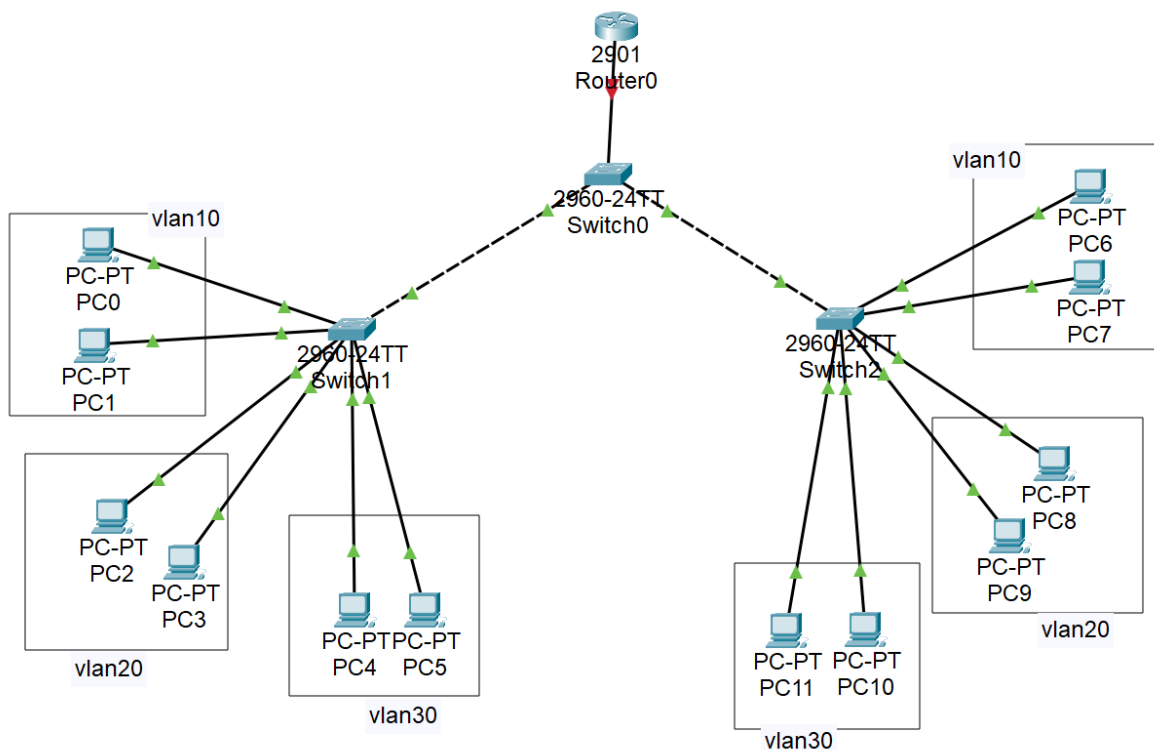


گزارش آزمایشگاه سری 8 و 9 شبکه

عرفان رفیعی اسکویی – 98243027

(1)



(2)

Switch(config)#hostname sw2 sw2(config)#	Switch(config)#hostname sw0 sw0(config)#	Switch(config)#hostname sw1 sw1(config)#
---	---	---

(3)

```
sw1(config)#
sw1(config)#vtp mode client
Setting device to VTP CLIENT mode.
sw1(config)#
```

```
sw0(config)#
sw0(config)#vtp mode server
Device mode already VTP SERVER.
sw0(config)#
```

```
sw2(config)#
sw2(config)#vtp mode client
Setting device to VTP CLIENT mode.
sw2(config)#
```

```
sw1(config)#interface fastEthernet 0/1
sw1(config-if)#no
sw1(config-if)#no sh
sw1(config-if)#no shutdown
sw1(config-if)#swit
sw1(config-if)#switchport mo
sw1(config-if)#switchport mode trunk

sw1(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface
FastEthernet0/1, changed state to up
```

```
sw0(config)#interface fastEthernet 0/3
sw0(config-if)#swit
sw0(config-if)#switchport mo
sw0(config-if)#switchport mode tru
sw0(config-if)#switchport mode trunk
```

```
sw0(config)#interface fastEthernet 0/2
sw0(config-if)#no
sw0(config-if)#no sh
sw0(config-if)#no shutdown
sw0(config-if)#swi
sw0(config-if)#switchport mo
sw0(config-if)#switchport mode tru
sw0(config-if)#switchport mode trunk
```

```
sw2(config)#interface fastEthernet 0/1
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#n
sw2(config-if)#no sh
sw2(config-if)#no shutdown
sw2(config-if)#
sw2(config-if)#
sw2(config-if)#swi
sw2(config-if)#switchport m
sw2(config-if)#switchport mode tr
sw2(config-if)#switchport mode trunk
```

```
sw0(config)#
sw0(config)#vtp domain netlab
Changing VTP domain name from NULL to netlab
```

```
sw1(config)#
sw1(config)#vtp domain netlab
Domain name already set to netlab.
```

