

به نام خدا

گزارش آزمایش هشتم

دستیار آموزشی

آقای سیامکی

اعضای گروه

محمدمهری میرزا

۹۹۱۷۱۰۲۲

نگار باباشه

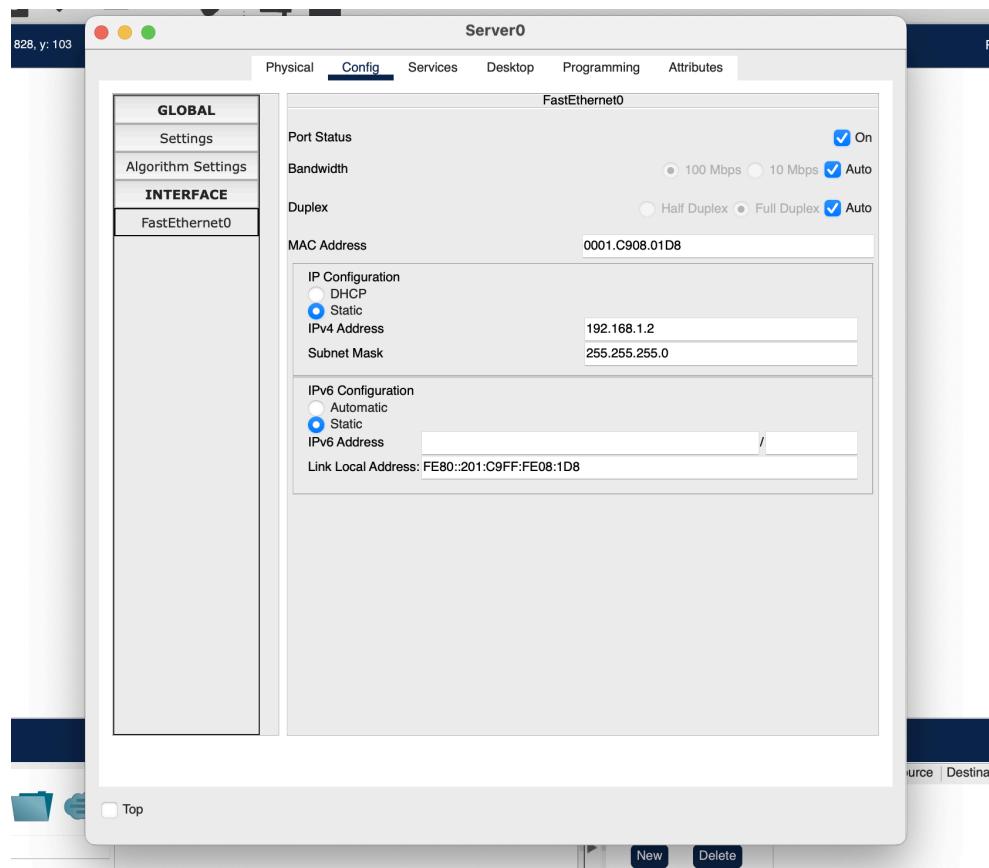
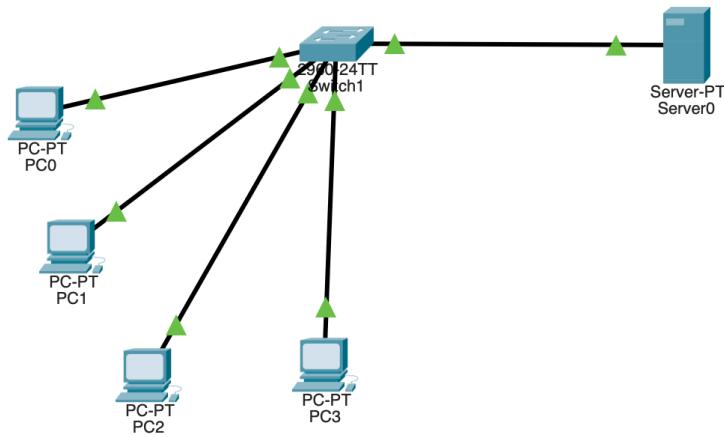
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ایمان محمدی

