

**UNIVERZITET U BIHAĆU  
TEHNIČKI FAKULTET  
BIHAĆ**

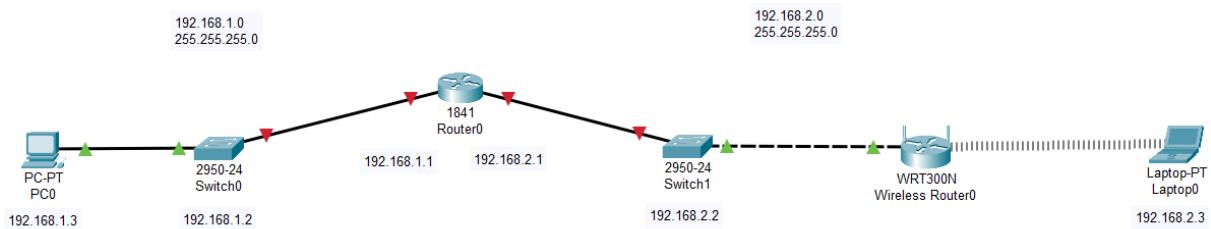
**RAČUNARSKE MREŽE**

**Laboratorijske vježbe**

**CISCO Packet Tracer  
(Vježba 5)**

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Viši asistent**

## PRIMJER 1: Autorizovani pristup mrežnim uređajima



Podešavanje rutera za kraticu *FastEthernet0/0* kroz Command Line Interface (CLI mod)

### Ljeva strana mreže

Screenshot of the Cisco IOS Command Line Interface (CLI) window titled "Router4". The window shows the following configuration steps:

```
Cisco IOS Software, 1841 Software (C1841-ADVISERVICESK9-M),
Version 12.4(15)T1, RELEASE SOFTWARE (fc2)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2007 by Cisco Systems, Inc.
Compiled Wed 18-Jul-07 04:52 by pt_team

--- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: no

Press RETURN to get started!

Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#hostname RT1
RT1(config)#interface fa0/0
RT1(config-if)#ip address 192.168.1.1 255.255.255.0
RT1(config-if)#no shutdown
```

At the bottom of the window, there are buttons for "Copy" and "Paste". Below the window, a status bar displays the message "Ctrl+F6 to exit CLI focus".

## *Podešavanje sata na Ruteru (CLI mod)*

- Provjera trenutnog vremena
  - o **show clock**

```
RT1#show clock
*0:8:55.84 UTC Mon Mar 1 1993
```

## Podešavanje sata

```
RT1> enable
RT1#
RT1# clock set
% Incomplete command.

RT1# clock set ?
hh:mm:ss Current Time

RT1# clock set 17:25:00
% Incomplete command.

RT1# clock set 17:25:00 ?
<1-31> Day of the month
MONTH Month of the year

RT1# clock set 17:25:00 1 JUN?
MONTH

RT1# clock set 17:25:00 1 JUN 2020
RT1#
RT1# show clock
17:28:2.528 UTC Mon Jun 1 2020
```

Sa naredbom **show running-config** možemo vidjeti sve što je na ruteru iskonfigurisano.  
(Vidimo sve postavke osim postavke sata)

## Dodjeljivanje opisa interfejsima

Opis dodjeljujemo sa komandom **description**

Npr. dodat ćemo interfejsu *FastEthernet0/0* opis *LJEVA STRANA MREŽE*

The screenshot shows the CLI window for Router4. The tab bar at the top has 'Physical', 'Config', 'CLI' (which is selected), and 'Attributes'. Below the tabs is the text 'IOS Command Line Interface'. A message 'Press RETURN to get started.' is displayed. The command history shows:

```
RT1>enable
RT1#conf
RT1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
RT1(config)#int
RT1(config)#interface Fas
RT1(config)#interface FastEthernet 0/0
RT1(config-if)#description LJEVA STRANA MREZE
RT1(config-if)#

```

At the bottom of the window, there are 'Copy' and 'Paste' buttons, and a checkbox labeled 'Top'.

