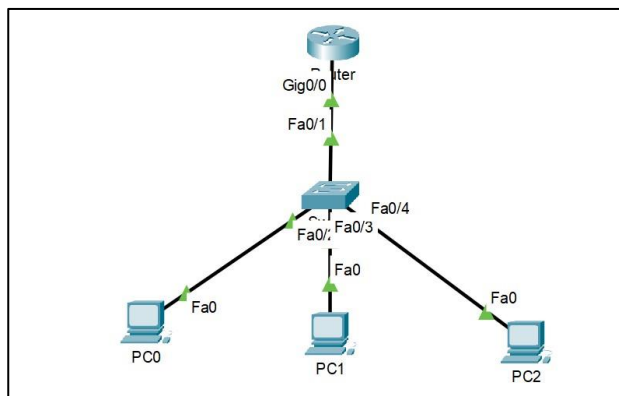
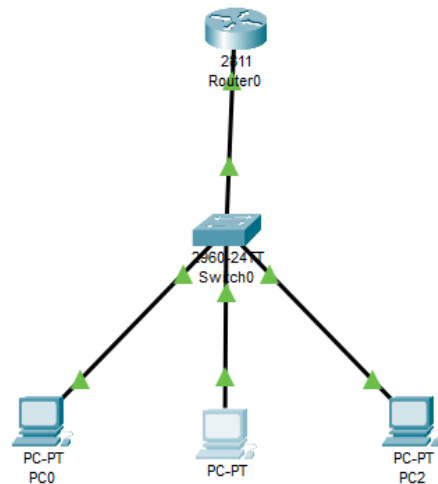


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A. PERCOBAAN



Gambar 1 Topologi jaringan DHCP



1. Buat Topologi Seperti Gambar diatas
2. Pasang Kabel Copper Straight dari PC ke Switch terhubung



Gambar 6.2 Tampilan pilihan kabel pada Cisco Packet Tracer

3. Setelah itu, kita menyalakan switch daya dan tunggu beberapa menit, router akan menyala.

```
System Bootstrap, Version 15.1(4)M4, RELEASE SOFTWARE (fcl)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2010 by cisco Systems, Inc.
Total memory size = 512 MB - On-board = 512 MB, DIMM0 = 0 MB
CISCO2911/K9 platform with 524288 Kbytes of main memory
Main memory is configured to 72/-1(On-board/DIMM0) bit mode with ECC disabled

Readonly ROMMON initialized

program load complete, entry point: 0x80803000, size: 0x1b340
program load complete, entry point: 0x80803000, size: 0x1b340

IOS Image Load Test

Digitally Signed Release Software
program load complete, entry point: 0x81000000, size: 0x3bcd3d8
Self decompressing the image :
***** [OK]
```

Gambar 6.3 Tampilan booting pada Router

4. Setelah loading router selesai, kita lanjutkan konfigurasinya.

Memberi nama Router

```
Router>enable
Router#configure terminal
Router(config)#hostname ROUTER_DHCP
```

Setting IP Address pada Router

```
ROUTER_DHCP(config)#int g0/0
ROUTER_DHCP(config-if)#ip add 192.168.1.1 255.255.255.0
ROUTER_DHCP(config-if)#no shutdown
ROUTER_DHCP(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0,
changed state to up

ROUTER_DHCP(config-if)#exit
```

Konfigurasi DHCP pada Router

```
ROUTER_DHCP(config)#ip dhcp pool LAB
ROUTER_DHCP(dhcp-config)#network 192.168.1.0 255.255.255.0
ROUTER_DHCP(dhcp-config)#default-router 192.168.1.1
ROUTER_DHCP(dhcp-config)#dns-server 192.168.1.1
ROUTER_DHCP(dhcp-config)#ip dhcp excluded-address 192.168.1.1
ROUTER_DHCP(dhcp-config)#ip dhcp excluded-address 192.168.1.2
192.168.1.20
ROUTER_DHCP(config)#
```

5. Setelah itu lakukan konfigurasi pada PC

Konfigurasi DHCP Client

Setting DHCP client :