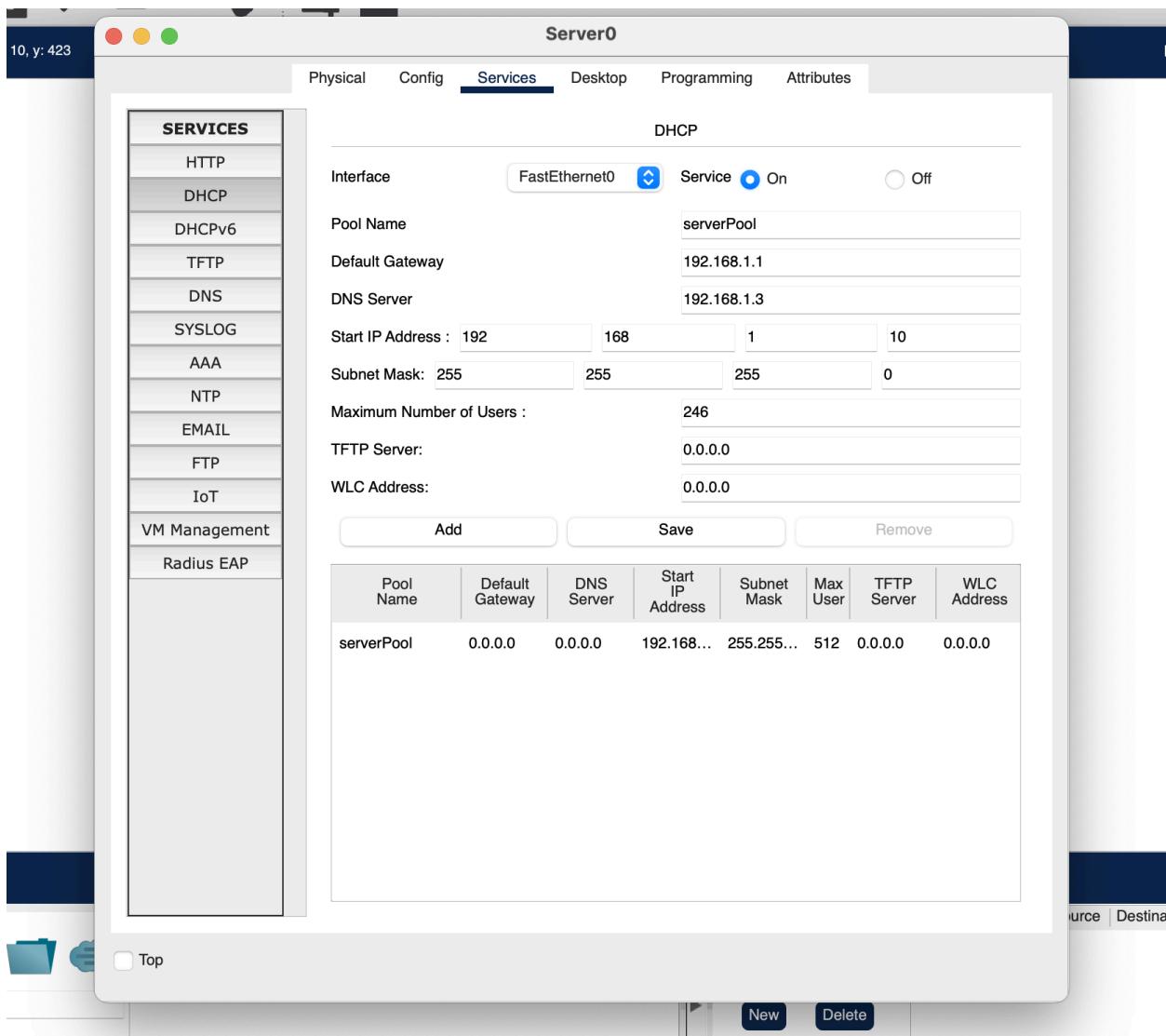
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نیمسال تابستان ۱۴۰۳

در ابتدا یک شبکه حاوی ۴ تا pc، یک سرور و یک سوییچ می‌سازیم. سپس آیپی سرور را تنظیم می‌کنیم.



در تصویر بالا مشخص شده است که آیپی ۱۹۲.۱۶۸.۱.۲ سنت شده است.
حال تنظیمات DHCP سرور رو انجام می‌دهیم.



که بعد از save کردن به شکل زیر در خواهد آمد.

2, y: 403

Server0

Physical Config Services Desktop Programming Attributes

SERVICES

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DHCP

Interface: FastEthernet0 Service: On Off

Pool Name: serverPool

Default Gateway: 192.168.1.1

DNS Server: 192.168.1.3

Start IP Address : 192 168 1 10

Subnet Mask: 255 255 255 0

Maximum Number of Users : 246

TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168...	192.168...	192.168...	255.255...	246	0.0.0.0	0.0.0.0

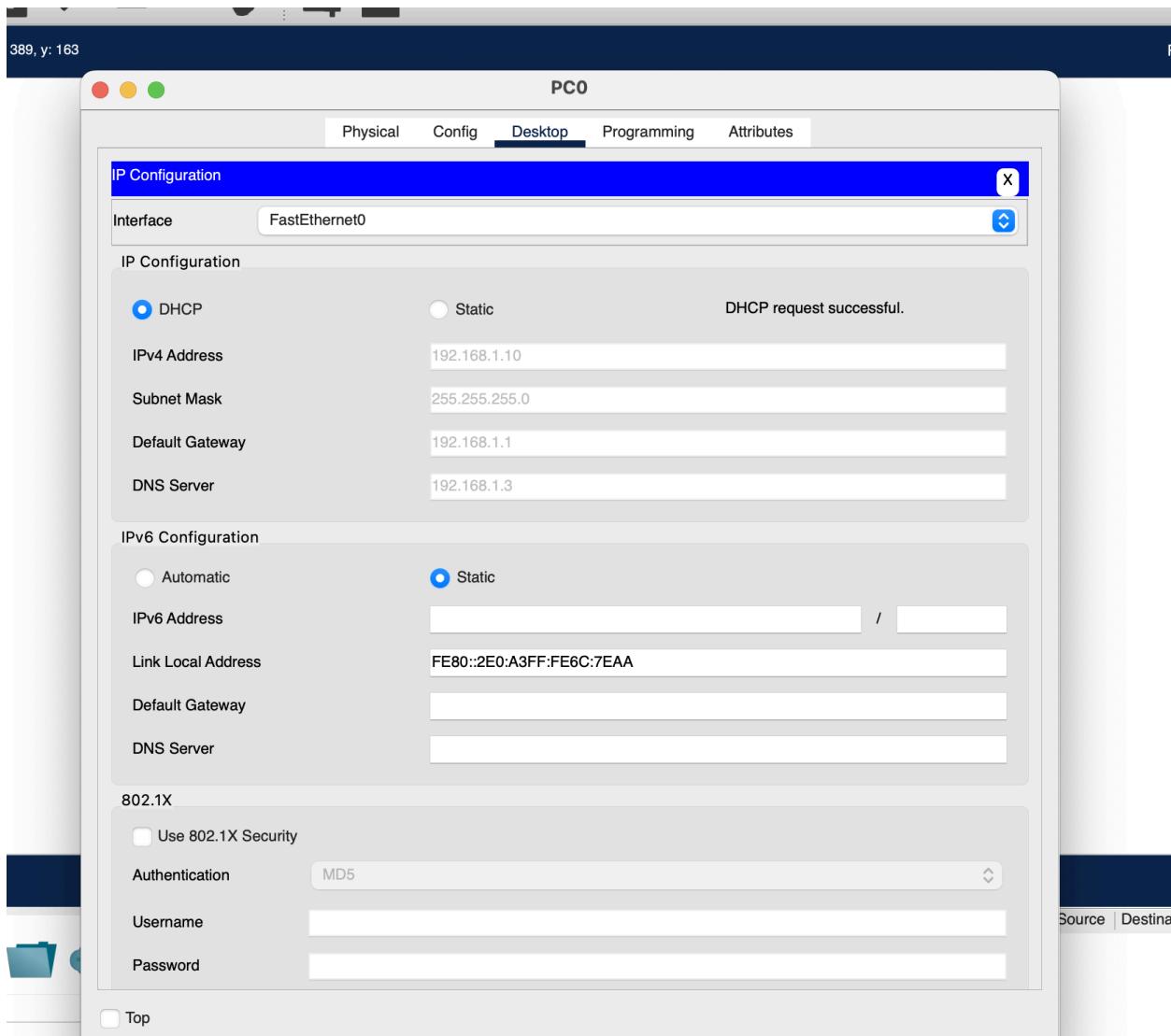
Top

New Delete

Source | Destina

The screenshot shows a software interface for managing network services on a device named 'Server0'. The 'Services' tab is selected, specifically the 'DHCP' section. The configuration includes an interface set to 'FastEthernet0', a service status of 'On', and a pool name of 'serverPool'. Other settings include a default gateway of '192.168.1.1', a DNS server at '192.168.1.3', and a subnet mask of '255.255.255.0'. The maximum number of users is set to 246. Below the configuration form is a table showing the current DHCP pool settings. A 'Top' checkbox is checked, and there are 'New' and 'Delete' buttons at the bottom.

حال به یکی از PC‌ها می‌رویم و نتیجه رو مشاهده می‌کنیم.



مشاهده می‌کنیم که PC با موفقیت توانست آی‌پی دریافت کند.
در گام بعد آی‌پی تمام PC‌ها را رو آزاد می‌کنیم.

```
C:\>ipconfig /release
IP Address.....: 0.0.0.0
Subnet Mask....: 0.0.0.0
Default Gateway.: 0.0.0.0
DNS Server.....: 0.0.0.0
```

حال به CLI سوئیچ می‌رویم و در مرحله اول مشاهده می‌کنیم که snooping غیرفعال است و سپس آنرا فعال می‌کنیم و در نهایت بررسی می‌کنیم که فعال شده باشد.

Switch1

Physical Config CLI Attributes

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to up

Switch>en
Switch#sh
% Incomplete command.
Switch#show ip dhcp sn
Switch DHCP snooping is disabled
DHCP snooping is configured on following VLANs:
none
Insertion of option 82 is enabled
Option 82 on untrusted port is not allowed
Verification of hwaddr field is enabled
Interface          Trusted      Rate limit (pps)
-----
Switch# conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#ip dh
% Incomplete command.
Switch(config)#ip dhcp snooping
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show ip dhcp sn
Switch DHCP snooping is enabled
DHCP snooping is configured on following VLANs:
none
Insertion of option 82 is enabled
Option 82 on untrusted port is not allowed
Verification of hwaddr field is enabled
Interface          Trusted      Rate limit (pps)
-----
Switch#
```

Copy Paste

Source | Destina

Top

Toggle PDU List Window

حال تعریف میکنیم تا برای کدام VLAN فعال باشد.

The screenshot shows a Cisco Switch interface titled "Switch1". The top navigation bar includes tabs for "Physical", "Config", "CLI" (which is selected), and "Attributes". Below the tabs is a section titled "IOS Command Line Interface". The main area contains the following CLI session output:

```
Switch# conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#ip dhc
% Incomplete command.
Switch(config)#ip dhcp snooping
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show ip dhcp sn
Switch DHCP snooping is enabled
DHCP snooping is configured on following VLANs:
none

Insertion of option 82 is enabled
Option 82 on untrusted port is not allowed
Verification of hwaddr field is enabled
Interface      Trusted     Rate limit (pps)
-----
Switch#cong t
^
% Invalid input detected at '^' marker.

