

Nastavni predmet	Imet RAČUNALNE MREŽE	
Naslov cjeline	aslov cjeline Fizički pristup mreži	
Naslov jedinice	Vježba 2: Osnovne mrežne postavke računala	

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Učenik će znati pridruživati i provjeravati osnovne mrežne postavke računala.

PRIPREMA ZA VJEŽBU

U pisanoj formi odgovori na slijedeća pitanja:

1. Što je to i čemu služi protokol DHCP?

DHCP mrežni je protokol korišten od strane mrežnih računala za dodjeljivanje IP adresa i ostalih mrežnih postavki kao što su pretpostavljeni gateway, subnet maska i IP adrese DNS servera s DHCP servera. Olakšava konfiguraciju mreže jer eliminira ručno dodavanje osnovnih postavki za jednu računalnu mrežu. DHCP klijent se brine da su dodijeljene IP adrese ispravne i da u mreži nema sukoba adresa.

2. Što je to i kako se koristi naredba ping?

Ping naredba šalje pakete podataka na određenu IP adresu ili URL na mreži, a zatim vam omogućuje da znate koliko je vremena potrebno za prijenos tih podataka i dobivanje odgovora. U sustavu Windows, pritisnite Windows + R. U prozoru za upravljanje upišite "cmd" u okvir za pretraživanje, a zatim pritisnite tipku Enter. U upit upišite "ping" zajedno s URL-om ili IP adresom koju želite pingati, a zatim pritisnite tipku Enter.

3. Napiši primjer IPv4 adrese!

IPv4 Address. : 192.168.50.22

4. Napiši primjer MAC adrese!

70-85-C2-CE-9A-DC

5. Objasni čemu služi loopback adresa! Kako izgleda loopback adresa?

Adresa koja počinje sa 127 je rezervirana IPv4 adresa. 127.0.0.1 je loopback adresa i služi za provjeru da li je TCP/IP instaliran i funkcionalan na računalu. Nalazi se na svakom računalu sa intaliranim TCP/IP protokolom.

IZVOĐENJE VJEŽBE

Sve postupke detaljno opisati u bilježnicu.

1. U naredbenom retku pročitati mrežne postavke računala (naredbom ipconfig/all). U bilježnicu zapisati pridružene mrežne postavke.

- 2. Statički pridružiti mrežne postavke računala za rad u lokalnoj mreži i pristup Internetu.
 - Odabrati statičko pridruživanje mrežnih postavki računala

_	· Network connections	_		
erne	Ethernet Properties	nd I	Internet > Network Connections v 🖸 Search Network Connections	۶
iev	Networking Sharing	L	Internet Protocol Version 4 (TCP/IPv4) Properties X	
N Pi han	Connect using:		General You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings. O Obtain an IP address automatically • Use the following IP address: IP address: 192.168.50.22 Subnet mask: 255.255.255.0	
	Link-Layer Topology Discovery Mapper I/O Driver Link-Layer Discovery Mapper I/O Driver Layer Discovery Mapper I/O Driver Discovery Mapper I/O Drivery Mapper I/O Driver D		Derault gateway: Obtain DNS server address automatically • Use the following DNS server addresses: Preferred DNS server: Alternate DNS server: Use the following upon exit	

• Pridružiti IPv4 mrežne postavke za pristup Internetu

```
C:\Users\ucenik>ping 192.168.50.22
Pinging 192.168.50.22 with 32 bytes of data:
Reply from 192.168.50.22: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.50.22:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms</pre>
```

Provjeriti mrežne postavke računala

Pročitati fizičku adresu mrežnog adaptera

Network Connection Details:	
Property	Value
Connection-specific DN	
Description	Realtek PCIe GBE Family Controller
Physical Address	70-85-C2-CE-9A-DC
DHCP Enabled	No
IPv4 Address	192.168.50.22
IPv4 Subnet Mask	255.255.255.0
IPv4 Default Gateway	
IPv4 DNS Server	
IPv4 WINS Server	
NetBIOS over Topip En	
Ink-local IPv6 Address IPv6 Default Gateway	fe80::4ef:9da9:7b:d2a8%5
IPv6 DNS Servers	fec0:0:0:ffff::1%1
	fec0:0:0:ffff::2%1
	fec0:0:0:ffff::3%1
	Close

• Provjeriti pristup Internetu

C:\Users\ucenik>ping google.com Ping request could not find host google.com. Please check the name and try again

Postupak:

Start > Upravljačka ploča > Mrežne veze > Local Area Connection (dvoklik) > Properties > Internet Protocol (TCP/IP) (dvoklik) > upiši IP adresu i subnet masku

reneral You can get IP settings assigned automatically if your network support this capability. Otherwise, you need to ask your network administrator the appropriate IP settings.			
Obtain an IP address automatically			
Se the following IP address	5.		
IP address:	192.168.10.1		
Subnet mask:	255 . 255 . 255 . 0		
Default gateway:			
Obtain DNS server address	automatically		
Set the following DNS serve	er addresses:		
Preferred DNS server:			
Alternate DNS server:			
	Advanced		

U Naredbenom retku (Command Prompt) (Start > Pomagala > Naredbeni redak), pinganjem provjeri ispravnost veze.