1. Klik 2x pada icon PC,
2. Pilih desktop,
3. Pilih IP Configuration,
4. Pilih DHCP,
5. Tunggu, lalu akan dapat IP DHCP

6. Setelah itu Melihat daftar IP dari Client

Melihat Daftar IP dari Client

```
ROUTER_DHCP#sh ip dhcp binding
```

```
ROUTER_DHCP#sh ip dhcp binding
```

IP address	Client-ID/ Hardware address	Lease expiration	Type
192.168.1.21	00D0.BA95.3C52	--	Automatic
192.168.1.22	0001.631A.3CE9	--	Automatic
192.168.1.23	0004.9AD1.12BE	--	Automatic

```
ROUTER_DHCP#
```

No	IP address	MAC Address	Lease Expiration	Type
1	192.168.1.21	00D0.BA95.3C52	--	Automatic
2	192.168.1.22	0001.631A.3C39	--	Automatic
3	192.168.1.23	0004.9AD1.12BE	--	Automatic

Setelah itu lakukan pengalamatan ip pada Client/PC

☒ DHCP
 ☐ Static

IPv4 Address: 192.168.1.23

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 192.168.1.1

☒ DHCP
 ☐ Static
 DHCP request successful.

IPv4 Address: 192.168.1.21

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 192.168.1.1

☒ DHCP
 ☐ Static

IPv4 Address: 192.168.1.22

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

DNS Server: 192.168.1.1

No	Client	IP address	Netmask	Gateway	Dns
1	PC0	192.168.1.23	255.255.255.0	192.168.1.1	192.168.1.1
2	PC1	192.168.1.21	255.255.255.0	192.168.1.1	192.168.1.1
3	PC2	192.168.1.22	255.255.255.0	192.168.1.1	192.168.1.1

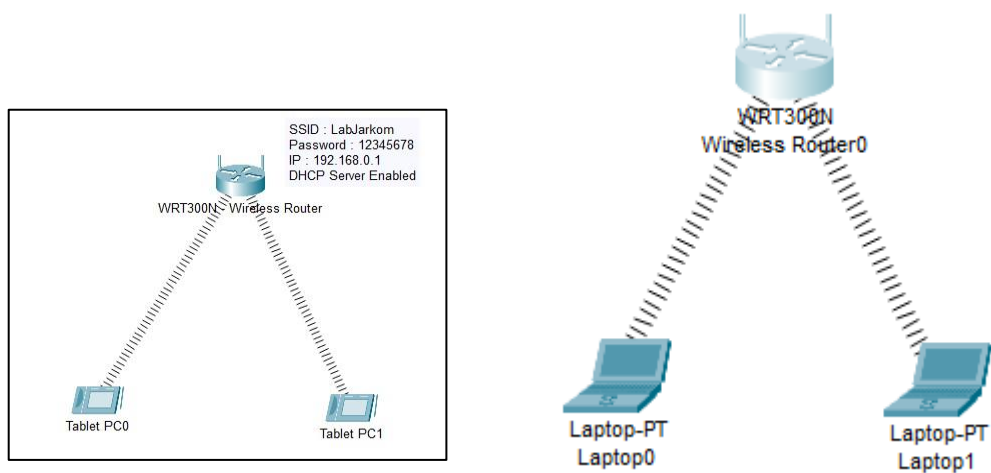
7. Lakukan pengujian PING pada setiap PC

Daftar IP Client

No	Sumber	Hasil Ya / Tidak	Tujuan	Hasil
				Ya / Tidak
1	PC0	Ya	PC1	Ya
		Ya	PC2	Ya
2	PC1	Ya	PC0	Ya
		Ya	PC2	Ya
3	PC2	Ya	PC0	Ya
		Ya	PC1	Ya

