دستورکار سری 5 آز شبکه

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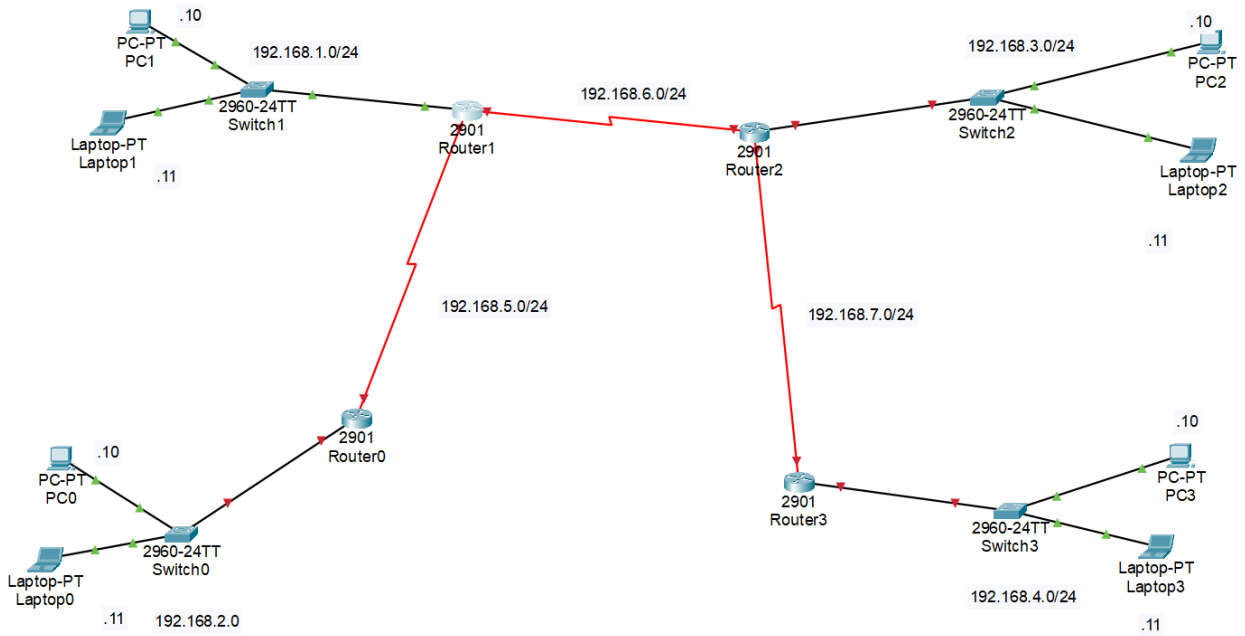
1) سناریو فوق را بستیم :



2) تمامی مسیریاب هارا به صورت زیر نامگذاری میکنیم :

```
Router>en
Router>enable
Router#conf
Router#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname router2
router2(config)#
```

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3) برای روتر ها و سوییچ ها به صورت زیر این کار را انجام میدهیم :

```
switch2>en
switch2#conf
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
switch2(config)#username netlab secret 1234
switch2(config)#li
switch2(config)#line console 0
switch2(config-line)#login local
switch2(config-line)#
```

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```
router0>
router0>en
router0#confi
router0#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
router0(config)#username netlab secret 1234
router0(config)#line console 0
router0(config-line)#login local
router0(config-line)#
```

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4) برای روتر ها و سوییچ ها داریم :

```
User Access Verification

Username: netlab
Password:

switch1>en
switch1>enable
switch1#confi
switch1#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
switch1(config)#enable secret sbunetlab
switch1(config)#
```

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```
User Access Verification

Username: 1234
Password:
% Login invalid

Username:
Username: netlab
Password:

router1>ena
router1#conf
router1#configure
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
router1(config)#enable secret sbunetlab
router1(config)#
```

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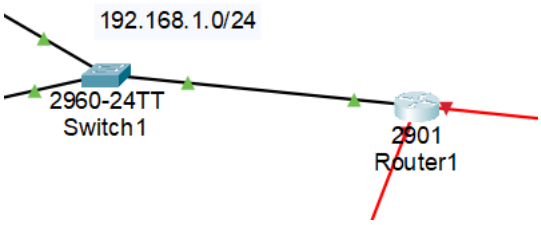
5) برای تمامی روتر ها داریم :

```
router1(config)#interface gigabitEthernet 0/0
router1(config-if)#no
router1(config-if)#no shu
router1(config-if)#no shutdown

router1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state
to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface
GigabitEthernet0/0, changed state to up
```



6) دستور ping در حالت عادی برای سیستم هایی که در یک شبکه هستند جواب میدهد اما اگر subnet عوض شود request time out داریم زیرا اتصال روتر به سوییچ و روتر به روتر در حالت اولیه برقرار نیست. به عنوان مثال با لپ تاپ با ایپی 192.168.4.11 داریم :