Podešavanje rutera za kraticu *FastEthernet0/1* kroz **Command Line Interface (CLI mod)**

## Desna strana mreže

The screenshot shows the CLI window for Router4. The tab bar at the top has 'Physical', 'Config', 'CLI' (selected), and 'Attributes'. Below the tabs is the text 'IOS Command Line Interface'. A message 'Press RETURN to get started.' is displayed. The command history shows:

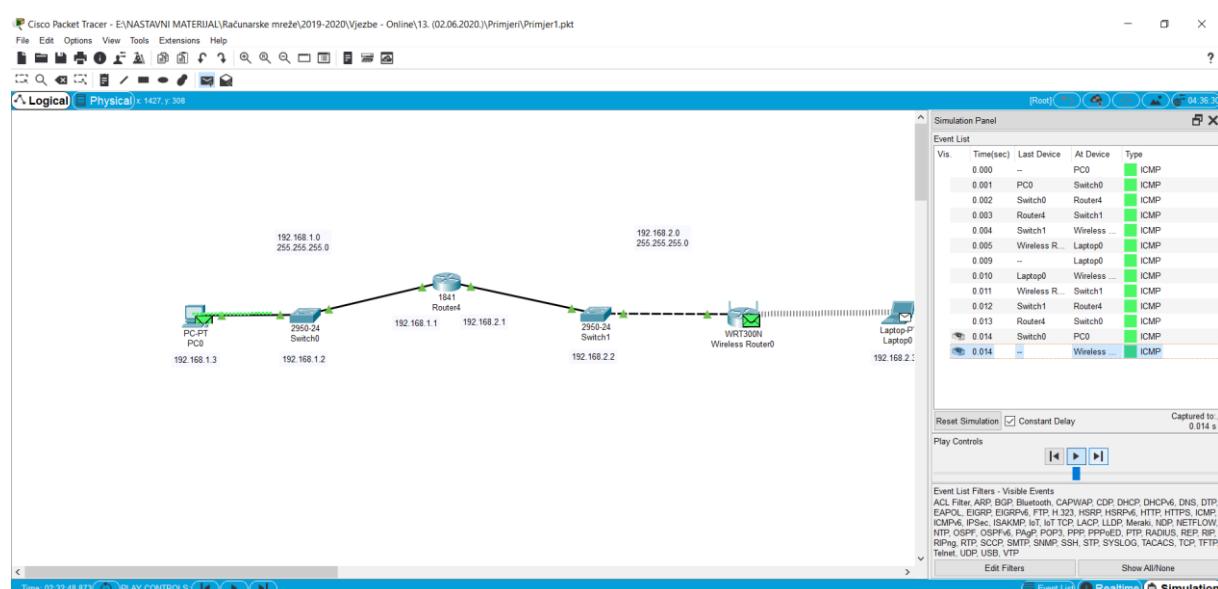
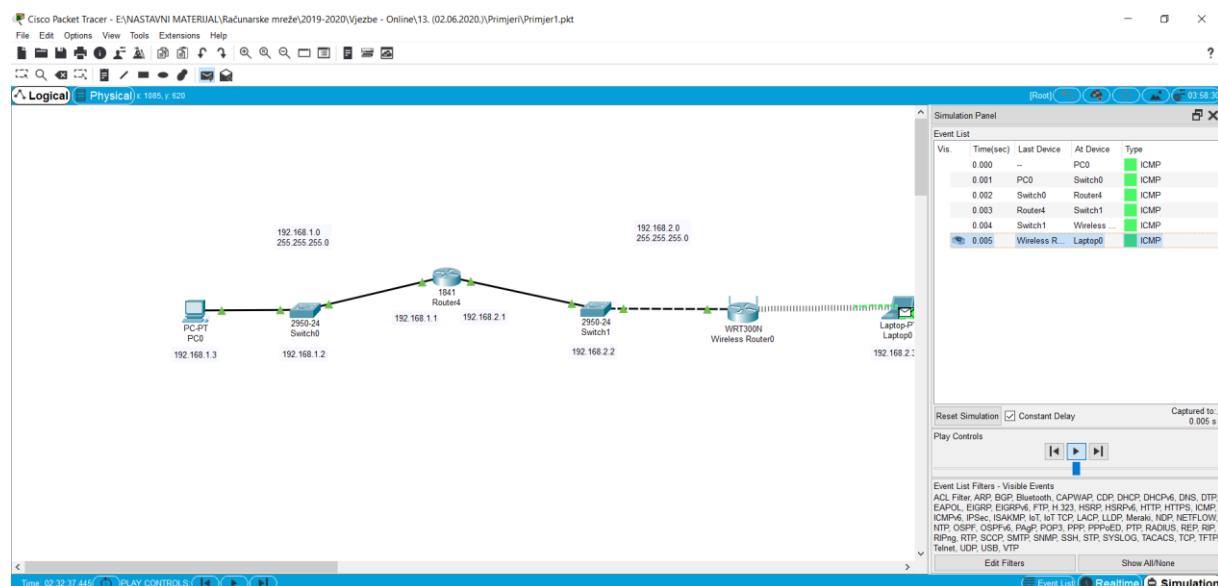