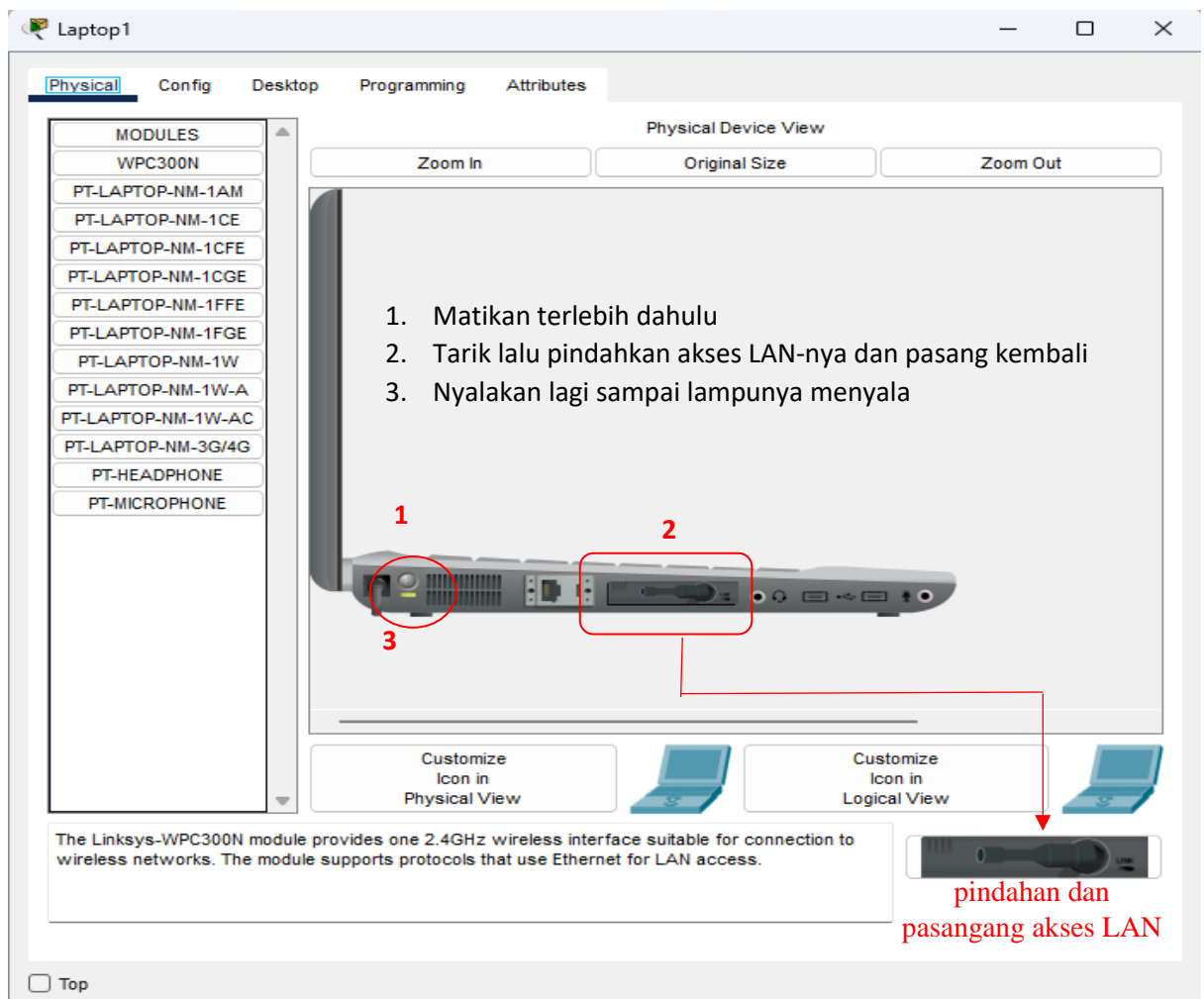
Tes Koneksi dengan menggunakan PING (catat hasil yang anda dapat)

B. PERCOBAAN



Gambar 1 Topologi jaringan Wireless

1. Buat Topologi Seperti Gambar diatas (note*: **Gantilah device tablet menjadi laptop pada topologi diatas dan harus terhubung secara wireless**)
 - Ganti adapternya terlebih dahulu dengan cara seperti di gambar