Ako ste dobili prikaz kao na slijedećoj slici, pinganje je bilo uspješno. Zapiši i prouči sadržaj ekrana. Koje podatke možete iščitati?

```
Command Prompt

Packet Tracer PC Command Line 1.0

PC>ping 192.168.10.3

Pinging 192.168.10.3 with 32 bytes of data:

Reply from 192.168.10.3: bytes=32 time=63ms TTL=128

Reply from 192.168.10.3: bytes=32 time=31ms TTL=128

Reply from 192.168.10.3: bytes=32 time=31ms TTL=128

Ping statistics for 192.168.10.3:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 31ms, Maximum = 63ms, Average = 39ms

PC>
```

U naredbenom retku ukucaj naredbu *ipconfig*. U bilježnicu upiši rezultat ispisan na ekranu.

```
Windows IP Configuration
Ethernet adapter Ethernet:
Connection-specific DNS Suffix . :
Link-local IPv6 Address . . . . : fe80::4ef:9da9:7b:d2a8%5
IPv4 Address . . . . . . . : 192.168.50.22
Subnet Mask . . . . . . . . . : 255.255.255.0
Default Gateway . . . . . . . . :
Ethernet adapter Npcap Loopback Adapter:
Connection-specific DNS Suffix . :
Link-local IPv6 Address . . . . : fe80::710f:6bbc:5967:de27%10
IPv4 Address . . . . . . . : 192.168.137.1
Subnet Mask . . . . . . . : 255.255.255.0
Default Gateway . . . . . . : 255.255.255.0
```

- 3. Dinamički pridruži mrežne postavke računala za rad u lokalnoj mreži i pristup Internetu.
 - Odabrati dinamičko pridruživanje mrežnih postavki računala

l Interne	Ethernet Properties ×	d Internet > Network Connections > 🗸 🖉 Search Network Connections 🔎
Viev View	Networking Sharing Connect using:	Internet Protocol Version 4 (TCP/IPv4) Properties ×
N Pi Chan	Realtek PCIe GBE Family Controller <u>Configure</u> This connection uses the following items:	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
		 Obtain an IP address automatically ● Use the following IP address: IP address: IP address: IP address: IP address: IP 2 . 168 . 50 . 22 Subnet mask: 255 . 255 . 0 Default gateway: . Obtain DNS server address automatically Obtain DNS server addresses: Proferend DNS server;
	Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.	Alternate DNS server: Alternate DNS server: Validate settings upon exit Advanced

 Naredbom ping provjeriti ispravnost TCP/IP protokola i mrežne kartice na vašem računalu. Koju je naredbu potrebno koristiti?

```
C:\Users\ucenik>ping 127.0.0.1
Pinging 127.0.0.1 with 32 bytes of data:
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Reply from 127.0.0.1: bytes=32 time<1ms TTL=128
Ping statistics for 127.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
Naredbom ping provjeriti dostupnost standardnog izlaza (engl. Default Gateway)</pre>
```

```
C:\Users\ucenik>ping 192.168.50.5
Pinging 192.168.50.5 with 32 bytes of data:
Reply from 192.168.50.5: bytes=32 time<1ms TTL=64
Reply from 192.168.50.5: bytes=32 time<1ms TTL=64
Reply from 192.168.50.5: bytes=32 time<1ms TTL=64
Ping statistics for 192.168.50.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms</pre>
```

Provjeriti pristup Internetu

```
C:\Users\ucenik>ping google.com
Pinging google.com [142.250.184.110] with 32 bytes of data:
Reply from 142.250.184.110: bytes=32 time=31ms TTL=113
Reply from 142.250.184.110: bytes=32 time=31ms TTL=113
Reply from 142.250.184.110: bytes=32 time=31ms TTL=113
Ping statistics for 142.250.184.110:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 31ms, Maximum = 31ms, Average = 31ms
```

Nakon obavljenih zadataka u ovoj vježbi učenik će znati samostalno (ili uz manju pomoć zabilješki):

- Podesiti IPv4 mrežne postavke na računalu i provjeriti ispravnost pristupa Internetu

Provjera znanja:

- 1. Točni odgovori na postavljena pitanja u pripremi 1 bod
- 2. Bilješke i točni odgovori na pitanja iz vježbe 1 bod
- 3. Samostalno podešavanje statičkih mrežnih postavki 2 boda
- 4. Samostalno podešavanje dinamičkih mrežnih postavki 2 boda

2 b – nedovoljan , 3 b – dovoljan, 4 b – dobar, 5 b – vrlo dobar, 6 b - odličan