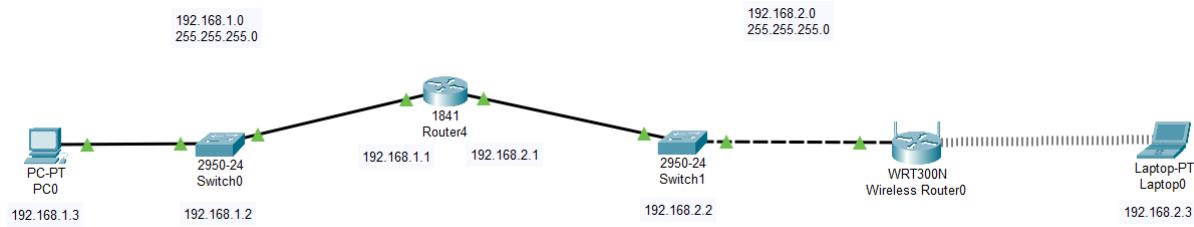
```
RT1>enable
RT1#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
RT1(config)#int
RT1(config)#interface fast
RT1(config)#interface fastEthernet 0/1
RT1(config-if)#desc
RT1(config-if)#description DESNA STRANA MREZE
RT1(config-if)#ip address 192.168.2.1 255.255.255.0
RT1(config-if)#no sh
RT1(config-if)#no shutdown

RT1(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up
RT1(config-if)#

