

**UNIVERZITET U BIHAĆU**  
**TEHNIČKI FAKULTET**  
**BIHAĆ**

**RAČUNARSKE MREŽE**

**Laboratorijske vježbe**

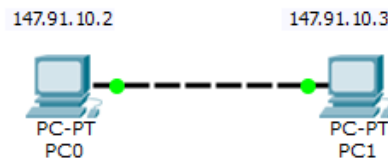
**CISCO Packet Tracer**  
**(Vježba 1)**

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**Viši asistent**

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## PRIMJER 1: Povezivanje dva računara direktnom vezom

Dva računara je najjednostavnije povezati direktnom vezom korištenjem *ethernet* priključka i odgovarajućeg *cross-over ethernet* kabla.



Ispravnost ostvarene veze se provjerava korištenjem komande **ping** u okviru *Command Prompt*-a. Potrebno je otvoriti Command Prompt računara PC0 i otkucati sljedeću komandu:

```
ping 147.91.10.3
```

```
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ping 147.91.10.3

Pinging 147.91.10.3 with 32 bytes of data:

Reply from 147.91.10.3: bytes=32 time=5ms TTL=128
Reply from 147.91.10.3: bytes=32 time=0ms TTL=128
Reply from 147.91.10.3: bytes=32 time=0ms TTL=128
Reply from 147.91.10.3: bytes=32 time=0ms TTL=128

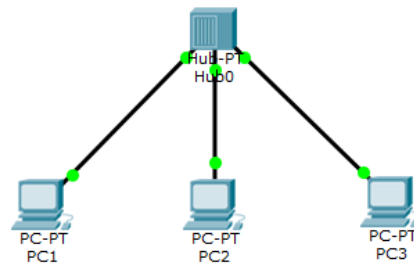
Ping statistics for 147.91.10.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 5ms, Average = 1ms

PC>
```

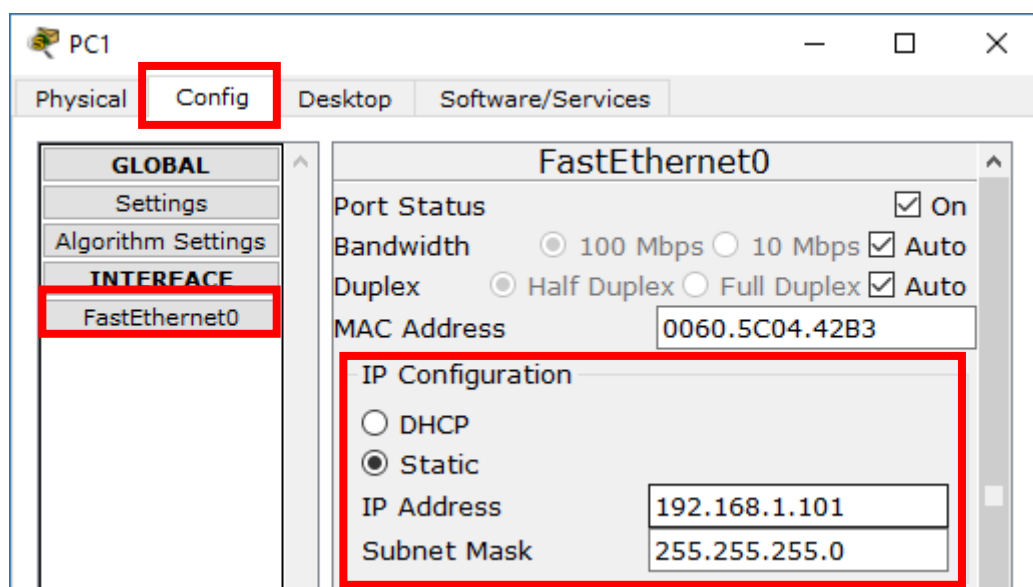
Slika 1. Testiranje ispravnosti povezivanja korištenjem ping komande

## PRIMJER 2: Hub (Tri računara i hub)

Hub je uređaj koji šalje pakete svim uređajima u mreži, nakon toga odgovara onaj paket kojem je namijenjen.