در server یا همان سویچ 0 فعالشان میکنیم :

```
sw0(config)#
sw0(config)#vlan 10
sw0(config-vlan)#ex
sw0(config-vlan)#exit
sw0(config)#vlan 20
sw0(config-vlan)#ex
sw0(config-vlan)#exit
sw0(config)#vlan 30
sw0(config-vlan)#ex
sw0(config-vlan)#exit
sw0(config)#
```

VLAN Name	Status	Ports
1 default	active	Fa0/1, Fa0/4, Fa0/5, Fa0/6, Fa0/7, Fa0/8, Fa0/9, Fa0/10, Fa0/12, Fa0/13, Fa0/14, Fa0/16, Fa0/17, Fa0/18, Fa0/20, Fa0/21, Fa0/22, Fa0/24, Gig0/1, Gig0/2
10 VLAN0010	active	
20 VLAN0020	active	
30 VLAN0030	active	
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

sw0#
sw0#

در بخش کلاینت داریم :

VLAN Name	Status	Ports
1 default	active	Fa0/2, Fa0/3, Fa0/4, Fa0/5, Fa0/6, Fa0/7, Fa0/8, Fa0/9, Fa0/11, Fa0/12, Fa0/13, Fa0/14, Fa0/15, Fa0/16, Fa0/17, Fa0/18, Fa0/19, Fa0/20, Fa0/21, Fa0/22, Fa0/23, Fa0/24, Gig0/1, Gig0/2
10 VLAN0010	active	
20 VLAN0020	active	
30 VLAN0030	active	
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

sw1#
sw1#

```

sw1(config)#
sw1(config)#interface fa
sw1(config)#interface fastEthernet 0/2
sw1(config-if)#sw
sw1(config-if)#switchport mo
sw1(config-if)#switchport mode ac
sw1(config-if)#switchport mode access
sw1(config-if)#s
sw1(config-if)#sw
sw1(config-if)#switchport ac
sw1(config-if)#switchport access vla
sw1(config-if)#switchport access vlan 10
sw1(config-if)#

```

```

sw1(config)#
sw1(config)#in
sw1(config)#interface fas
sw1(config)#interface fastEthernet 0/3
sw1(config-if)#sw
sw1(config-if)#switchport m
sw1(config-if)#switchport mode ac
sw1(config-if)#switchport mode access
sw1(config-if)#sw
sw1(config-if)#switchport a
sw1(config-if)#switchport access vl
sw1(config-if)#switchport access vlan 10
sw1(config-if)#

```

```

sw1(config)#in
sw1(config)#interface fas
sw1(config)#interface fastEthernet 0/4
sw1(config-if)#sw
sw1(config-if)#switchport mo
sw1(config-if)#switchport mode ac
sw1(config-if)#switchport mode access
sw1(config-if)#sw
sw1(config-if)#switchport a
sw1(config-if)#switchport access v
sw1(config-if)#switchport access vlan 20
sw1(config-if)#

```

```

sw1(config)#in
sw1(config)#interface fas
sw1(config)#interface fastEthernet 0/5
sw1(config-if)#sw
sw1(config-if)#switchport m
sw1(config-if)#switchport mode ac
sw1(config-if)#switchport mode access
sw1(config-if)#sw
sw1(config-if)#switchport ac
sw1(config-if)#switchport access vl
sw1(config-if)#switchport access vlan 20
sw1(config-if)#

```

```

sw1(config)#in
sw1(config)#interface fa
sw1(config)#interface fastEthernet 0/6
sw1(config-if)#sw
sw1(config-if)#switchport m
sw1(config-if)#switchport mode ac
sw1(config-if)#switchport mode access
sw1(config-if)#sw
sw1(config-if)#switchport ac
sw1(config-if)#switchport access vl
sw1(config-if)#switchport access vlan 30
sw1(config-if)#

```

```

sw1(config)#in
sw1(config)#interface fas
sw1(config)#interface fastEthernet 0/7
sw1(config-if)#sw
sw1(config-if)#switchport m
sw1(config-if)#switchport mode ac
sw1(config-if)#switchport mode access
sw1(config-if)#sw
sw1(config-if)#switchport ac
sw1(config-if)#switchport access vl
sw1(config-if)#switchport access vlan 30

```

برای سوییچ دوم نیز همین کار را کردیم.

(7

VLAN Name	Status	Ports
1 default	active	Fa0/8, Fa0/9,
Fa0/10, Fa0/11		Fa0/12,
Fa0/13, Fa0/14, Fa0/15		Fa0/16,
Fa0/17, Fa0/18, Fa0/19		Fa0/20,
Fa0/21, Fa0/22, Fa0/23		Fa0/24,
Gig0/1, Gig0/2		
10 VLAN0010	active	Fa0/2, Fa0/3
20 VLAN0020	active	Fa0/4, Fa0/5
30 VLAN0030	active	Fa0/6, Fa0/7
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

VLAN Name	Status	Ports
1 default	active	Fa0/8, Fa0/9,
Fa0/10, Fa0/11		Fa0/12,
Fa0/13, Fa0/14, Fa0/15		Fa0/16,
Fa0/17, Fa0/18, Fa0/19		Fa0/20,
Fa0/21, Fa0/22, Fa0/23		Fa0/24,
Gig0/1, Gig0/2		
10 VLAN0010	active	Fa0/2, Fa0/3
20 VLAN0020	active	Fa0/4, Fa0/5
30 VLAN0030	active	Fa0/6, Fa0/7
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

sw2#

(8)

خیر هیچ کامپیوتری به دیگری دسترسی ندارد زیرا هیچ ip address ای تعریف نکردیم برای هیچکدام پس همه request time out میدهند.

(9)

```
sw1(config)#int  
sw1(config)#interface vl  
sw1(config)#interface vlan 10  
sw1(config-if)#  
%LINK-5-CHANGED: Interface Vlan10, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan10,  
changed state to up  
  
sw1(config-if)#  
sw1(config-if)#  
sw1(config-if)#  
sw1(config-if)#n  
sw1(config-if)#no sh  
sw1(config-if)#no shutdown  
sw1(config-if)#  
sw1(config-if)#  
sw1(config-if)#ip add  
sw1(config-if)#ip address 192.168.10.2 255.255.255.0  
sw1(config-if)#ip de  
sw1(config-if)#ip def  
sw1(config-if)#ip defau  
sw1(config-if)#ip defau  
sw1(config-if)#ip default-g  
sw1(config-if)#ip default-gateway 192.168.10.1  
sw1(config)#
```

```
sw1(config)#interface vl  
sw1(config)#interface vlan 20  
sw1(config-if)#  
%LINK-5-CHANGED: Interface Vlan20, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan20,  
changed state to up  
  
sw1(config-if)#  
sw1(config-if)#  
sw1(config-if)#no  
sw1(config-if)#no  
% Incomplete command.  
sw1(config-if)#no  
sw1(config-if)#no sh  
sw1(config-if)#no shutdown  
sw1(config-if)#  
sw1(config-if)#ip address 192.168.20.2 255.255.255.0  
sw1(config-if)#ip default-gateway 192.168.20.1  
sw1(config-if)#
```

```
sw1(config)#interface vlan 30  
sw1(config-if)#  
%LINK-5-CHANGED: Interface Vlan30, changed state to up  
  
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan30,  
changed state to up  
  
sw1(config-if)#  
sw1(config-if)#no  
sw1(config-if)#no  
% Incomplete command.  
sw1(config-if)#no sh  
sw1(config-if)#no shutdown  
sw1(config-if)#ip address 192.168.30.2 255.255.255.0  
sw1(config-if)#ip default-gateway 192.168.30.1  
sw1(config)#
```

```

!
interface Vlan10
 ip address 192.168.10.2 255.255.255.0
!
interface Vlan20
 ip address 192.168.20.2 255.255.255.0
!
interface Vlan30
 ip address 192.168.30.2 255.255.255.0
!
ip default-gateway 192.168.30.1
!