```

At the bottom of the window, there are 'Copy' and 'Paste' buttons, and a checkbox labeled 'Top'.

Prethodnim koracima je konfigurisana i DESNA strana mreže, odnosno konfigurisana je cijela mreža.



## Podešavanje pristupnih šifri na ruter

Imamo dvije vrste šifri (tajni password i javni password)

### Postavka javnog passworda

The screenshot shows the Cisco Network Assistant interface with a window titled "Router4". The tab bar at the top has "Physical", "Config", "CLI" (which is selected), and "Attributes". Below the tabs is a title "IOS Command Line Interface". The main area contains the following configuration output:

```
RT1#show run
Building configuration...
Current configuration : 668 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname RT1
!
!
!
enable password cisco123
!
!
!
!
ip cef
no ipv6 cef
--More--
```

At the bottom of the CLI window, there are "Copy" and "Paste" buttons, and a checkbox labeled "Top".

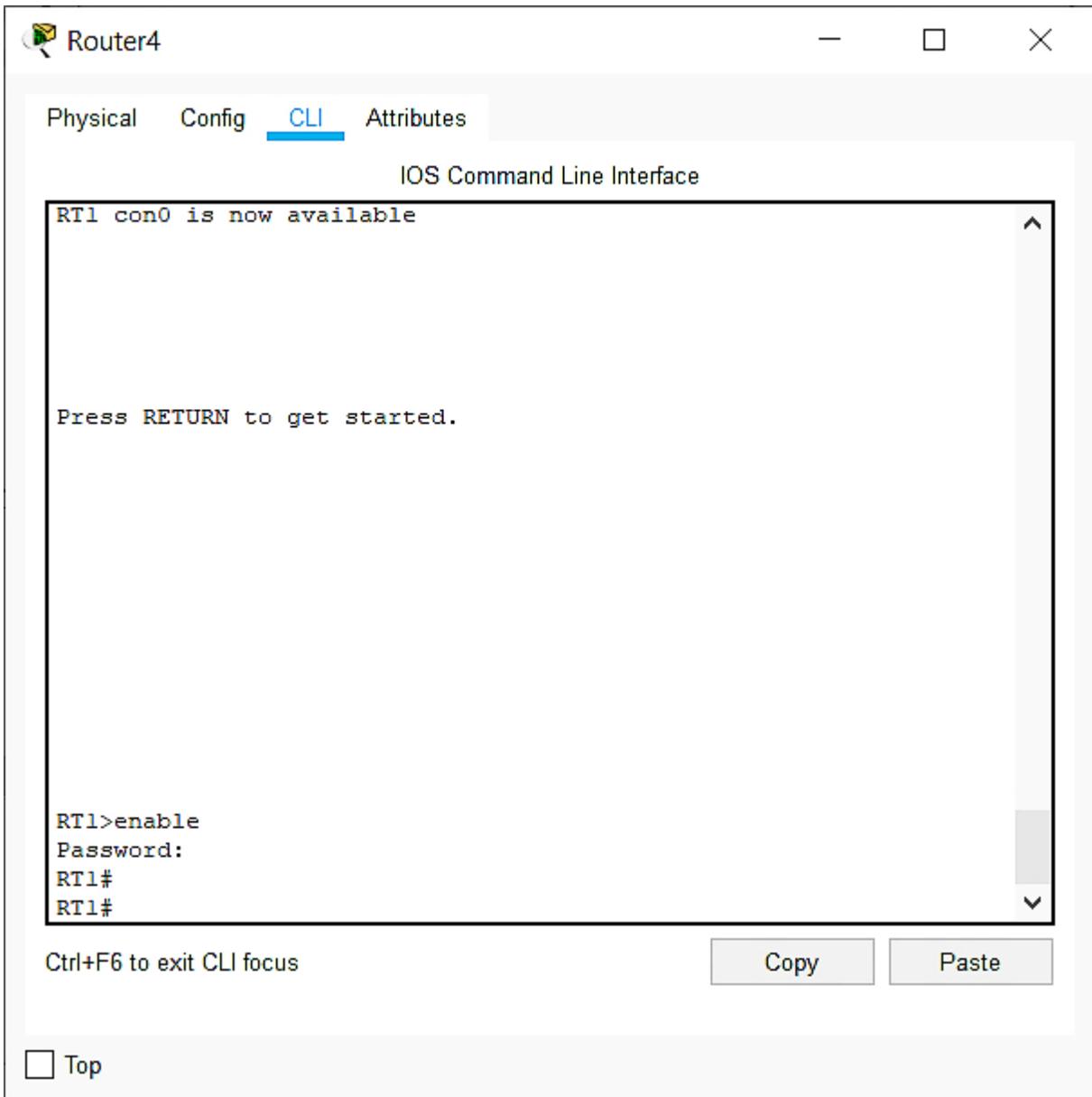
Ovaj javni password je enkriptovan i vidljiv je kroz postavke rutera.