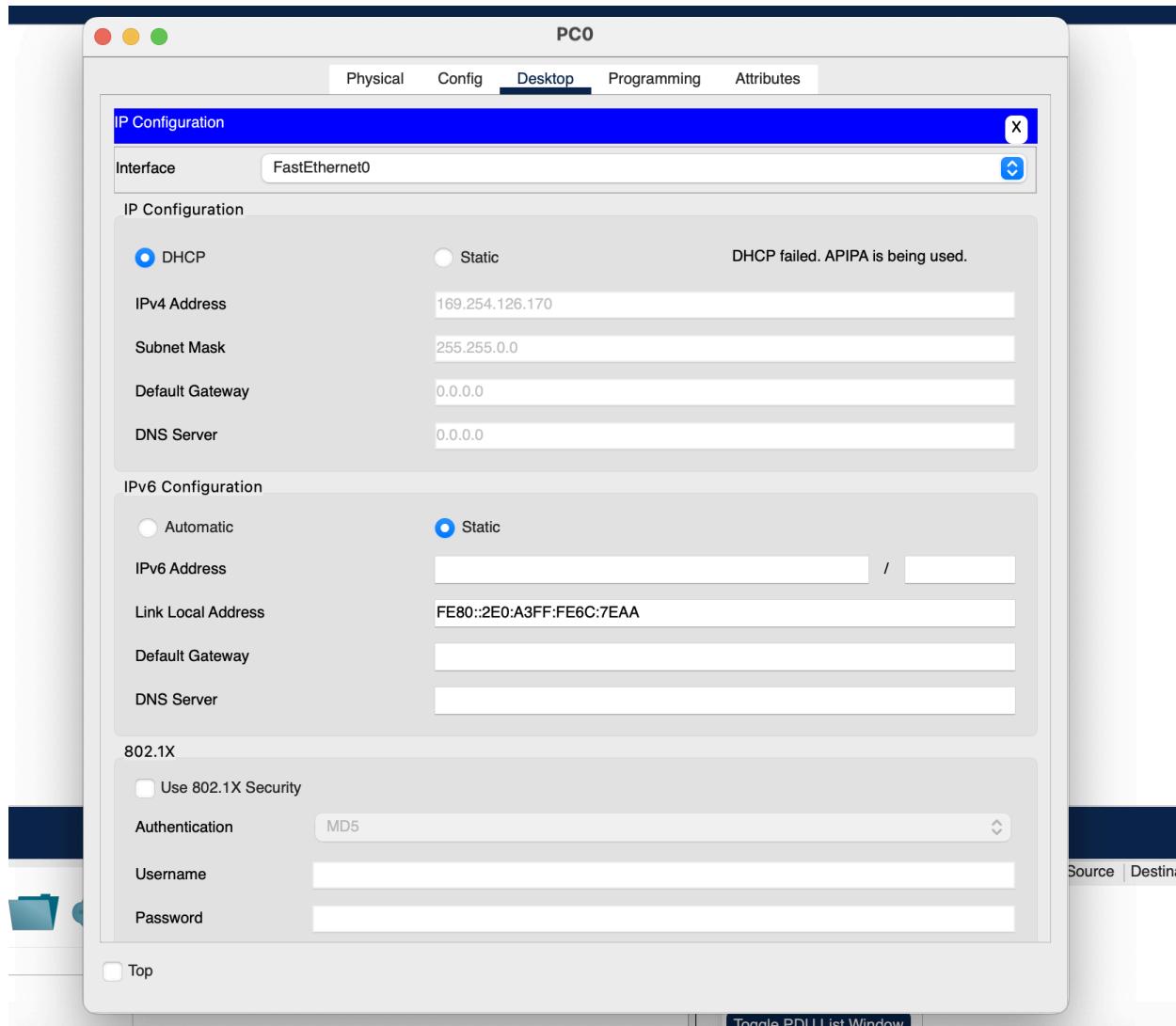
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#show ip shcp sno
Switch(config)#show ip shcp sno
Switch(config)#show ip shcp snooping vlan 1
^
% Invalid input detected at '^' marker.