```

(10

```

sw0(config)#d
sw0(config)#ip dh
sw0(config)#ip dhcp po
sw0(config)#ip dhcp pool vl
sw0(config)#ip dhcp pool vlan10
sw0(dhcp-config)#ne
sw0(dhcp-config)#network 192.168.10.0 255.255.255.0
sw0(dhcp-config)#def
sw0(dhcp-config)#default-router 192.168.10.1
sw0(dhcp-config)#ex
sw0(dhcp-config)#exit
sw0(config)#ip
sw0(config)#ip dhc
sw0(config)#ip dhcp exc
sw0(config)#ip dhcp excluded-address 192.168.10.1 192.168.10.10
sw0(config)#

```

```

sw0#show running-config
Building configuration...

Current configuration : 1468 bytes
!
version 15.0
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname sw0
!
!
ip dhcp excluded-address 192.168.10.1 192.168.10.10
!
ip dhcp pool vlan10
 network 192.168.10.0 255.255.255.0
 default-router 192.168.10.1
!

```

```

sw0(config)#ip dhcp pool vl
sw0(config)#ip dhcp pool vlan20
sw0(dhcp-config)#net
sw0(dhcp-config)#network 192.168.20.0 255.255.255.0
sw0(dhcp-config)#def
sw0(dhcp-config)#default-router 192.168.20.1
sw0(dhcp-config)#ex
sw0(dhcp-config)#exit
sw0(config)#ip
sw0(config)#ip dh
sw0(config)#ip dhcp exc
sw0(config)#ip dhcp excluded-address 192.168.20.1 192.168.20.10
sw0(config)#

```

```
sw0(config)#ip dhcp pool vlan30
sw0(dhcp-config)#ne
sw0(dhcp-config)#network 192.168.30.0 255.255.255.0
sw0(dhcp-config)#def
sw0(dhcp-config)#default-router 192.168.30.1
sw0(dhcp-config)#ex
sw0(dhcp-config)#exit
sw0(config)#ip
sw0(config)#ip dh
sw0(config)#ip dhcp exc
sw0(config)#ip dhcp excluded-address 192.168.30.1 192.168.30.10
sw0(config)#
```

(11

PC0

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 192.168.10.11

Subnet Mask 255.255.255.0

Default Gateway 192.168.10.1

DNS Server 0.0.0.0

IPv6 Configuration

PC1

Physical Config Desktop Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☒ DHCP ☐ Static DHCP request successful.

IPv4 Address 192.168.10.12

Subnet Mask 255.255.255.0

Default Gateway 192.168.10.1

DNS Server 0.0.0.0

(12)

```
sw0(config)#use
sw0(config)#username netlab secret 123
sw0(config)#lin
sw0(config)#line vt
sw0(config)#line vty 0 15
sw0(config-line)#log
sw0(config-line)#login local
sw0(config-line)#
sw0(config-line)#
sw0(config-line)#
sw0(config-line)#
sw0(config-line)#ex
sw0(config-line)#ex
% Ambiguous command: "ex"
sw0(config-line)#exi
sw0(config-line)#exit
sw0(config)#enable secret 123
sw0(config)#
```

```
sw1#conf terminal
Enter configuration commands, one per line. End with CNTL/Z.
sw1(config)#
sw1(config)#
sw1(config)#
sw1(config)#use
sw1(config)#username netlab secret 123
sw1(config)#line vty 0 15
sw1(config-line)#log
sw1(config-line)#login local
sw1(config-line)#exi
sw1(config-line)#exit
sw1(config)#enable secret 123
sw1(config)#
```

```
C:\>telnet 192.168.10.2
Trying 192.168.10.2 ...Open

User Access Verification

Username: netlab
Password:
sw1>
sw1>
sw1>en
sw1>enable
Password:
Password:
sw1#
```

(13)

```
sw1(config)#
sw1(config)#line vty 0 15
sw1(config-line)#tr
sw1(config-line)#transport i
sw1(config-line)#transport input ssh
sw1(config-line)#
```

```
sw2(config)#
sw2(config)#line vty 0 15
sw2(config-line)#tr
sw2(config-line)#transport in
sw2(config-line)#transport input ssh
sw2(config-line)#
sw2(config-line)#
```

```
C:\>telnet 192.168.10.2
Trying 192.168.10.2 ...Open

[Connection to 192.168.10.2 closed by foreign host]
C:\>
```

```
Cisco Packet Tracer PC Command Line 1.0
C:\>telnet 192.168.20.2
Trying 192.168.20.2 ...Open

[Connection to 192.168.20.2 closed by foreign host]
C:\>
```

```
Cisco Packet Tracer PC Command Line 1.0
C:\>telnet 192.168.30.2
Trying 192.168.30.2 ...Open

[Connection to 192.168.30.2 closed by foreign host]
C:\>
```

(14

```
sw0(config)#ip domain-
sw0(config)#ip domain-name netlab.com
sw0(config)#cr
sw0(config)#crypto ke
sw0(config)#crypto key ge
sw0(config)#crypto key generate rsa
The name for the keys will be: sw0.netlab.com
Choose the size of the key modulus in the range of 360 to
2048 for your
  General Purpose Keys. Choosing a key modulus greater than
512 may take
  a few minutes.

How many bits in the modulus [512]: 1024
% Generating 1024 bit RSA keys, keys will be non-
exportable...[OK]
sw0(config)#
```

```
sw0(config)#ip ssh version 2
sw0(config)#
```

```
C:\>ssh -l netlab 192.168.10.2

Password:

sw2>en
sw2>enable
Password:
sw2#
```

```
C:\>ssh -l netlab 192.168.20.2

Password:

sw1>en
sw1>enable
Password:
sw1#
```

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ssh -l netlab 192.168.30.2

Password:

sw1>en
sw1>enable
Password:
sw1#

```

(15)

با trunk کردن مسیریابی ها انجام شد.

(16)

کامپیوتر هایی که در یک vlan هستند به هم دسترسی دارند.

(17)

```

-----
Vlan      Mac Address      Type      Ports
-----
1         0001.966e.eb01   DYNAMIC   Fa0/1
1         0002.1691.5001   DYNAMIC   Fa0/3
1         0050.0f99.1501   DYNAMIC   Fa0/2
sw0#

```

```

-----
Mac Address Table
-----
Vlan      Mac Address      Type      Ports
-----
1         0010.1106.d802   DYNAMIC   Fa0/1
10        0010.1106.d802   DYNAMIC   Fa0/1
20        0010.1106.d802   DYNAMIC   Fa0/1
30        0010.1106.d802   DYNAMIC   Fa0/1
sw0#

```

```

-----
Mac Address Table
-----
Vlan      Mac Address      Type      Ports
-----
1         0010.1106.d803   DYNAMIC   Fa0/1
10        0010.1106.d803   DYNAMIC   Fa0/1
20        0010.1106.d803   DYNAMIC   Fa0/1
30        0010.1106.d803   DYNAMIC   Fa0/1
sw1#

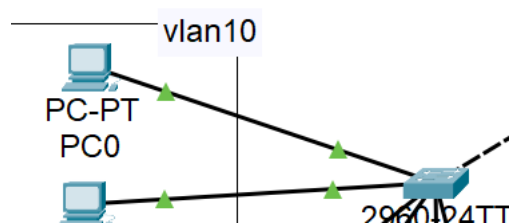
```

(18)

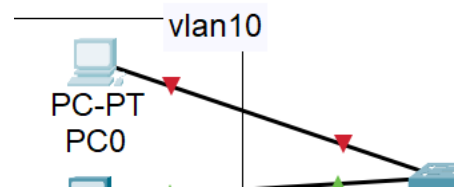
```
sw0(config)#interface range fastEthernet 0/1-3
sw0(config-if-range)#sw
sw0(config-if-range)#switchport m
sw0(config-if-range)#switchport mode ac
sw0(config-if-range)#switchport mode access
sw0(config-if-range)#

sw0(config-if-range)#switchport po
sw0(config-if-range)#switchport port-security
sw0(config-if-range)#
```

قبل تغيير :



بعد تغيير :



(19)