### Postavka tajnog passworda

The screenshot shows the Cisco Network Assistant interface with a window titled "Router4". The tab bar at the top has "Physical", "Config", "CLI" (which is selected), and "Attributes". Below the tabs is a title "IOS Command Line Interface". The main area contains the following configuration output:

```
RT1#show running-config
Building configuration...
Current configuration : 690 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname RT1
!
!
!
enable secret 5 $1$mERr$5.a6P4JqbNiMX0lusIfka/
!
!
!
ip cef
no ipv6 cef
--More--
```

At the bottom of the CLI window, there are "Copy" and "Paste" buttons, and a checkbox labeled "Top".



## Konfigurisanje pristupnog passworda preko konzole

The screenshot shows the Cisco IOS CLI interface for Router4. The title bar says "Router4". The tabs at the top are "Physical", "Config", "CLI" (which is selected), and "Attributes". The main window is titled "IOS Command Line Interface". It displays the following configuration commands:

```
RT1>enable  
Password:  
RT1#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
RT1(config)#line console 0  
RT1(config-line)#password cisco123  
RT1(config-line)#login  
RT1(config-line)#{
```

At the bottom of the window, there are "Copy" and "Paste" buttons, and a checkbox labeled "Top".

## Testiranje postavljenog passworda

The image contains two side-by-side screenshots of the Cisco IOS CLI interface.