2. Konfigurasi Access Point

- Untuk mengkonfigurasi access point, klik Wireless Router yang sudah dipasang.
- Pilih tab/menu GUI
- Masukkan IP Address dengan 192.168.0.1
- Serta Subnet Mask dengan 255.255.255.0

The screenshot shows the 'Setup' menu with tabs for Setup, Wireless, Security, Access Restrictions, Applications & Gaming, and Admin. Under 'Setup', there are sub-tabs for Basic Setup, DDNS, and MAC Address Clone. The 'Internet Setup' section includes 'Internet Connection type' set to 'Automatic Configuration - DHCP' and 'Optional Settings' for Host Name, Domain Name, MTU, and Size. The 'Network Setup' section shows the 'Router IP' as 192.168.0.1 and the 'Subnet Mask' as 255.255.255.0.

Gambar 7.2 Konfigurasi IP Access Point

- Aktifkan DHCP Server, menjadi Enabled
- Mulai IP Address, dan IP DHCP dimulai dari 192.168.0.100
- Maximum number of Users (jumlah maksimum dari IP DHCP)
- Lalu simpan pengaturan (Save Settings)

The screenshot shows the 'DHCP Server Settings' page. The 'DHCP Server' is set to 'Enabled'. The 'Start IP Address' is 192.168.0.100, 'Maximum number of Users' is 50, and 'IP Address Range' is 192.168.0.100 - 149. The 'Client Lease Time' is 0 minutes. Static DNS and WINS settings are all set to 0.

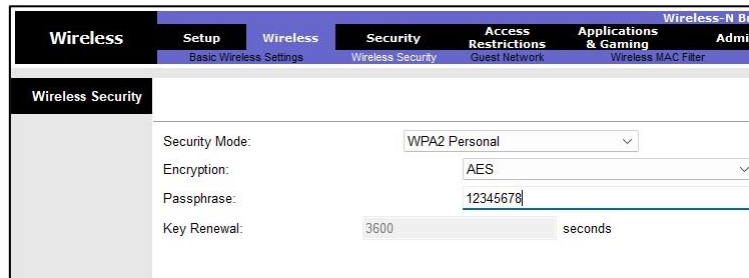
Gambar 7.3 Konfigurasi Range IP pada Access point

- Pilih tab/menu Wireless -> Basic Wireless Settings
- Buatlah nama SSID dengan LabJarkom
- Lalu simpan pengaturan (Save Settings)



Gambar 7.4 Konfigurasi SSID pada Access Point

- Tekan tab/menu Wireless -> Wireless Security
- Lalu pada Security Mode akan menggunakan WPA2 Personal
- Dengan Encryption AES
- Serta Passphrase 12345678
- Lalu simpan pengaturan (Save Settings)

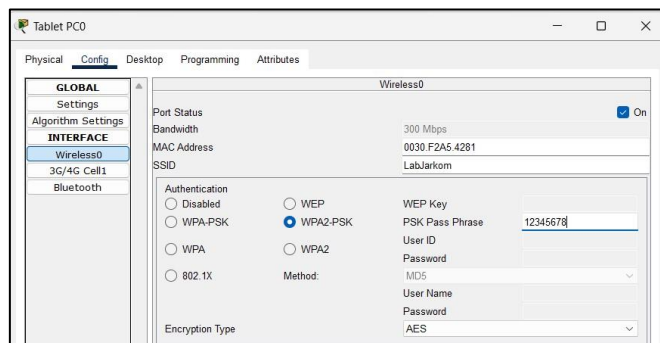


Gambar 7.5 Konfigurasi Password pada Access Point

3. Konfigurasi Client

Konfigurasi Tablet PC0

- Konfigurasi Tablet PC pada tab Config
- SSID = LabJarkom
- Authentication = WPA2-PSK
- Pass Phrase = 12345678



Gambar 7.6 Konfigurasi SSID dan Password pada PC Tablet0

- Pada IP Configuration memakai DHCP
- Nomor IP akan ditampilkan jika PC Tablet terhubung dan DHCP Server aktif

IP Configuration

☒ DHCP

☐ Static

IPv4 Address: 192.168.0.100

Subnet Mask: 255.255.255.0

IPv6 Configuration

☒ Automatic

☐ Static

IPv6 Address: /

Link Local Address: FE80::230:F2FF:FEA5:4281

Gambar 7.7 Konfigurasi DHCP pada PC Tablet0

Konfigurasi Tablet PC1

- Konfigurasi Tablet PC pada tab Config
- SSID = LabJarkom
- Authentication = WPA2-PSK
- Pass Phrase = 12345678

Tablet PC1

Physical Config Desktop Programming Attributes

GLOBAL

Settings

Algorithm Settings

INTERFACE

Wireless0

3G/4G Cell1

Bluetooth

Wireless0

Port Status: On

Bandwidth: 300 Mbps

MAC Address: 0001.43A5.ED0D

SSID: LabJarkom

Authentication:

☐ Disabled

☐ WPA-PSK

☒ WPA2-PSK

☐ WPA

☐ 802.1X

WEP Key: 12345678

PSK Pass Phrase: 12345678

User ID: MD5

User Name: Password

Encryption Type: AES

Gambar 7.8 Konfigurasi SSID dan Password pada PC Tablet1

- IP menggunakan DHCP
- Nomor IP akan ditampilkan jika PC Tablet terhubung dan DHCP Server aktif

IP Configuration

☒ DHCP

☐ Static

IPv4 Address: 192.168.0.101

Subnet Mask: 255.255.255.0

IPv6 Configuration

☒ Automatic

☐ Static

IPv6 Address: /

Link Local Address: FE80::201:43FF:FEA5:ED0D

Gambar 7.9 Konfigurasi DHCP pada PC Tablet0

4. Pengujian PING

- Di PC Tablet, pilih tab/menu Desktop -> Command Prompt
- Jalankan perintah Ping ke IP Access Point 192.168.0.1

- Ping IP PC TabletPC0 Ke PC TabletPC1
- Lakukan juga pada PC TabletPC1 ke PC TabletPC0

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time=26ms TTL=255
Reply from 192.168.0.1: bytes=32 time=11ms TTL=255
Reply from 192.168.0.1: bytes=32 time=14ms TTL=255
Reply from 192.168.0.1: bytes=32 time=13ms TTL=255

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 11ms, Maximum = 26ms, Average = 16ms

C:\>ping 192.168.0.101

Pinging 192.168.0.101 with 32 bytes of data:

Reply from 192.168.0.101: bytes=32 time=39ms TTL=128
Reply from 192.168.0.101: bytes=32 time=15ms TTL=128
Reply from 192.168.0.101: bytes=32 time=17ms TTL=128
Reply from 192.168.0.101: bytes=32 time=16ms TTL=128

Ping statistics for 192.168.0.101:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 15ms, Maximum = 39ms, Average = 21ms

C:\>

```

Gambar 7.10 Hasil pengujian PING pada PC Tablet0

```

Cisco Packet Tracer PC Command Line 1.0
C:\>PING 192.168.0.1

Pinging 192.168.0.1 with 32 bytes of data:

Reply from 192.168.0.1: bytes=32 time=19ms TTL=255
Reply from 192.168.0.1: bytes=32 time=16ms TTL=255
Reply from 192.168.0.1: bytes=32 time=12ms TTL=255
Reply from 192.168.0.1: bytes=32 time=15ms TTL=255

Ping statistics for 192.168.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 12ms, Maximum = 19ms, Average = 15ms

C:\>PING 192.168.0.100

Pinging 192.168.0.100 with 32 bytes of data:

Reply from 192.168.0.100: bytes=32 time=28ms TTL=128
Reply from 192.168.0.100: bytes=32 time=21ms TTL=128
Reply from 192.168.0.100: bytes=32 time=15ms TTL=128
Reply from 192.168.0.100: bytes=32 time=14ms TTL=128

Ping statistics for 192.168.0.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 14ms, Maximum = 28ms, Average = 19ms

C:\>

```

Gambar 7.11 Hasil pengujian PING pada PC Tablet1