Računar	IP adresa	Subnet mask
PC1	192.168.1.101	255.255.255.0
PC2	192.168.1.102	255.255.255.0
PC3	192.168.1.103	255.255.255.0



```
Command Prompt

Packet Tracer PC Command Line 1.0
PC>ping 192.168.1.103

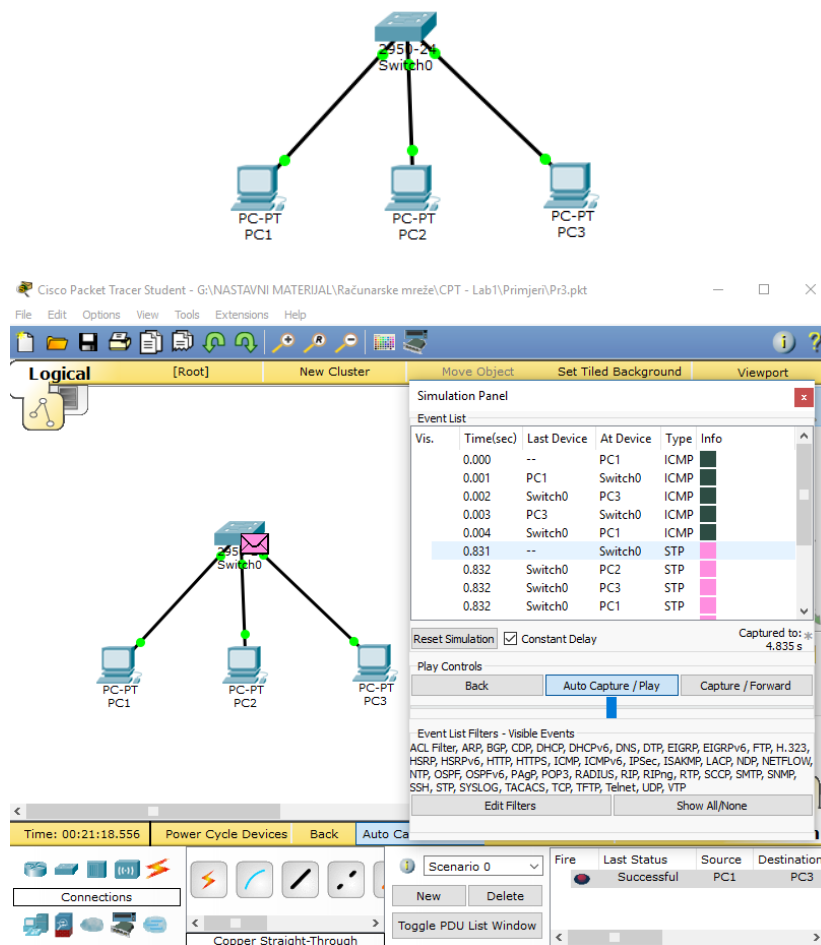
Pinging 192.168.1.103 with 32 bytes of data:

Reply from 192.168.1.103: bytes=32 time=1ms TTL=128
Reply from 192.168.1.103: bytes=32 time=1ms TTL=128
Reply from 192.168.1.103: bytes=32 time=1ms TTL=128
Reply from 192.168.1.103: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.103:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms
```

### PRIMJER 3: Switch (Tri računara i switch)

*Switch je uređaj koji šalje pakete samo onim uređajima u mreži kojim je namijenjen paket.*



*Kao što vidimo SWITCH prosljeđuje samo računaru koji treba da primi podatke i kad on primi šalje povratnu informaciju da je paket stigao.*

```
Command Prompt

Packet Tracer PC Command Line 1.0
PC>ping 192.168.1.103

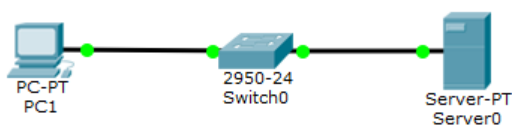
Pinging 192.168.1.103 with 32 bytes of data:

Reply from 192.168.1.103: bytes=32 time=0ms TTL=128
Reply from 192.168.1.103: bytes=32 time=0ms TTL=128
Reply from 192.168.1.103: bytes=32 time=0ms TTL=128
Reply from 192.168.1.103: bytes=32 time=0ms TTL=128

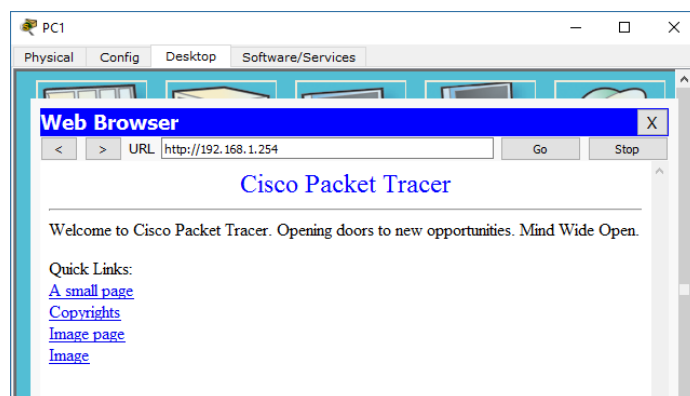
Ping statistics for 192.168.1.103:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>
```

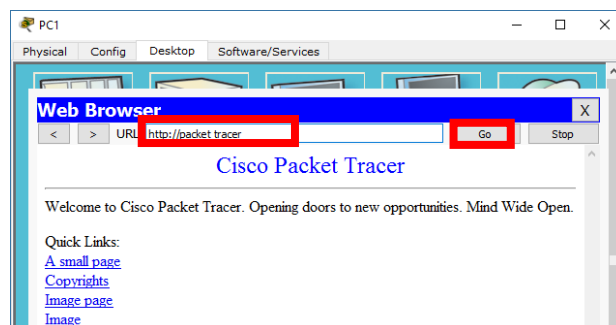
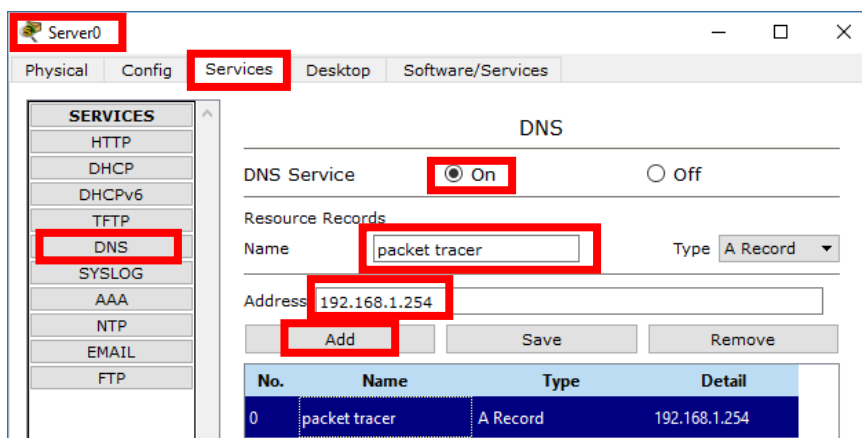
## PRIMJER 4: Server



Računar/Server	IP adresa	Subnet mask
PC1	192.168.1.101	255.255.255.0
Server	192.168.1.254	255.255.255.0



DNS



## PRIMJER 5: Wireless router



Wireless Router1

Physical **Config** GUI

**GLOBAL**

- Settings
- Algorithm Settings

**INTERFACE**

- Internet
- LAN
- Wireless**

**Wireless Settings**

SSID: Default

Channel: 6

Authentication:

- ☐ Disabled
- ☒ **WEP**
- ☐ WPA-PSK
- ☐ WPA2-PSK
- ☐ WPA
- ☐ WPA2

WEP Key: abcde12345

PSK Pass Phrase:

RADIUS Server Settings:

IP Address:

Shared Secret:

Encryption Type: 40/64-Bits (10 Hex digits)

Wireless Router1

Physical Config GUI

**Setup**

Setup Wireless Security Access Restrictions Applications & Gaming Administration State

Basic Setup DDNS MAC Address Clone Advanced Routing

**Internet Setup**

Internet Connection type: Automatic Configuration - DHCP

Optional Settings (required by some internet service providers):

Host Name:

Domain Name:

MTU: Size: 1500

**Network Setup**

Router IP:

IP Address: 192.168.0.1

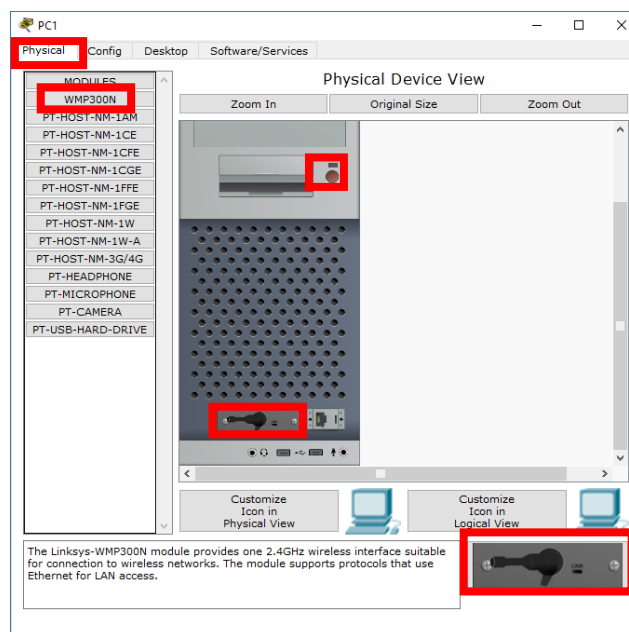
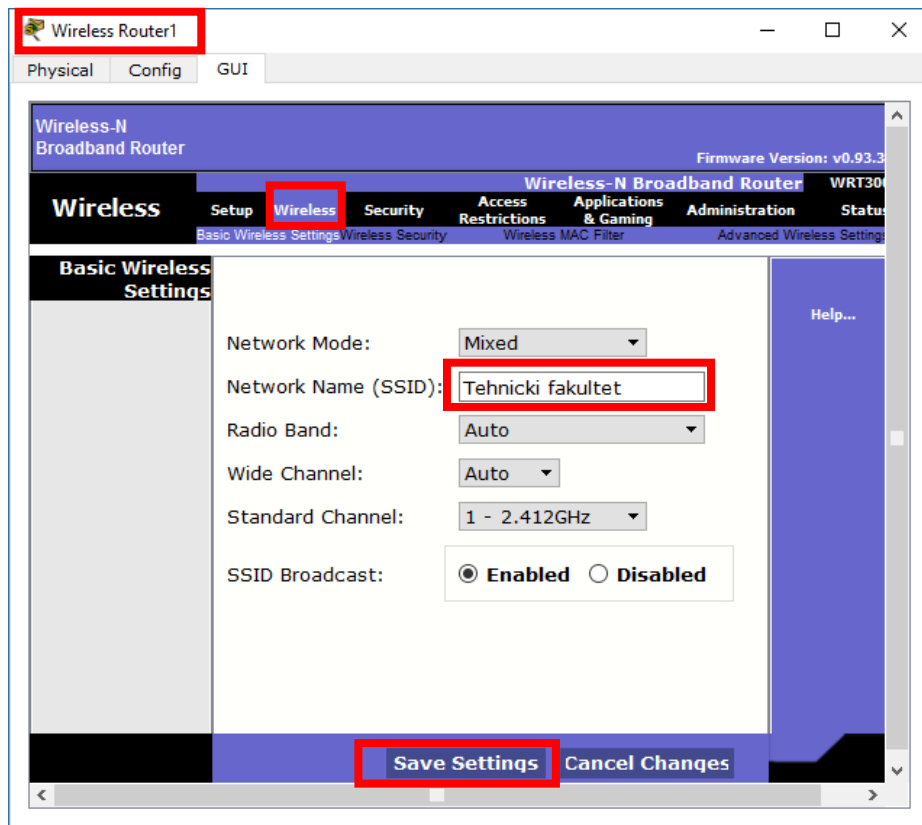
Subnet Mask: 255.255.255.0

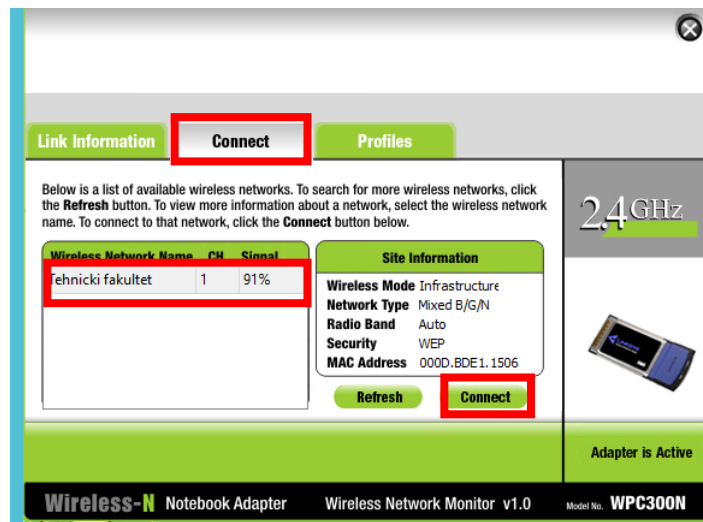
DHCP Server Settings:

DHCP Server: ☒ **Enabled** ☐ Disabled

DHCP Reservation:

Start IP Address: 192.168.0.100





### WEP Key Needed for Connection

This wireless network has WEP encryption enabled. To connect to this network, select the level of WEP encryption. Enter the required passphrase or WEP key in the appropriate field below. Then click the **Connect**.

Security: WEP Please select the wireless security method used by your existing wireless network.

WEP: 64-bit To use WEP encryption, select 64-bit or 128-bit

Passphrase: The Passphrase is case-sensitive and should be no more than 16 characters in length.

WEP Key 1: abcde12345 When entering this manually, it should be 10 characters for 64-bit encryption or 26 characters for 128-bit encryption. Valid hexadecimal characters are "A" through "F" and numbers "0" through "9".

Cancel **Connect**

## Command Prompt

```
Packet Tracer PC Command Line 1.0
PC>
Packet Tracer PC Command Line 1.0
PC>ping 192.168.0.101

Pinging 192.168.0.101 with 32 bytes of data:

Reply from 192.168.0.101: bytes=32 time=31ms TTL=128
Reply from 192.168.0.101: bytes=32 time=22ms TTL=128
Reply from 192.168.0.101: bytes=32 time=23ms TTL=128
Reply from 192.168.0.101: bytes=32 time=18ms 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 = 18ms, Maximum = 31ms, Average = 23ms
```