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.4.10

Pinging 192.168.4.10 with 32 bytes of data:

Reply from 192.168.4.10: bytes=32 time<1ms TTL=128
Reply from 192.168.4.10: bytes=32 time=8ms TTL=128
Reply from 192.168.4.10: bytes=32 time<1ms TTL=128
Reply from 192.168.4.10: bytes=32 time=7ms TTL=128

Ping statistics for 192.168.4.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 8ms, Average = 3ms

C:\>ping 192.168.3.10

Pinging 192.168.3.10 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.3.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

7) خیر دسترسی وجود ندارد زیرا ما فقط ادرس ip هارا به سوییچ ها mask کردیم و هیچ ارتباطی یا static routing بین روتر ها ست نشده.

```
router0#
router0#ping 192.168.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2
seconds:
.....
Success rate is 0 percent (0/5)

router0#
```

```
C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.2.1: Destination host unreachable.
Reply from 192.168.2.1: Destination host unreachable.
Reply from 192.168.2.1: Destination host unreachable.
Reply from 192.168.2.1: Destination host unreachable.

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

8) طبق دستورات جلو میرویم :

```
router1(config)#ip route 192.168.2.0 255.255.255.0 serial
0/0/1
```

```
     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected,
GigabitEthernet0/0
L       192.168.1.1/32 is directly connected,
GigabitEthernet0/0
S    192.168.2.0/24 is directly connected, Serial0/0/1
S    192.168.3.0/24 is directly connected, Serial0/0/0
     192.168.5.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.5.0/24 is directly connected, Serial0/0/1
L       192.168.5.2/32 is directly connected, Serial0/0/1
     192.168.6.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.6.0/24 is directly connected, Serial0/0/0
L       192.168.6.1/32 is directly connected, Serial0/0/0

router1#
```

Ping که میکنیم میبینیم که اوکی شد اولی time out میشود و مابقی میرسند :

```
C:\>ping 192.168.4.10

Pinging 192.168.4.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.4.10: bytes=32 time=10ms TTL=126
Reply from 192.168.4.10: bytes=32 time=1ms TTL=126
Reply from 192.168.4.10: bytes=32 time=10ms TTL=126

Ping statistics for 192.168.4.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 10ms, Average = 7ms

C:\>
```

برای ping کردن مابقی pc ها ابتدا با دستور زیر تمامی router هارا متصل میکنیم :

```
router2>en
router2>enable
Password:
router2#conf
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line.  End with CNTL/Z.
router2(config)#ip route 0.0.0.0 0.0.0.0 serial 0/0/0
%Default route without gateway, if not a point-to-point
interface, may impact performance
router2(config)#ip route 0.0.0.0 0.0.0.0 serial 0/0/1
router2(config)#
```

و سپس :

```
C:\>ping 192.168.4.11

Pinging 192.168.4.11 with 32 bytes of data:

Request timed out.
Reply from 192.168.4.11: bytes=32 time=25ms TTL=125
Reply from 192.168.4.11: bytes=32 time=3ms TTL=125
Reply from 192.168.4.11: bytes=32 time=14ms TTL=125

Ping statistics for 192.168.4.11:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 3ms, Maximum = 25ms, Average = 14ms

C:\>
```

```
router3#show running-config
Building configuration...

Current configuration : 962 bytes
!
version 15.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname router3
!
!
!
enable secret 5 $1$mERr$koY/OfnNQjczN9CQ773HK.
!
!
!
!
!
!
no ip cef
no ipv6 cef
!
!
!
username netlab secret 5 $1$mERr$4dpRATIgxQacPVK0CfNV4/
!
!
license udi pid CISCO2901/K9 sn FTX1524ZDR6-
!
!
!
!
!
!
!
spanning-tree mode pvst
!
!
!
!
!
!
```

```
interface GigabitEthernet0/0
ip address 192.168.4.1 255.255.255.0
duplex auto
speed auto
!
interface GigabitEthernet0/1
no ip address
duplex auto
speed auto
shutdown
!
interface Serial0/0/0
ip address 192.168.7.2 255.255.255.0
!
interface Serial0/0/1
no ip address
clock rate 2000000
shutdown
!
interface Vlan1
no ip address
shutdown
!
ip classless
ip route 192.168.3.0 255.255.255.0 Serial0/0/0
ip route 0.0.0.0 0.0.0.0 Serial0/0/0
!
ip flow-export version 9
!
!
!
!
!
!
!
line con 0
login local
!
line aux 0
!
line vty 0 4
login
!
!
!
```

End

10) برای هر روتر به صورت زیر عمل میکنیم :