Switch(config)#ip dhcp snooping vlan 1
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show ip dhcp sn
Switch DHCP snooping is enabled
DHCP snooping is configured on following VLANs:
1
Insertion of option 82 is enabled
Option 82 on untrusted port is not allowed
Verification of hwaddr field is enabled
Interface      Trusted     Rate limit (pps)
-----
Switch#
```

At the bottom right of the CLI window are "Copy" and "Paste" buttons. To the left of the window, there is a small icon of a folder or document. On the far right, there are "Source" and "Destina" buttons.

همان‌طور که مشخص است VLAN یک سنت شده است.
حال تست می‌کنیم که PC‌ها می‌توانند آی‌پی بگیرند یا خیر.



همان‌طور که مشخص است PC نتوانست آی‌پی دریافت کند.
حال پورتی که سرور و سوییچ با یکدیگر ارتباط دارن رو trust می‌کنیم.

The screenshot shows a Cisco Switch CLI interface titled "Switch0". The tab bar at the top includes "Physical", "Config", "CLI" (which is selected), and "Attributes". Below the tabs is a section titled "IOS Command Line Interface". The terminal window displays the following configuration commands:

```
%LINK-3-UPDOWN: Interface FastEthernet0/5, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to down
%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to up

Switch#
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface fastEthernet 0/5
^
% Invalid input detected at '^' marker.

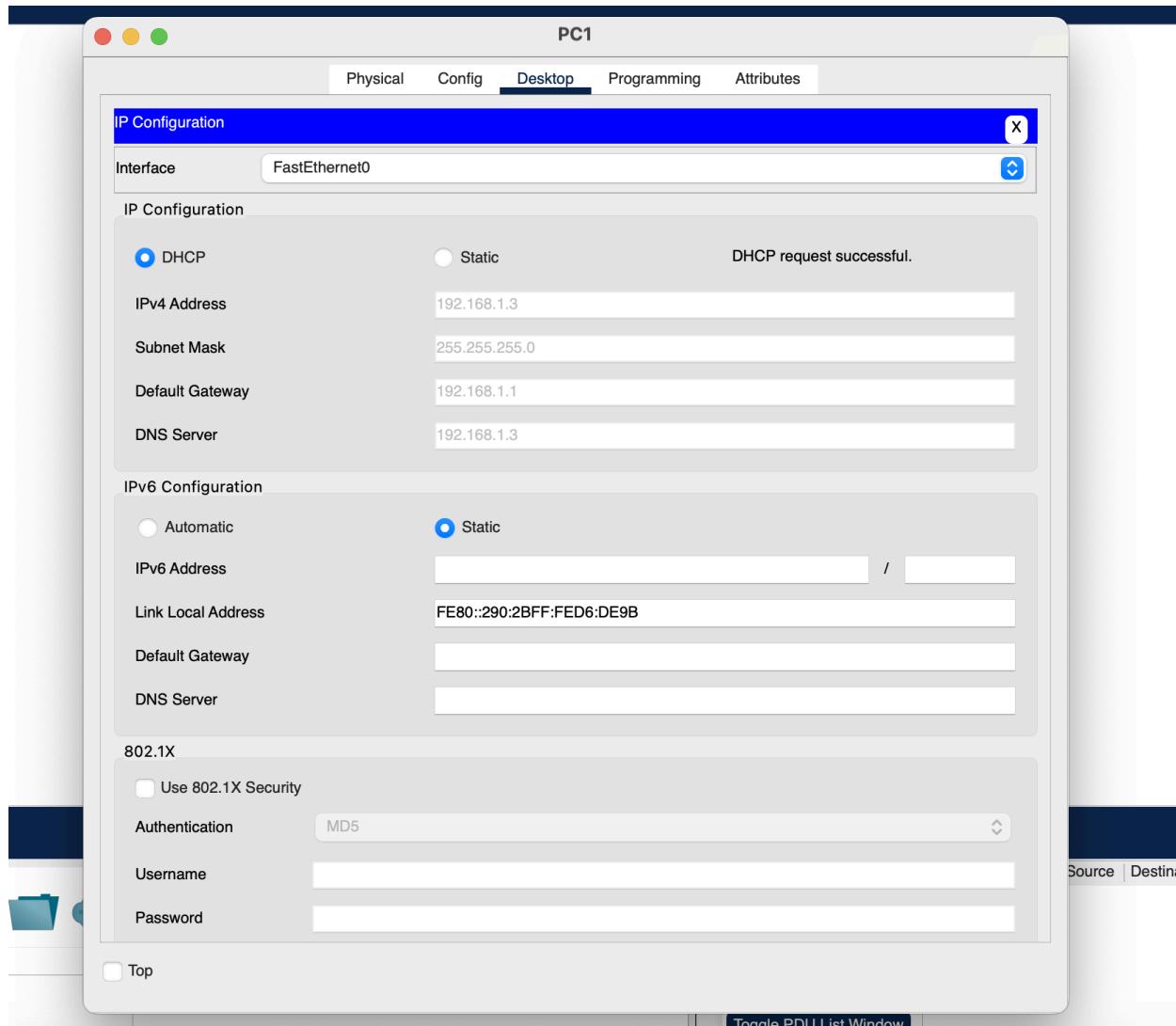
Switch(config)#
%LINK-3-UPDOWN: Interface FastEthernet0/5, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to down
%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to up

Switch(config)#
Switch(config)#inter
Switch(config)#interface f
Switch(config)#interface fastEthernet 0/5
Switch(config-if)#ip dhcp snoo
Switch(config-if)#ip dhcp snooping tr
Switch(config-if)#ip dhcp snooping trust
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show ip dhcp
% Incomplete command.
Switch#show ip dhcp snooping
Switch DHCP snooping is enabled
DHCP snooping is configured on following VLANs:
1
Insertion of option 82 is enabled
Option 82 on untrusted port is not allowed
Verification of hwaddr field is enabled
-----
Interface      Trusted     Rate limit (pps)
-----
FastEthernet0/1    no        unlimited
FastEthernet0/5    yes       unlimited
Switch#
```

At the bottom right of the terminal window are "Copy" and "Paste" buttons. To the right of the terminal window, there are "Source" and "Destina" buttons. At the bottom left, there is a "Top" button. A "Toggle PDU List Window" button is located at the bottom center.

در گام بعد dhcp رو با یکی از PC ها تست می کنیم.



همان‌طور که مشاهده می‌کنیم به درستی کار می‌کند.
در نهایت می‌توانیم آدرس‌های bind شده را مشاهده کنیم.

Switch0

Physical Config **CLI** Attributes

IOS Command Line Interface

```

Switch#
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#interface fastEthernet 0/5
           ^
% Invalid input detected at '^' marker.

Switch(config)#
%LINK-3-UPDOWN: Interface FastEthernet0/5, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to down

%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to up

Switch(config)#
Switch(config)#inter
Switch(config)#interface f
Switch(config)#interface fastEthernet 0/5
Switch(config-if)#ip dhcp snoo
Switch(config-if)#ip dhcp snooping tr
Switch(config-if)#ip dhcp snooping trust
Switch(config-if)#exit
Switch(config)#exit
Switch#
%SYS-5-CONFIG_I: Configured from console by console

Switch#show ip dhcp
% Incomplete command.
Switch#show ip dhcp snooping
Switch DHCP snooping is enabled
DHCP snooping is configured on following VLANs:
1
Insertion of option 82 is enabled
Option 82 on untrusted port is not allowed
Verification of hwaddr field is enabled
Interface      Trusted     Rate limit (pps)
-----
FastEthernet0/1    no        unlimited
FastEthernet0/5    yes       unlimited
Switch#show ip dhcp snoo
Switch#show ip dhcp snooping bi
Switch#show ip dhcp snooping binding
MacAddress      IpAddress      Lease(sec)  Type      VLAN  Interface
-----
00:03:E4:C2:5D:0D  192.168.1.1   86400    dhcp-snooping  1    FastEthernet0/1
00:90:2B:D6:DE:9B  192.168.1.3   86400    dhcp-snooping  1    FastEthernet0/2
Total number of bindings: 2
Switch#

```

Copy **Paste**

Top

Source | Destina

Toggle PDU List Window