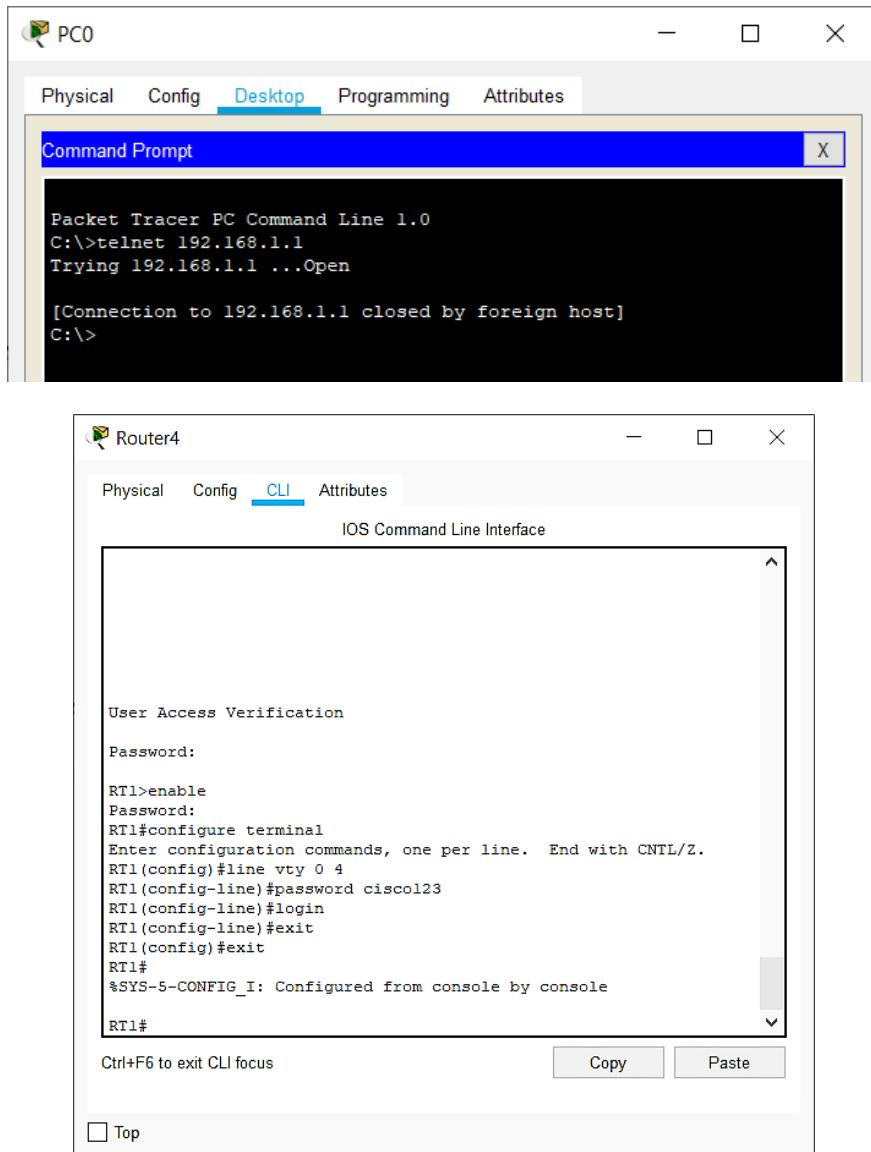
**Left Window:**

- Title bar: Router4
- Tab bar: Physical, Config, **CLI**, Attributes
- Main window title: IOS Command Line Interface
- Content:
  - Press RETURN to get started!
  - User Access Verification
  - Password:
- Bottom buttons: Ctrl+F6 to exit CLI focus, Copy, Paste, Top checkbox

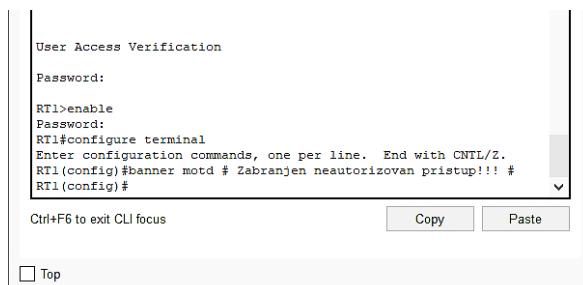
**Right Window:**

- Title bar: Router4
- Tab bar: Physical, Config, **CLI**, Attributes
- Main window title: IOS Command Line Interface
- Content:
  - Press RETURN to get started!
  - User Access Verification
  - Password:
  - RT1>enable
  - RT1#
- Bottom buttons: Ctrl+F6 to exit CLI focus, Copy, Paste, Top checkbox

## Remote konektovanja sa računara na ruter (telnet)



Dodavanje poruke (obavještenja) prilikom telnet-a na ruter



```
C:\>telnet 192.168.1.1
Trying 192.168.1.1 ...Open
[Connection to 192.168.1.1 closed by foreign host]
C:\>
C:\>telnet 192.168.1.1
Trying 192.168.1.1 ...Open

User Access Verification

Password:
RT1>enable
Password:
RT1#exit

[Connection to 192.168.1.1 closed by foreign host]
C:\>telnet 192.168.1.1
Trying 192.168.1.1 ...Open Zabranjen neautorizovan pristup!!!

User Access Verification

Password:
RT1>enable
Password:
RT1#
```

Password koji je unesen za telnet nije kriptovan.

RT1#**show running-command**

```
!
ip classless
!
ip flow-export version 9
!
!
banner motd ^C Zabranjen neautorizovan pristup!!! ^C
!
!
!
!
line con 0
password cisco123
login
!
line aux 0
!
line vty 0 4
password cisco123
login
!
--More--
```

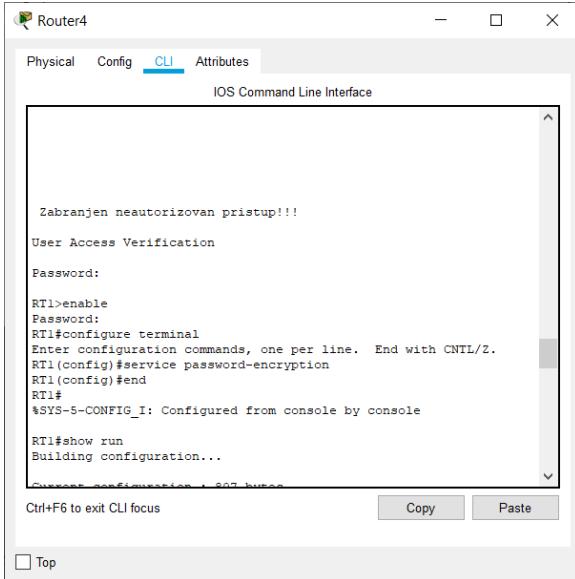
Ctrl+F6 to exit CLI focus

Copy

Paste

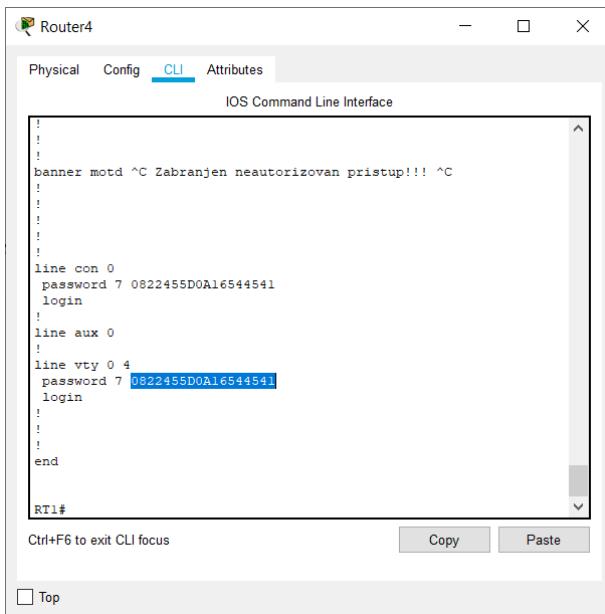
Top

## Kriptovanje telnet passworda algoritmom Type 7



Zabranjen neautorizovan pristup!!!  
User Access Verification  
Password:  
RT1>enable  
Password:  
RT1#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
RT1(config)#service password-encryption  
RT1(config)#end  
RT1#  
%SYS-5-CONFIG\_I: Configured from console by console  
RT1#show run  
Building configuration...  
Current configuration : 207 bytes

RT1#**show running-command**



```
!  
!  
!  
banner motd ^C Zabranjen neautorizovan pristup!!! ^C  
!  
!  
!  
!  
line con 0  
password 7 0822455D0A16544541  
login  
!  
line aux 0  
!  
line vty 0 4  
password 7 0822455D0A16544541  
login  
!  
!  
end  
  
RT1#
```

Nedostatak algoritma Type 7 je što je vrlo slab i vrlo jednostavno ga je „probiti“.

### Provjera slabosti Type 7 algoritma

- Kopiramo password: **0822455D0A16544541**
- Odemo na web browser računara i ukucamo u google: **crack cisco password type 7**
- Otvorimo stranicu (<https://www.ifm.net.nz/cookbooks/passwordcracker.html>)

The screenshot shows a web browser window with the title "IFM - Cisco Password Cracker". The address bar displays "ifm.net.nz/cookbooks/passwordcracker.html". The page header includes the IFM logo and navigation links for HOME, SOLVE MY PROBLEMS, SERVICES, TOOLS, and CONTACT. The main content area is titled "Cisco Password Cracker". A note at the top states: "IFM supplies network engineering services for \$NZ180+GST per hour. If you require assistance with designing or engineering a Cisco network - hire us!" Below this is a note about client-side Javascript: "Note: This page uses client side Javascript. It does not transmit any information entered to IFM." Another note says: "Ever had a type 7 Cisco password that you wanted to crack/break? This piece of Javascript was inspired by the WWW page <http://insecure.org/sploits/cisco.passwords.html>. The passwords will be in lines like:" followed by two examples: "enable password 7 095C4F1A0A1218000F" and "username user password 7 12090404011C03162E". A instruction below says: "Take the type 7 password, such as the text above in red, and paste it into the box below and click "Crack Password". Below this are three input fields: "Type 7 Password:" containing "0822455D0A16544541", a "Crack Password" button, and "Plain text:" containing "cisco123".

Type 7 Password:

Plain text: