CCNA（200-125）题库V3.0（2016.11.08）

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CCNA认证标志着具备安装、配置、运行中型路由和交换网络，并进行故障排除的能力。获得CCNA认证的专业人士拥有相应的知识和技能，能够通过广域网与远程站点建立连接，消除基本的安全威胁，了解无线网络接入的要求。CCNA培训包括（但不限于）以下这些协议的使用：IP、EIGRP、串行线路接口协议、帧中继、RIPv2、VLAN、以太网和访问控制列表（ACL）。

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http://bbs.vlan5.com/thread-15008-1-1.html (一定要看哦!!!)

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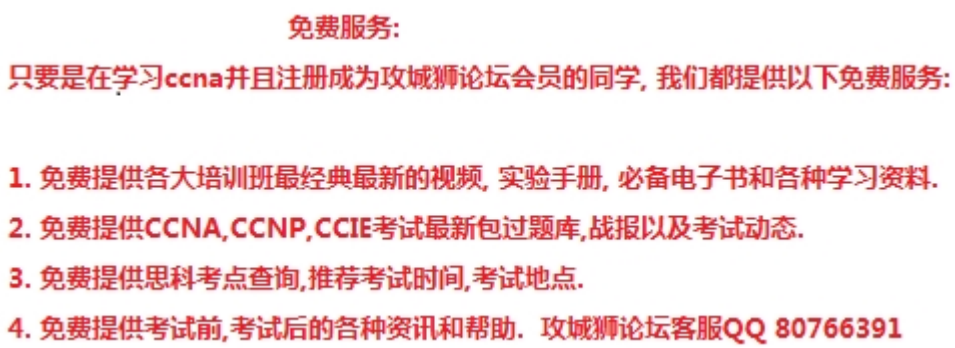

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2016.11.08

最新更新:
更新 6 道实验题, RIPv2 两道+DHCP+NAT+EIGRP TS1+ EIGRP TS2,

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1. EIGRP

Question:

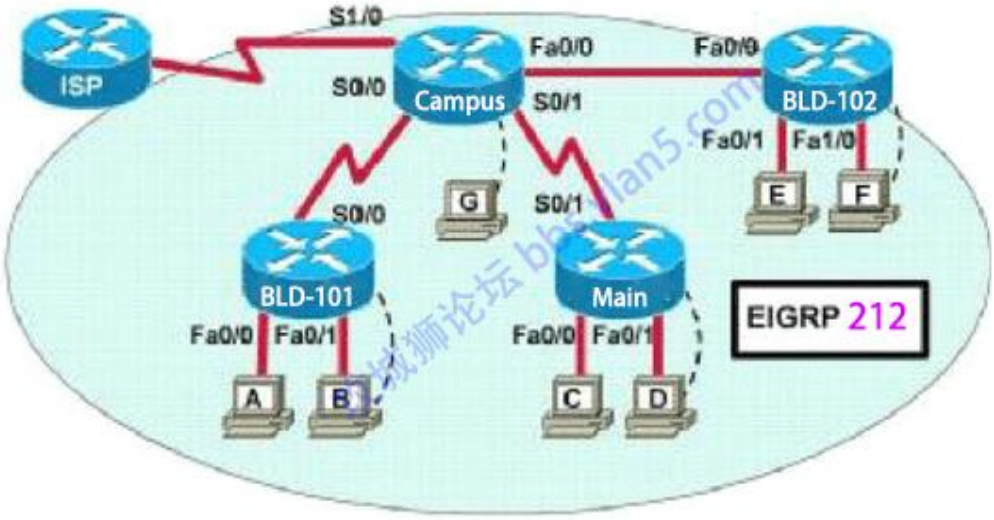
After adding **BLD-102** router, no routing updates are being exchanged between **BLD-102** and the new location. All other inter connectivity and Internet access for the existing locations of the company are working properly.

The task is to identify the fault(s) and correct the router configuration to provide full connectivity between the routers.

Access to the router CLI can be gained by clicking on the appropriate host. All passwords on all routers are cisco.

IP addresses are listed in the chart below.

Campus	**BLD-101**
Fa0/0: 192.168.77.33	Fa0/0: 192.168.60.97
S0/0 : 192.168.36.13	Fa0/1: 192.168.60.113
S0/1: 192.168.60.25	S0/0: 192.168.36.14
S1/0: 198.0.18.6	
Main	**BLD-102**
Fa0/0: 192.168.77.34	Fa0/0: 192.168.22.129
Fa0/1: 192.168.60.65	Fa0/1: 192.168.60.145
Fa1/0: 192.168.60.81	S0/1: 192.168.60.26



答案:

EIGRP 实验题是一道排错题，通过 show run 找出拓扑中四台路由器 EIGRP 的配置错误改正做到内网全通即可，错误有两种类型，一是网段宣告错误，二是 AS 号错误。

注意：在 Cisco Packet Tracer 模拟器中可以双击路由器进入命令界面，在考试中需要点路由器 console（虚线）链接的 PC 进入命令界面，比如上图需要点 PC-F 来进入 BLD-102 的命令界面。其他实验题也是如此。

BLD-102>enable (需要输入密码：cisco)
BLD-102#configure terminal　(可以简写为 conf t)
BLD-102#show run　(命令显示不全，需要多按几次空格键)

```
BLD-102#show run
           Building configuration...
           !
           router eigrp 22
           network 192.168.22.0
           network 192.168.84.0
           no auto-summary
           !
           ip classless
!
```

（AS 号错误，需要删掉整个 eigrp，再重新宣告）

BLD-102(config)#no router eigrp 22
BLD-102(config)#router eigrp 212
BLD-102(config-router)#network 192.168.22.0
BLD-102(config-router)#network 192.168.60.0
BLD-102(config-router)#no auto-summary　（不要忘记关闭自动汇总）
BLD-102(config-router)#end
BLD-102#copy running-config startup-config
（最后不要忘记保存，可以使用简写 copy run start，考试不支持 write）

Campus>enable (需要输入密码：cisco)
Campus#configure terminal
Campus#show run　(命令显示不全，需要多按几次空格键)

```
<output omitted>
!
router eigrp 212
  passive-interface Serial1/0
  network 192.168.36.0
  network 198.0.18.0
  network 192.168.77.0
  network 192.168.22.0
  no auto-summary
!
<output omitted>
```

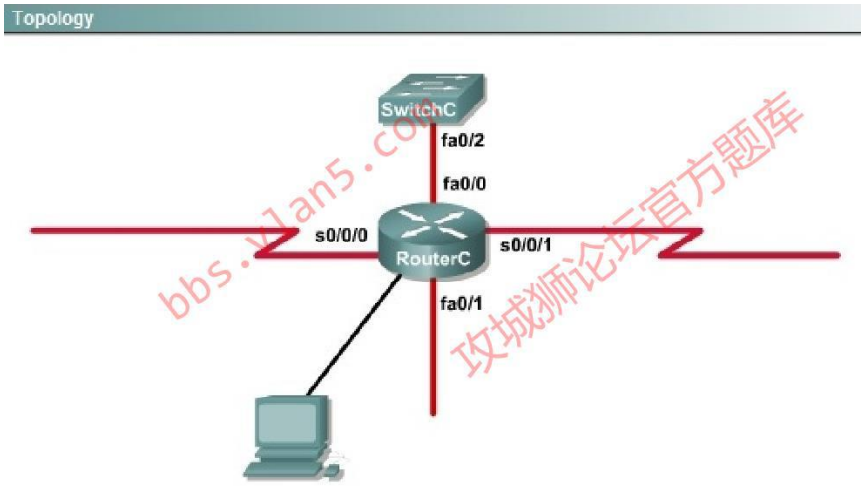
(宣告网段错误，路由中多了一个 192.168.22.0 的网段，却少了一个 192.168.60.0 的
网段)

Campus(config)#router eigrp 212
Campus(config-router)#no network 192.168.22.0
Campus(config-router)#network 192.168.60.0
Campus#copy running-config startup-config　（不要忘记保存配置）

此路由器有 passive-interface S1/0 的配置，这里没有错误，不用处理

2. ACL-1

An administrator is trying to ping and telnet from Switch to Router with the results shown below:
Switch>
Switch> ping 10.4.4.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.4.4.3,timeout is 2 seconds:
.U.U.U
Success rate is 0 percent (0/5)
Switch>
Switch> telnet 10.4.4.3
Trying 10.4.4.3 …
% Destination unreachable; gateway or host down
Switch>
Click the console connected to Router and issue the appropriate commands to answer the questions.



注意：此题对应的 **PKT** 文件，因为部分命令模拟器不支持，所以配置和题库不一样，**PKT** 中 **ACL** 条目不够，路由器配置以 **PDF** 题库为准。

Router>enable (需要输入密码：cisco)
Router#show running-config
（命令显示不全，多按几次空格键即可）

```
<output omitted>

interface Loopback1
 ip address 172.16.4.1 255.255.255.0
!
interface Loopback2
 ip address 10.145.145.1 255.255.255.0
 ipv6 address 2001:410:2:3::/64 eui-64
!
interface FastEthernet0/0
 ip address 10.4.4.3 255.255.255.0
 ip access-group 106 in
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial0/0/0
 bandwidth 64
 no ip address
 ip access-group 102 out
 encapsulation frame-relay
 ip ospf authentication
 ip ospf authentication-key san-fran
!
interface Serial0/0/0.1 point-to-point
 ip address 10.140.3.2 255.255.255.0
 ip authentication mode eigrp 100 md5
 ip authentication key-chain eigrp 100 icndchain
 frame-relay interface-dlci 120
!
interface Serial0/0/1
 bandwidth 64
 ip address 10.45.45.1 255.255.255.0
 ip access-group 102 in
 ip authentication mode eigrp 100 md5
 ip authentication key-chain eigrp 100 icndchain
 ip ospf authentication
 ip ospf authentication-key san-fran
 ipv6 address 2001:410:2:10::/64 eui-64
!
```

```
router eigrp 100
 network 10.0.0.0
 network 172.16.0.0
 network 192.168.2.0
 not auto-summary
!
router ospf 100
 log-adjacency-changes
 network 10.4.4.3 0.0.0.0 area 0
 network 10.45.45.1 0.0.0.0 area 0
 network 10.140.3.2 0.0.0.0 area 0
 network 192.168.2.62 0.0.0.0 area 0
!
router rip
 version 2
 network 10.0.0.0
 network 172.16.0.0
!
ip default-gateway 10.1.1.2
!
!
ip http server
no ip http secure-server
!
```

```
access-list 102 permit tcp any any eq ftp
access-list 102 permit tcp any any eq ftp-data
access-list 102 deny tcp any any eq telnet
access-list 102 deny icmp any any echo-reply
access-list 102 permit ip any any

access-list 104 permit tcp any any eq ftp
access-list 104 permit tcp any any eq ftp-data
access-list 104 deny tcp any any eq telnet
access-list 104 permit icmp any any echo
access-list 104 deny icmp any any echo-reply
access-list 104 permit ip any any

access-list 106 permit tcp any any eq ftp
access-list 106 permit tcp any any eq ftp-data
access-list 106 deny tcp any any eq telnet
access-list 106 permit icmp any any echo-reply
access-list 110 permit udp any any eq domain
access-list 110 permit udp any eq domain any
access-list 110 permit tcp any any eq domain
access-list 110 permit tcp any eq domain any
access-list 110 permit tcp any any

access-list 114 permit ip 10.4.4.0 0.0.0.255 any

access-list 115 permit ip 0.0.0.0 255.255.255.0 any

access-list 122 deny tcp any any
access-list 122 deny lmp any any echo-reply
access-list 122 permit ip any any
!
<output omitted>
```

Question 1:

Which will fix the issue and allow ONLY ping to work while keeping telnet disabled?

A – Correctly assign an IP address to interface fa0/1

B – Change the ip access-group command on fa0/0 from “in” to “out”

C – Remove *access-group 106 in* from interface fa0/0 and add access-group 115 in.

D – Remove access-group 102 out from interface s0/0/0 and add access-group 114 in

E – Remove access-group 106 in from interface fa0/0 and add access-group 104 in

Answer:E

Explanation:

问：哪一个修改能只允许 ping，保持拒绝 telnet？

我们来看一下 access list 104:

```
access-list 104 permit tcp any any eq ftp
access-list 104 permit tcp any any eq ftp-data
access-list 104 deny tcp any any eq telnet
access-list 104 permit icmp any any echo
access-list 104 deny icmp any any echo-reply
access-list 104 permit ip any any
```

题目没有问关于 FTP 的流量，所以不用关心第一条和第二条。第三条拒绝了所有 telent，第四条允许所有 ping 请求包，第五条拒绝所有 ping 回应包。要注意 access list 104 应用的 in 方向，路由器回应 ping 的包是 out 方向，所有第五条不会影响 ping 路由器的 ICMP 流量，所以答案选 E。

Question 2:

What would be the effect of issuing the command ***ip access-group 114 in*** to the fa0/0 interface?

A – Attempts to telnet to the router would fail

B – It would allow all traffic from the 10.4.4.0 network

C – IP traffic would be passed through the interface but TCP and UDP traffic would not

D – Routing protocol updates for the 10.4.4.0 network would not be accepted from the fa0/0 interface

Answer: B

Explanation:

问：把 ip access-group 114 in 设置在 F0/0 端口，会有什么影响？

access-list 114: access-list 114 permit ip 10.4.4.0 0.0.0.255 any

允许来自 10.4.4.0/24 网段的所有流量

Question 3:

What would be the effect of issuing the command **ip *access-group 115 in*** on the s0/0/1 interface?

A – No host could connect to Router through s0/0/1

B – Telnet and ping would work but routing updates would fail.

C – FTP, FTP-DATA, echo, and www would work but telnet would fail

D – Only traffic from the 10.4.4.0 network would pass through the interface

Answer: A

Explanation:

问：把命令 ip access-group 115 in 设置在 S0/0/1 端口，会有什么影响？

首先 S0/0/1 端口已经配置了 ip access-group 102 in

```
interface Serial0/0/1
 bandwidth 64
 ip address 10.45.45.1 255.255.255.0
 ip access-group 102 in
 ip authentication mode eigrp 100 md5
 ip authentication key-chain eigrp 100 icndchain
 ip ospf authentication
 ip ospf authentication-key san-fran
 ipv6 address 2001:410:2:10::/64 eui-64
```

因为一个端口在一个方向只能设置一个 ACL，所以当我们设置 ip access-group 115 in,原先的 ip access-group 102 in 就被覆盖了。

access-list 115: access-list 114 permit ip 0.0.0.0 255.255.255.0 any

允许来自 x.x.x.0 网络的流

x.x.x.0 看上去像一个网络地址，所以选 A，因为网络地址不能作为 host 的 IP 地址。

但是如果掩码小于 24 位，x.x.x.0 也可能不是网络地址，比如 10.45.44.0/16，这样看来 A 也不是非常准确。BCD 是肯定不对，排除法，考试还要选 A。

3.ACL-2

A network associate is adding security to the configuration of the Corp1 router. The user on host C should be able to use a web browser to access financial information from the Finance Web Server. No other hosts from the LAN nor the Core should be able to use a web browser to access this server. Since there are multiple resources for the corporation at this location including other resources on the Finance Web Server, all other traffic should be allowed.

The task is to create and apply a numbered access-list with no more than three statements that will allow ONLY host C web access to the Finance Web Server. No other hosts will have web access to the Finance Web Server. All other traffic is permitted.

Access to the router CLI can be gained by clicking on the appropriate host.

All passwords have been temporarily set to “cisco”.

The Core connection uses an IP address of 198.18.196.65

(Corp1 路由器的 S 口的 IP，考试时要 show 下 IP 对不对，不对就改)

The computers in the Hosts LAN have been assigned addresses of 192.168.33.1 – 192.168.33.254

Host A 192.168.33.1

Host B 192.168.33.2

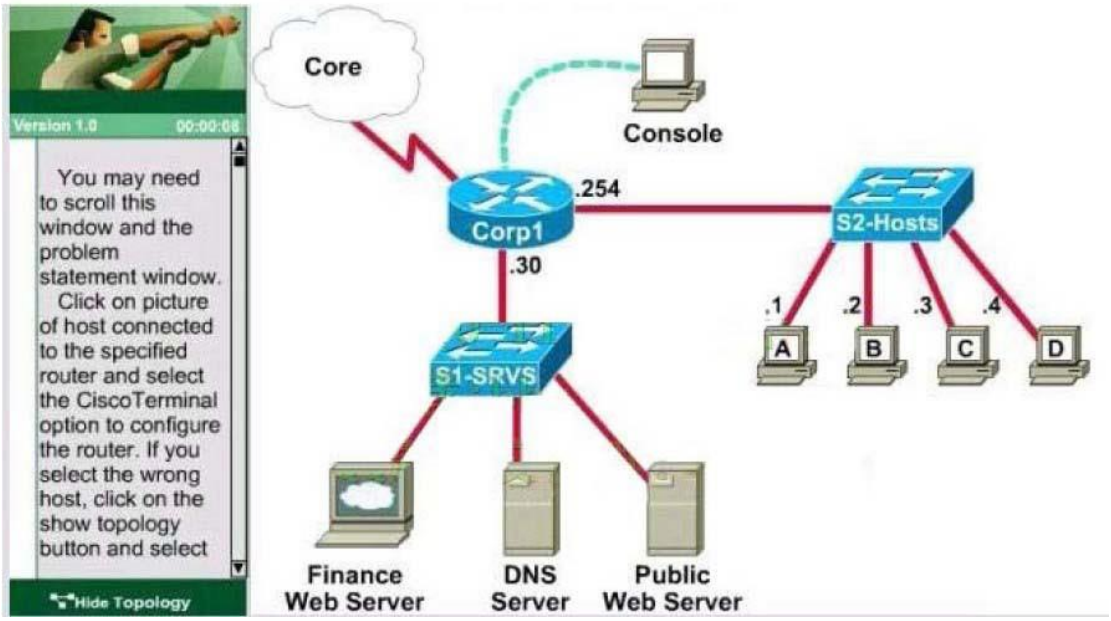
Host C 192.168.33.3

Host D 192.168.33.4

The servers in the Server LAN have been assigned addresses of 172.22.242.17 – 172.22.242.30

The Finance Web Server is assigned an IP address of 172.22.242.23.

The Public Web Server is assigned an IP address of 172.22.242.17



Corp1 路由器的 S 口的 IP，考试时要 show 下 IP 对不对，不对就改，修改 IP 命令

Corp1>enable

Corp1#configure terminal

Corp1(config)#int s1/0(具体端口号自己 show run 看一下)

Corp1(config-if)#ip add 198.18.196.65 255.255.255.252(ip 改为题目给的，掩码用 show run 得到的原先错误 IP 的掩码)

Corp1(config-if)#end

这里可以不用删掉错误的 IP 地址，直接输入新的可以将旧 IP 覆盖，最后别忘记保存。

Corp1>enable (需要输入密码 cisco)

Corp1#show running-config

```
Corp1# show running-config
<output omitted>
!
interface FastEthernet0/0
 ip address 192.168.33.254 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 172.22.242.30 255.255.255.240
 duplex auto
 speed auto
!
<output omitted>
```

确定连接服务器的接口为 F0/1

```
Corp1#configure terminal

Corp1(config)#access-list 100 permit tcp host 192.168.33.3 host
172.22.242.23 eq 80
```

（允许从源主机为 IP：192.168.33.3 到目的主机 IP 为：172.22.252.34 的 web 流量。这里不必要纠结扩展列表使用的数字 100 还是 128，只要是 100-199 范围内的都可以使用。）

```
Corp1(config)#access-list 100 deny tcp any host 172.22.242.23 eq 80
```

（禁止所有源主机访问目的主机 IP 为：172.22.242.23 的 web 流量）

```
Corp1(config)#access-list 100 permit ip any any
```

（允许所有流量）

```
Corp1(config)#interface fa0/1
Corp1(config-if)#ip access-group 100 out
```

（在 F0/1 的 OUT 方向应用 ACL 100.这里必须要在链接服务器的端口使用 out 方向，这样才能控制来自 Core 的流量）

```
Corp1(config-if)#end
Corp1#copy run start
```

（最后记得保存）

检测试验结果用 PC 的浏览器输入服务器的 IP 地址

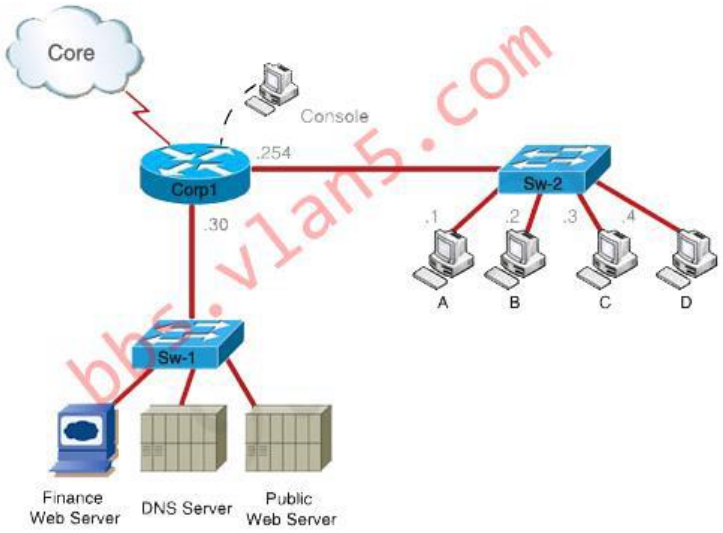
4.ACL-3

（此题与 ACL-2 类似，ACL-2 中要求禁止其他主机 web 访问 Finance Web Server.，ACL-3 中要就禁止其他主机访问 Finance Web Server.）

Question

A corporation wants to add security to its network.The requirements are:
>Host C should be able to use a web browser(HTTP)to access the Finance Web Server.
>Other types of access from host C to the Finance Web Server should be blocked.
>All access from hosts in the Core or local LAN to the Finance Web Server should be blocked.

>All hosts in the Core and on local LAN should be to access the Public Web Server. You have been tasked to create and apply a numberd access list to a single outbound interface.They can contain no more than three statements that meets these requirements. Access to the router CLI can be gained by clicking on the appropriate host.
All passwords have been temporarily set to "cisco".
The Core connection uses an IP address of 198.18.196.65←Corp1 路由器的 S 口的 IP，考试时要 show 下 IP 对不对，不对就改
The computers in the Hosts LAN have been assigned addresses of 192.168.33.1 - 192.168.33.254
Host A 192.168.33.1
Host B 192.168.33.2
Host C 192.168.33.3
Host D 192.168.33.4
The servers in the Server LAN have been assigned addresses of 172.22.242.17 - 172.22.242.30
The Finance Web Server is assigned an IP address of 172.22.242.23.

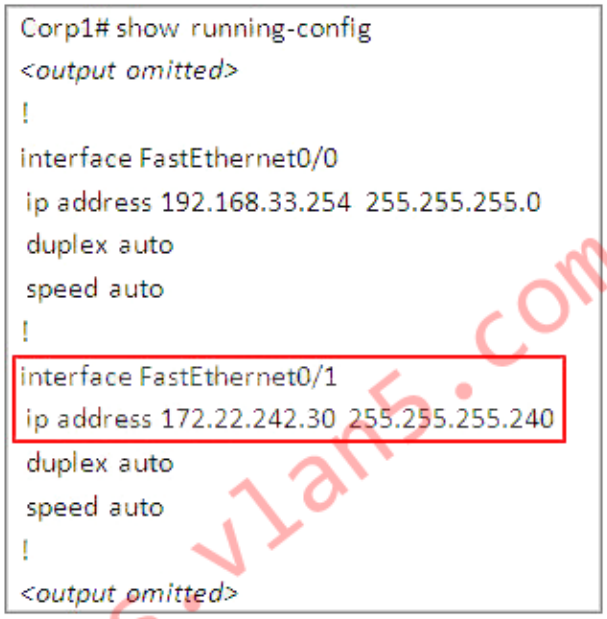


Answer：

Corp1 路由器的 S 口的 IP，考试时要 show 下 IP 对不对，不对就改，修改 IP 命令
Corp1#configure terminal

Corp1(config)#int s1/0(具体端口号自己 show run 看一下)
Corp1(config-if)#ip add 198.18.196.65 255.255.255.252(ip 改为题目给的，掩码用 show run 得到的原先错误 IP 的掩码)
Corp1(config-if)#end
这里可以不用删掉错误的 IP 地址，直接输入新的可以将旧 IP 覆盖，最后别忘记保存。

Corp1#show running-config



```
Corp1# show running-config
<output omitted>
!
interface FastEthernet0/0
 ip address 192.168.33.254  255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 172.22.242.30 255.255.255.240
 duplex auto
 speed auto
!
<output omitted>
```

确定连接服务器的接口为 F0/1

Corp1#configure terminal
Corp1(config)#access-list 100 permit tcp host 192.168.33.3 host 172.22.242.23 eq 80
Corp1(config)#access-list 100 deny ip any host 172.22.242.23
Corp1(config)#access-list 100 permit ip any any
Corp1(config)#interface fa0/1
Corp1(config-if)#ip access-group 100 out
Corp1(config-if)#end
Corp1#copy running-config startup-config

命令解释：

1. Corp1(config)# access-list 100 permit tcp host 192.168.33.3 host 172.22.242.23 eq 80
创建一条扩展列表，允许 TCP 流量 从源主机为 IP：192.168.33.3 到目的主机 IP 为：172.22.242.23 的 80 端口。eq 的意思是 等于端口号。
这里不必要纠结扩展列表使用的数字 100 还是 128，只要是 100-199 范围内的都可以使用。
2. Corp1(config)#access-list 100 deny ip any host 172.22.242.23
3. 创建一条扩展列表，禁止 所有流量从所有源主机访问目的主机 IP 为：172.22.242.23 。 IP 是指所有协议。
4. Corp1(config)#access-list 100 permit ip any any
创建一条扩展列表，允许 IP 流量从所有源主机到所有目的主机。
5. Corp1#show running-config
Show run 是为了找出 .30 的 IP 是在哪个接口，图里给出了 .30 只要 show run 找出 IP 为 .30 的接口就 OK 了然后把 ACL 的列表应用到接口上。
6. Corp1(config)#interface fa0/1
Corp1(config-if)#ip access-group 100 out

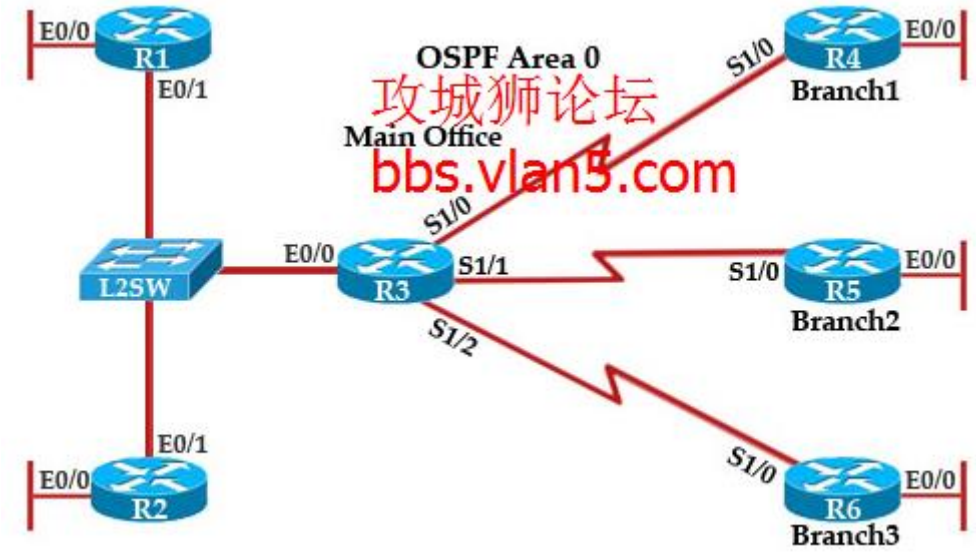
最后就是这 2 条命令了，上面已经 Show run 找出来 .30 的 IP 为 172.22.242.30，是在 f0/1 口上。直接进入 F0/1 口
把创建的扩展列表应用进去，最后千万记得 Copy run Start。

总结来说还是挺简单的，考试的时候实验题会变的就是 IP 地址和主机，他可能会将主机 C 变为主机 B，还有就是 IP 变掉就是，其他的不会改变的，看好题就 OK 了。

5. OSPF Neighbor

Question:

Refer to the topology. Your company has decided to connect the main office with three other remote branch offices using point-to-point serial links. You are required to troubleshoot and resolve OSPF neighbor adjacency issues between the main office and the routers located in the remote branch offices.



Question 1

An OSPF neighbor adjacency is not formed between R3 in the main office and R4 in the Branch1 office. What is causing the problem?

A. There is an area ID mismatch.
B. There is a Layer 2 issue; an encapsulation mismatch on serial links.
C. There is an OSPF hello and dead interval mismatch.
D. The R3 router ID is configured on R4.

Answer: A

Explanation

我们知道这个是一个 OSPF 的问题,我们先要从最基础的设备间物理端口查起.我们在 R3 和 R4 上用 “show running-config”去检查他们的 S1/0 接口的状态.

```
R3#show running-config
<<output omitted>>
!
interface Serial1/0
  description **Connected to R4-Branch1 office**
  ip address 10.10.240.1 255.255.255.252
  encapsulation ppp
```

```
 ip ospf 3 area 0
!
<<output omitted>>
```

```
R4#show running-config
<<output omitted>>
!
interface Serial1/0
 description **Connected to R3-Main Branch office**
 ip address 10.10.240.2 255.255.255.252
 encapsulation ppp
 ip ospf 4 area 2
!
<<output omitted>>
```

从以上输出我们可以发现他们的 Area ID 不匹配,R3 的 s1/0 属于 area 0(R3: **ip ospf 3 area 0**), 而 R4 的 s1/0 属于 area 2(R4: **ip ospf 4 area 2**),攻城狮论坛已经帮您把相关语句在图中标红了.

Question 2

An OSPF neighbor adjacency is not formed between R3 in the main office and R5 in the Branch2 office. What is causing the problem?

A. There is an area ID mismatch.
B. There is a PPP authentication issue; a password mismatch.
C. There is an OSPF hello and dead interval mismatch.
D. There is a missing network command in the OSPF process on R5.

Answer: C

Explanation

继续用 "show running-config" 命令查看个路由器 s 口状态.

```
R3#show running-config
<<output omitted>>
!
interface Serial1/1
 description **Connected to R5-Branch2 office**
 ip address 10.10.240.5 255.255.255.252
 encapsulation ppp
 ip ospf hello-interval 50
 ip ospf 3 area 0
!
<<output omitted>>
```

```
R5#show running-config
<<output omitted>>
!
interface Serial1/0
 description **Connected to R3-Main Branch office**
 ip address 10.10.240.6 255.255.255.252
 encapsulation ppp
 ip ospf 5 area 0
!
```

```
<<output omitted>>
```

通过 R3 R5 的 show run 信息可以看到 R3 比 R5 多配置了一个 ip ospf hello-interval50，这个命令修改了默认的 hello 包发送间隔时间,配置以后 R3 将每隔 50 秒向 R3 发送一次 hello 包。R5 上没有配置 hello-interval 的值,也就是说 R5 会使用 OSPF 默认的设置 hello-interval 10 seconds 。所以是 hello-interval 不匹配导致的问题。可以通过 show ip ospf interface <interface>"查看

```
R3#sh ip ospf int s1/1
Serial1/1 is up, line protocol is up
  Internet Address 10.10.240.5/30, Area 0
  Process ID 3, Router ID 192.168.3.3, Network Type POINT_TO_POINT, Cost: 64
  Enabled by interface config, including secondary ip addresses
  Transmit Delay is 1 sec, State POINT_TO_POINT,
  Timer intervals configured, Hello 50, Dead 200, Wait 200, Retransmit 5
  oob-resync timeout 200
  Hello due in 00:00:28
  Supports Link-local Signaling (LLS)
  Index 2/2, flood queue length 0
  Next 0×0(0)/0×0(0)
  Last flood scan length is 0, maximum is 0
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 0, Adjacent neighbor count is 0
  Suppress hello for 0 neighbor(s)
```

```
R5#sh ip ospf int s1/0
Serial1/0 is up, line protocol is up
  Internet Address 10.10.240.6/30, Area 0
  Process ID 5, Router ID 10.10.240.6, Network Type POINT_TO_POINT, Cost: 64
  Enabled by interface config, including secondary ip addresses
  Transmit Delay is 1 sec, State POINT_TO_POINT,
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
  oob-resync timeout 40
  Hello due in 00:00:04
  Supports Link-local Signaling (LLS)
  Index 1/1, flood queue length 0
  Next 0×0(0)/0×0(0)
  Last flood scan length is 0, maximum is 0
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 0, Adjacent neighbor count is 0
  Suppress hello for 0 neighbor(s)
```

可以看到 hello 和 dead 都是不一样的，因为 dead time 一直是 hello 的 4 倍(变种:如果本题需要修改 dead-interval,请记得用 **ip ospf dead-interval <seconds>** 修改)。

Question 3

R1 does not form an OSPF neighbor adjacency with R2. Which option would fix the issue?

A. R1 ethernet0/1 is shutdown. Configure no shutdown command.
B. R1 ethernet0/1 configured with a non-default OSPF hello interval of 25; configure no ip ospf hello-interval 25
C. R2 ethernet0/1 and R3 ethernet0/0 are configured with a non-default OSPF hello interval of 25; configure no ip ospf hello-interval 25
D. Enable OSPF for R1 ethernet0/1; configure ip ospf 1 area 0 command under ethernet0/1

Answer: B

Explanation

继续用 "show running-config" 命令查看个路由器 e 口状态.

```
R1#show running-config
<<output omitted>>
!
interface Ethernet0/1
  description **Connected to L2SW**
  ip address 10.10.230.1 255.255.255.0
  ip ospf hello-interval 25
  ip ospf 1 area 0
!
<<output omitted>>
```

```
R2#show running-config
<<output omitted>>
!
interface Ethernet0/1
  description **Connected to L2SW**
  ip address 10.10.230.2 255.255.255.0
  ip ospf 2 area 0
!
<<output omitted>>
```

R1 设置了 ip ospf hello-interval 25 导致和 R2 的 hello 和 dead 时间不一样。你也可以用命令"show ip ospf interface <interface> command")看到.

所以需要再 R1 上配置 no ip ospf hello-interval 25，使用默认的 hello 时间。

变种:通过 show run 命令如果发现 R1 的 e 口处于 shutdown 状态,那就需要选择选项 A,请注意看清题目,这里不能硬背.具体 ACD 选项讲解可以联系论坛客服.

Question 4

An OSPF neighbor adjacency is not formed between R3 in the main office and R6 in the Branch3 office. What is causing the problem?

A. There is an area ID mismatch.
B. There is a PPP authentication issue; the username is not configured on R3 and R6.
C. There is an OSPF hello and dead interval mismatch.
D. The R3 router ID is configured on R6.

Answer: D

Explanation

```
R3#show running-config
<<output omitted>>
username R6 password CISCO36
!
interface Serial1/2
  description **Connected to R6-Branch3 office**
  ip address 10.10.240.9 255.255.255.252
  encapsulation ppp
```

```
 ip ospf 3 area 0
 ppp authentication chap
!
<<output omitted>>
!
router ospf 3
 router-id 192.168.3.3
!
<<output omitted>>
```

```
R6#show running-config
<<output omitted>>
username R3 password CISCO36
!
interface Serial1/0
 description **Connected to R3-Main Branch office**
 ip address 10.10.240.10 255.255.255.252
 encapsulation ppp
 ip ospf 6 area 0
 ppp authentication chap
!
<<output omitted>>
!
router ospf 6
 router-id 192.168.3.3
!
<<output omitted>>
```

R6 使用了跟 R3 相同的 router-id 192.168.3.3，所以邻居不能建立。

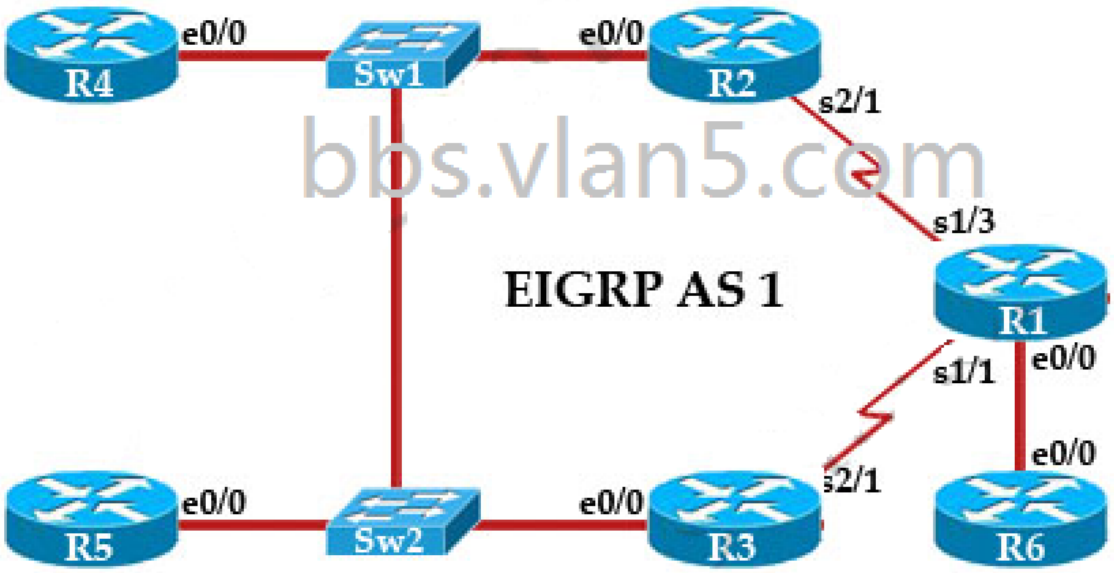
攻城狮论坛提示：现实中这样的配置会被自动发现并在 CLI 中报错提示.

6. EIGRP TS1 (Troubleshooting)

Question

Refer to the topology. Your company has connected the routers R1, R2 and R3 with serial links. R2 and R3 are connected to the switches SW1 and SW2, respectively. SW1 and SW2 are also connected to the routers R4 and R5.

The EIGRP routing protocol is configured. You are required to troubleshoot and resolve the EIGRP issues between the various routers. Use the appropriate show commands to troubleshoot the issues.



Instead of posting the output of "show run" commands we post here the commands entered on each router to reduce some useless lines. Also you can try solving questions by yourself before reading the answers.

R1: int lo0 ip address 10.1.1.1 255.255.255.255 int e0/0 ip address 192.168.16.1 255.255.255.0 no shut int s1/1 ip address 192.168.13.1 255.255.255.0 bandwidth 1000 no shut int s1/3 ip address 192.168.12.1 255.255.255.0 no shut ! router eigrp 1 network 192.168.12.0 network 192.168.13.0 network 192.168.16.0	**R2:** int lo0 ip address 10.2.2.2 255.255.255.255 int e0/0 ip address 192.168.123.2 255.255.255.0 int s2/1 ip address 192.168.12.2 255.255.255.0 ! router eigrp 1 network 10.2.2.2 0.0.0.0 network 192.168.12.0 network 192.168.123.0	**R3:** int lo0 ip address 10.3.3.3 255.255.255.255 int e0/0 ip address 192.168.123.3 255.255.255.0 int s2/1 ip address 192.168.13.3 255.255.255.0 ! router eigrp 1 network 10.3.3.3 0.0.0.0 network 192.168.13.0 network 192.168.123.0
R4: int lo0 ip address 10.4.4.4 255.255.255.255 int lo1 ip address 10.4.4.5 255.255.255.255 int lo2 ip address 10.4.4.6 255.255.255.255	**R5:** int lo0 ip address 10.5.5.5 255.255.255.255 int lo1 ip address 10.5.5.55 255.255.255.255 int e0/0 ip address 192.168.123.5 255.255.255.0	**R6:** int lo0 ip address 10.6.6.6 255.255.255.255 int e0/0 ip address 192.168.16.6 255.255.255.0 ! router eigrp 1

int e0/0 ip address 192.168.123.4 255.255.255.0 ! router eigrp 2 network 10.4.4.4 0.0.0.0 network 10.4.4.5 0.0.0.0 network 10.4.4.6 0.0.0.0 network 192.168.123.0	! router eigrp 1 network 10.5.5.5 0.0.0.0 network 10.5.5.55 0.0.0.0 network 10.10.10.0 0.0.0.255 network 192.168.123.0	network 10.6.6.6 0.0.0.0

（**攻城狮论坛提示**：在考试中使用的 IOS 版本 15，所以"no auto-summary"是默认设置的。不需要再去配置它。）

Question 1

The loopback interfaces on R4 with the IP addresses of 10.4.4.4/32, 10.4.4.5/32 and 10.4.4.6/32 are not appearing in the routing table of R5. Why are the interfaces missing?

A. The interfaces are shutdown, so they are not being advertised.
B. R4 has been incorrectly configured to be in another AS, so it does not peer with R5.
C. Automatic summarization is enabled, so only the 10.0.0.0 network is displayed.
D. The loopback addresses haven't been advertised, and the network command is missing on R4.

Answer: B

Explanation

R4 的 EIGRP 区域号设置的是 AS 2 (router eigrp 2)，其他路由器设置的是 AS 1。

Question 2

Which path does traffic take from R1 to R5?

A. The traffic goes through R2.
B. The traffic goes through R3.
C. The traffic is equally load-balanced over R2 and R3.
D. The traffic is unequally load-balanced over R2 and R3.

Answer: A

Explanation

我们需要用命令 "show ip route" 从 R1 的路由表查起:

```
R1#sh ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/32 is subnetted, 5 subnets
C       10.1.1.1 is directly connected, Loopback0
D       10.2.2.2 [90/2297856] via 192.168.12.2, 00:17:44, Serial1/3
D       10.3.3.3 [90/2298880] via 192.168.13.3, 00:00:04, Serial1/1
D       10.5.5.5 [90/2300416] via 192.168.12.2, 00:17:44, Serial1/3
D       10.5.5.55 [90/2300416] via 192.168.12.2, 00:17:44, Serial1/3
C    192.168.12.0/24 is directly connected, Serial1/3
C    192.168.13.0/24 is directly connected, Serial1/1
C    192.168.16.0/24 is directly connected, Ethernet0/0
D    192.168.123.0/24 [90/2172416] via 192.168.12.2, 00:17:44, Serial1/3
```


我们看到 R5 上有 3 个接口,分别是 Loopback0: 10.5.5.5 ; Loopback1: 10.5.5.55; Ethernet0/0: 192.168.123.5,所有这 3 个都被告知是需要通过 192.168.12.2 到达,所以我们可以认定 R1 到 R5 是需要通过 R2 的 (192.168.12.2 是 R2 的 S2/1 接口).

Question 3

Router R6 does not form an EIGRP neighbor relationship correctly with router R1. What is the cause for this misconfiguration?

A. The K values mismatch.
B. The AS does not match.
C. The network command is missing.
D. The passive-interface command is enabled.

Answer: C

Explanation

从上面的配置中我们可以看到,R6 缺少命令“network 192.168.16.0”,所以不能和其他设备建立邻居.

Question 4

Study the following output taken on R1:

```
R1#ping 10.5.5.55 source 10.1.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.5.5.55, timeout is 2 seconds:
Packet sent with a source address of 10.1.1.1
. . . . .
Success rate is 0 percent (0/5)
```

Why are the pings failing?

A. The network statement is missing on R5.
B. The loopback interface is shut down on R5.
C. The network statement is missing on R1.
D. The IP address that is configured on the Lo1 interface on R5 is incorrect.

Answer: C

Explanation

R1 并没有将 loopback 0(10.1.1.1) 宣告进 EIGRP，所以 R5 没有到达 10.1.1.1 的路由，

以 10.1.1.1 为源地址 ping R5 不通,因为 ping 包可以到达 R5,但是 R5 不知道回到 R1 的路由。

7. EIGRP TS2 (Troubleshooting）

注意：本题是 **EIGRP TS1** 的变种，具体变动参考以下内容。

拓扑 ---------- 相同

题目要求---------- 相同

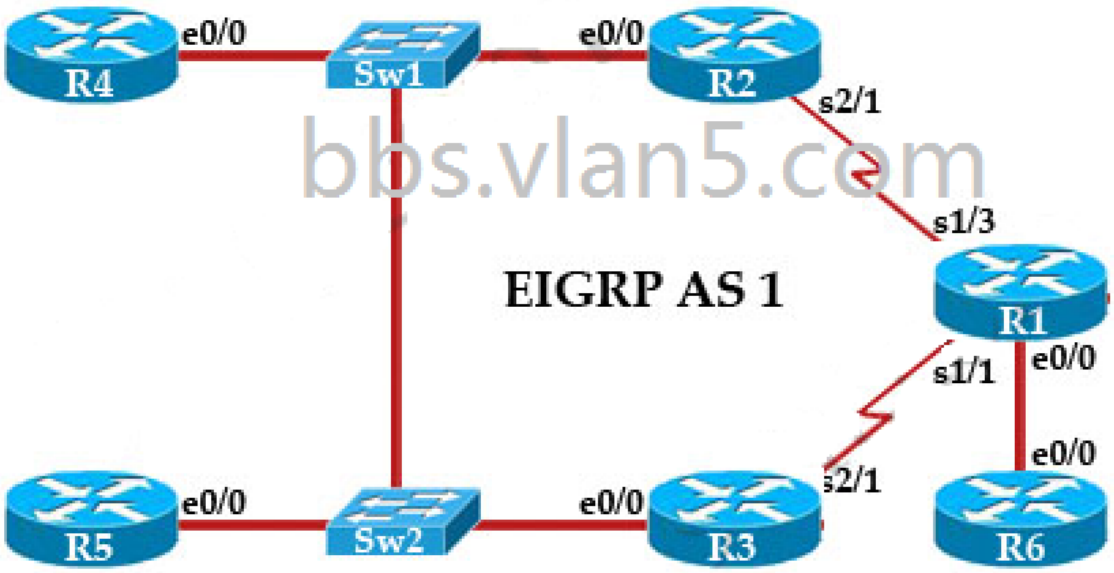
选项---------- 相同

路由器配置---------- 不同

答案---------- 不同

Refer to the topology. Your company has connected the routers R1, R2 and R3 with serial links. R2 and R3 are connected to the switches SW1 and SW2, respectively. SW1 and SW2 are also connected to the routers R4 and R5.

The EIGRP routing protocol is configured. You are required to troubleshoot and resolve the EIGRP issues between the various routers. Use the appropriate show commands to troubleshoot the issues.



Question 1

The loopback interfaces on R4 with the IP addresses of 10.4.4.4/32, 10.4.4.5/32 and 10.4.4.6/32 are not appearing in the routing table of R5. Why are the interfaces missing?

A. The interfaces are shutdown, so they are not being advertised.

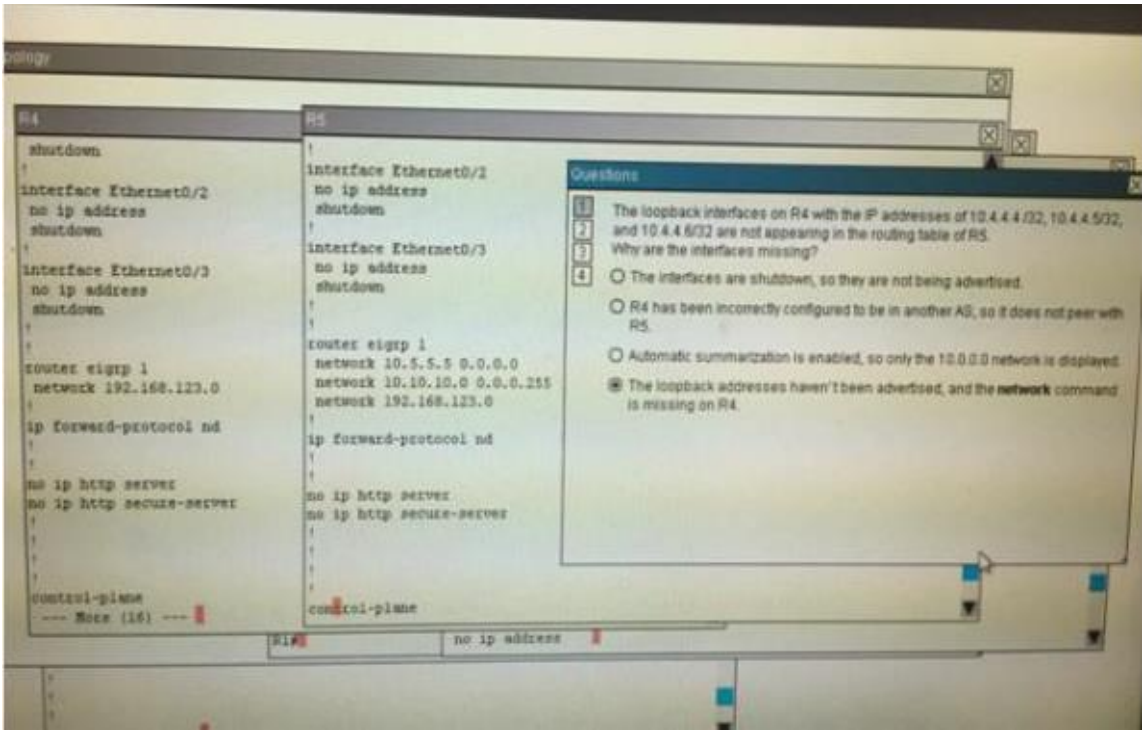
B. R4 has been incorrectly configured to be in another AS, so it does not peer with R5.

C. Automatic summarization is enabled, so only the 10.0.0.0 network is displayed.

D. The loopback addresses haven't been advertised, and the network command is missing on R4.

题库里给的答案是 B (AS 号不同)

在考试中 show run 查到的并不是区域号不同，而是 R4 没有宣告它的环回地址,也就是选 D



Question 2

Which path does traffic take from R1 to R5?

A. The traffic goes through R2.

B. The traffic goes through R3.

C. The traffic is equally load-balanced over R2 and R3.

D. The traffic is unequally load-balanced over R2 and R3.

题库中，在 R1 上 show ip route，结果是 R2

在考试中查看到 R2，R3 这两条的路径都是等值的，所以选 C

Question 3

Router R6 does not form an EIGRP neighbor relationship

correctly with

router R1. What is the cause for this misconfiguration?

A. The K values mismatch.

B. The AS does not match.

C. The network command is missing.

D. The passive-interface command is enabled.

题库是选 C（R6 没有宣告网段）

考试所查到的并不是这个原因，而是选项 A！"The K values mismatch." 通过 show ip protocols 来查看 K 值

Question 4

R1#ping 10.5.5.55 source 10.1.1.1

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 10.5.5.55, timeout is 2

seconds:

Packet sent with a source address of 10.1.1.1

. . . . .

Success rate is 0 percent (0/5)

R1 为什么 ping 不通 R5？

A. The network statement is missing on R5.

B. The loopback interface is shut down on R5.

C. The network statement is missing on R1.

D. The IP address that is configured on the Lo1 interface on R5 is incorrect.

D. The IP address that is configured on the Lo1 interface on R5 is incorrect.

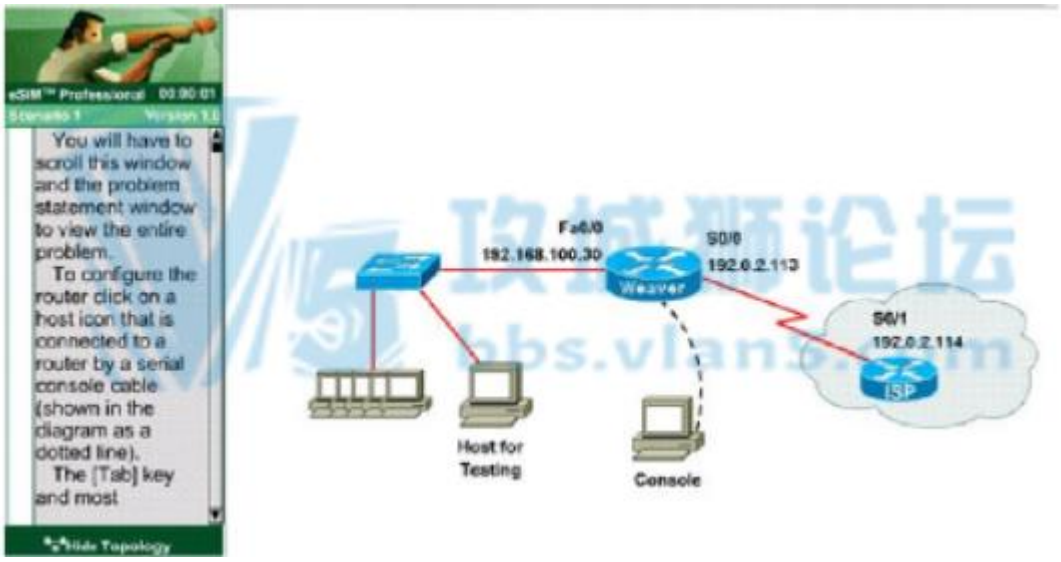
题库答案是 C，（R1 没有将 10.1.1.1 宣告）

考试的答案是 R5 没有 10.5.5.55 宣告进 EIGRP，选 A

8.NAT

The following have already been configured on the router:
--The basic router configuration
--The appropriate interfaces have been configured for NAT inside and NAT outside.
--The appropriate static routes have also been configured (since the company will be a stub network, no routing protocol will be required) --All passwords have been temporarily set to “cisco”.
The task is to complete the NAT configuration using all IP addresses assigned by the ISP to provide Internet access for the hosts in the Weaver LAN.

Functionality can be tested by clicking on the host provided for testing.
Configuration information:
router name – Weaver
inside global addresses – 198.18.184.105 - 198.18.184.110/29
inside local addresses - 192.168.100.17 – 192.168.100.30/28
number of inside hosts – 14
A network associate is configuring a router for the weaver company to provide internet access. The ISP has provided the company six public IP addresses of 198.18.184.105--198.18.184.110. The company has 14 hosts that need to access the internet simultaneously. The hosts in the company LAN have been assigned private space addresses in the range of 192.168.100.17 – 192.168.100.30.



答案：

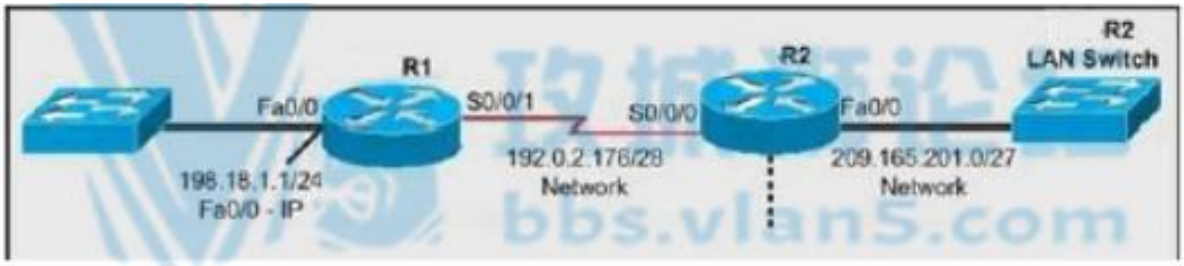
```
Router>enable
Router#configure terminal
Router(config)#hostname Weaver
Weaver(config)#ip nat pool mypool 198.18.184.105 198.18.184.110
netmask 255.255.255.248
Weaver(config)#access-list 1 permit 192.168.100.16 0.0.0.15
Weaver(config)#ip nat inside source list 1 pool mypool overload
Weaver(config)#interface fa0/0
Weaver(config-if)#ip nat inside
Weaver(config-if)#exit
Weaver(config)#interface s0/0
Weaver(config-if)#ip nat outside
Weaver(config-if)#end
Weaver#copy running-config startup-config
```

测试

```
C :\>ping 192.0.2.114
```

9. RIPV2

Central Florida Widgets recently installed a new router in their office. Complete the network installation by performing the initial router configurations and configuring R1PV2 routing using the router command line interface (CLI) on the RC.
Configure the router per the following requirements:
--Name of the router is R2
--Enable. secret password is cisco1
--The password to access user EXEC mode using the console is cisco2
--The password to allow telnet access to the router is cisco3
--IPV4 addresses must be configured as follows:
Ethernet network 209.165.201.0/27 - router has fourth assignable host address in subnet
Serial network is 192.0.2.176/28 - router has last assignable host address in the subnet.
--Interfaces should be enabled.
--Router protocol is RIPV2
Attention:
In practical examinations, please note the following, the actual information will prevail.
1. Name or the router is xxx
2. Enable. secret password is xxx
3. Password In access user EXEC mode using the console is xxx
4. The password to allow telnet access to the router is xxx
5. IP information

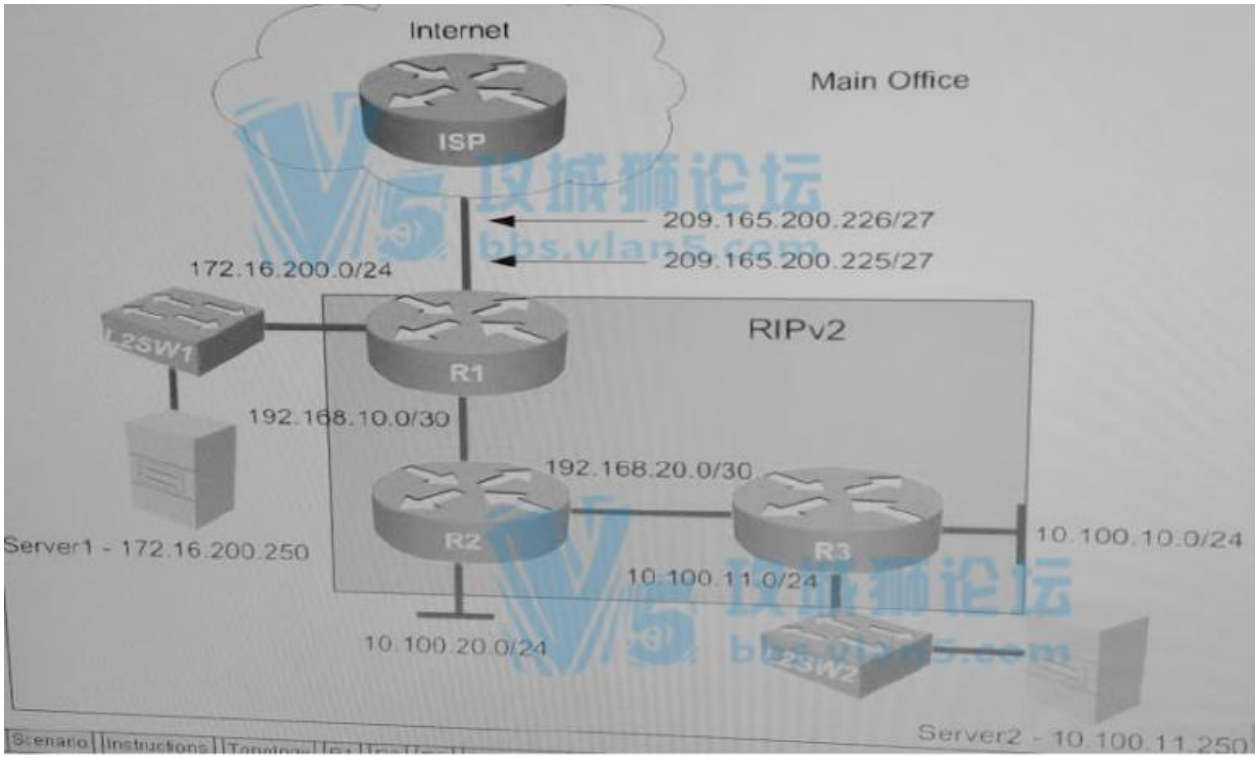


答案：

```
Router>enable
Router#config terminal
Router(config)#hostname R2
R2(config)#enable secret cisco1
R2(config)#line console 0
```

```
R2(config-line)#password cisco2
R2(config-line)#exit
R2(config)#line vty 0 4
R2(config-line)#password cisco3
R2(config-line)#login
R2(config-line)#exit
R2(config)#interface fa0/0
R2(config-if)#ip address 209.165.201.4 255.255.255.224
R2(config-if)#no shutdown
R2(config-if)#exit
R2(config)#interface s0/0/0
R2(config-if)#ip address 192.0.2.190 255.255.255.240
R2(config-if)#no shutdown
R2(config-if)#exit
R2(config)#router rip
R2(config-router)#version 2
R2(config-router)#network 209.165.201.0
R2(config-router)#network 192.0.2.176
R2(config-router)#end
R2#copy run start
```


10. DCHP+NAT+ACL



1. Examine the DHCP configuration between R2 and R3, R2 is configured as the DHCP server and R3 as the client. What is the reason R3 is not receiving the IP address via DHCP?

A. On R3, DHCP is not enabled on the interface that is connected to R2.

B. On R3, the interface that is connected to R2 is in shutdown condition.

C. On R2, the interface that is connected to R3 is in shutdown condition.

D. On R2, the network statement in the DHCP pool configuration is incorrectly configured.

Answer: A

请参考下图中标红内容.

```
R2
no mmi pvc
mmi snmp-timeout 180
!

!
ip dhcp excluded-address
192.168.20.1
!
ip dhcp pool DHCPASSIGNR3
 network 192.168.20.0 255.255.255.252
!
ip cef
no ipv6 cef
!
multilink bundle-name
authenticated
!
```

```
R3
!
!
interface Loopback0
 ip address 192.168.250.3 255.255.255.255
!
interface Ethernet0/0
 description ***Link to LAN***
 ip address 10.100.10.1 255.255.255.0
!
interface Ethernet0/1
 description ***Link to R2***
 no ip address
!
interface Ethernet0/2
 description ***Link to Server2 Segment***
 ip address 10.100.11.1 255.255.255.0
!
interface Ethernet0/3
 no ip address
```


2. R1 router clock is synchronized with ISP router. R2 is supposed to receive NTP updates from R1. But you observe that R2 clock is not synchronized with R1. What is the reason R2 is not receiving NTP updates from R1?

A. R1 router Ethernet interface that is connected to R2 is placed in shutdown condition.

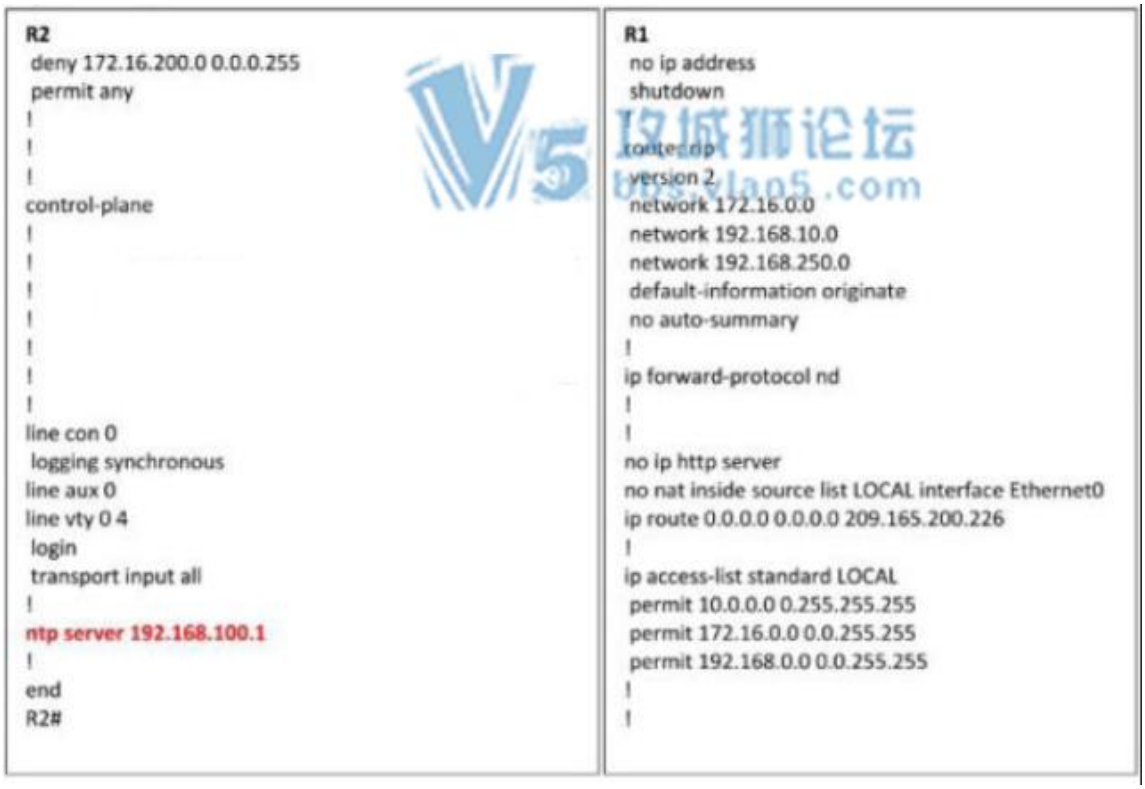
B. R2 router Ethernet interface that is connected to R1 is placed in shutdown condition.

C. The NTP server command not configured on R2 router.

D. The IP address that is used in the NTP configuration on R2 router is incorrect.

Answer: D

请参考下图中标红内容.



R2

```
deny 172.16.200.0 0.0.0.255
permit any
!
!
!
control-plane
!
!
!
!
!
!
!
line con 0
 logging synchronous
line aux 0
line vty 0 4
 login
 transport input all
!
ntp server 192.168.100.1
!
end
R2#
```

R1

```
no ip address
shutdown
!
router rip
 version 2
 network 172.16.0.0
 network 192.168.10.0
 network 192.168.250.0
 default-information originate
 no auto-summary
!
ip forward-protocol nd
!
!
no ip http server
no nat inside source list LOCAL interface Ethernet0
ip route 0.0.0.0 0.0.0.0 209.165.200.226
!
ip access-list standard LOCAL
 permit 10.0.0.0 0.255.255.255
 permit 172.16.0.0 0.0.255.255
 permit 192.168.0.0 0.0.255.255
!
!
```


3. Why applications that are installed on PC's in R2 LAN network 10.100.20.0/24 are unable to communicate with server1?

A. A standard ACL statement that is configured on R1 is blocking the traffic sourced from R2 LAN network.

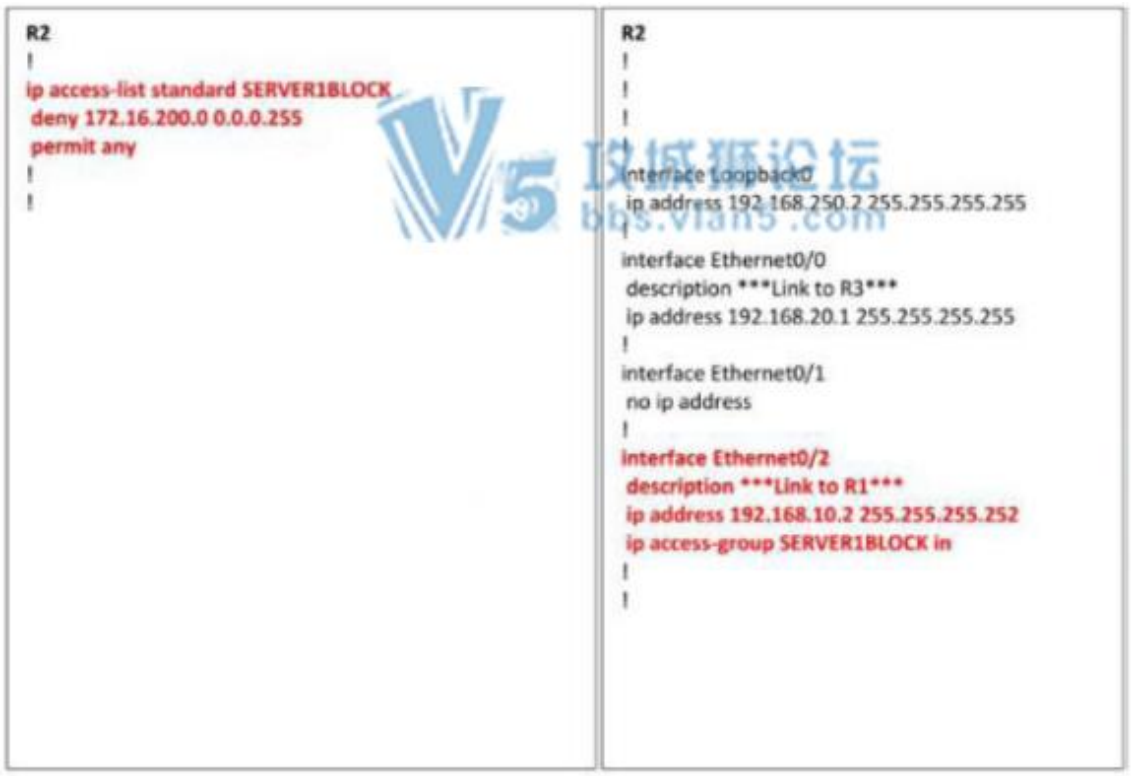
B. A standard ACL statement that is configured on R1 is blocking the traffic sourced from Server1 network.

C. A standard ACL statement that is configured on R2 is blocking the traffic sourced from Server1 network.

D. A standard ACL statement that is configured on R2 is blocking the traffic sourced from R2 LAN network.

Answer: C

请参考下图中标红内容.



4. Users complain that they are unable to reach internet sites. You are troubleshooting internet connectivity problem at main office. Which statement correctly identifies the problem on Router R1?

A. NAT configurations on the interfaces are incorrectly configured.

B. NAT translation statement incorrectly configured.

C. Interesting traffic for NAT ACL is incorrectly configured.

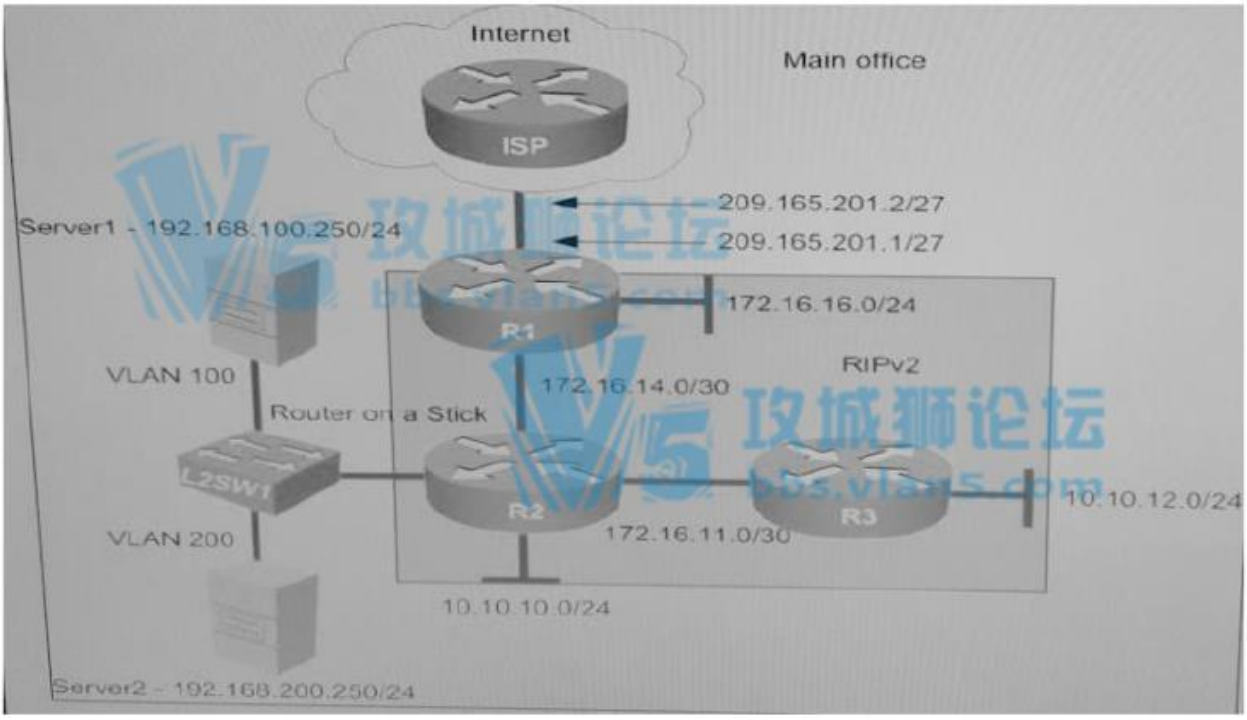
D. Only static NAT translation configured from the server, missing Dynamic NAT or Dynamic NAT overloading for internal networks.

Answer: A

请参考下图中标红内容.

```
R1
!
!
!
!
interface Loopback0
 ip address 192.168.250.1 255.255.255.255
!
interface Ethernet0/0
 description ***Link to ISP***
 ip address 209.165.200.225 255.255.255.224
 ip nat inside
 ip virtual-reassembly in
!
interface Ethernet0/1
 description ***Link to Server1 segment***
 ip address 172.16.200.1 255.255.255.0
 ip nat outside
 ip virtual-reassembly in
!
interface Ethernet0/2
 description ***Link to R2***
 ip address 192.168.10.1 255.255.255.252
 ip nat outside
 ip virtual-reassembly in
!
```

11. RIPv2 Sim



- Router R1 connects the main office to internet, and routers R2 and R3 are internal routers
- NAT is enabled on Router R1
- The routing protocol that is enabled between R1, R2 and R3 is RIPv2
- R1 sends default route into RIPv2 for internal routers to forward internet traffic to R1
- Server1 and Server 2 are placed in VLAN 100 and 200 respectively, and are still running on stick

Configuration with router R2.

You have console access on R1, R2, R3 and L2SW1 devices.

Use only show commands to troubleshoot the issues.

1. Server1 and Server2 are unable to communicate with the rest of the network. Your initial check with system administrators shows that IP address settings are correctly configured on the server side. What could be an issue?

A. The VLAN encapsulation is misconfigured on the router subinterfaces.

B. The Router is missing subinterface configuration.

C. The Trunk is not configured on the L2SW1 switch.

D. The IP address is misconfigured on the primary router interface.

Answer: A

2. Users in the main office complain that they are unable to reach internet sites. You observe that internet traffic that is destined towards ISP router is not forwarded correctly on Router R1. What could be an issue?

Ping to Internet server shows the following results from R1:

R1#ping 209.165.200.225

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 209.165.200.225, timeout is 2 seconds:

…..

Success rate is 0 percent (0/5)

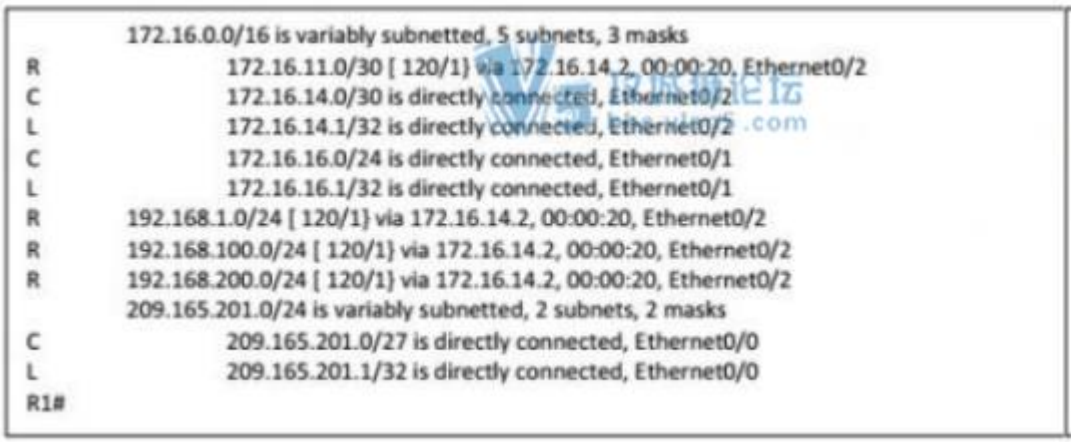
A. The next hop router address for the default route is incorrectly configured.

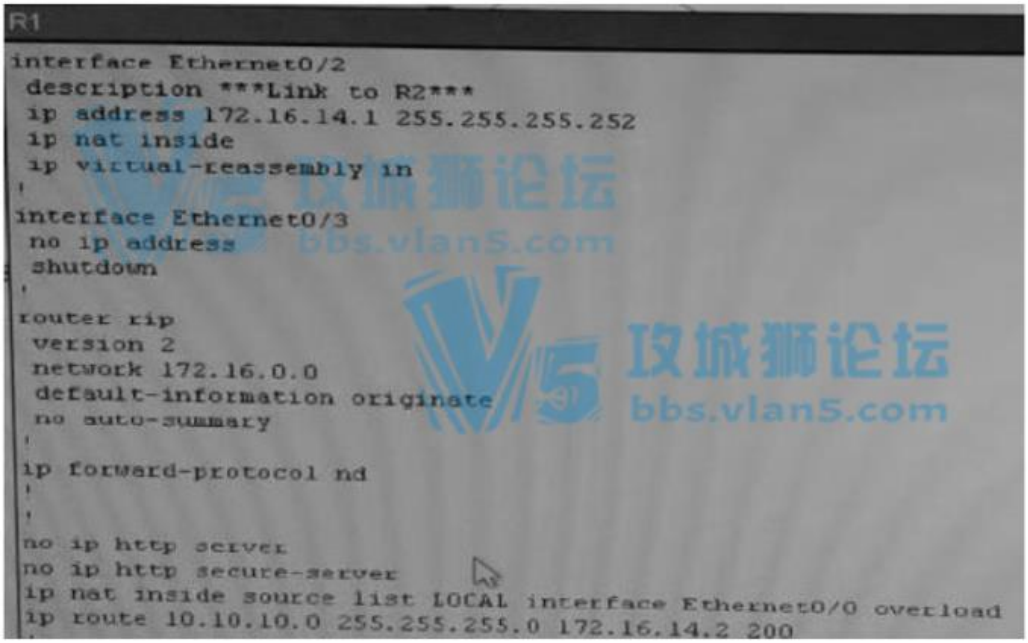
B. Default route pointing to ISP router is not configured on Router R1.

C. Default route pointing to ISP router is configured with AD of 225.

D. Router R1 configured as DHCP client is not receiving default route via DHCP from ISP router.

Answer: B





3. Examine R2 configuration, the traffic that is destined to R3 LAN network sourced from Router R2 is forwarded to R1 instead R3. What could be an issue?

R2#traceroute 10.10.12.1 source 10.10.10.1

Type escape sequence to abort.

Tracing the route to 10.10.12.1

VRF info: (vrf in name/id, vrf out name/id)

1 172.16.14.1 0 msec 1 msec 0 msec

2 172.16.14.1 !H !H *

R2#

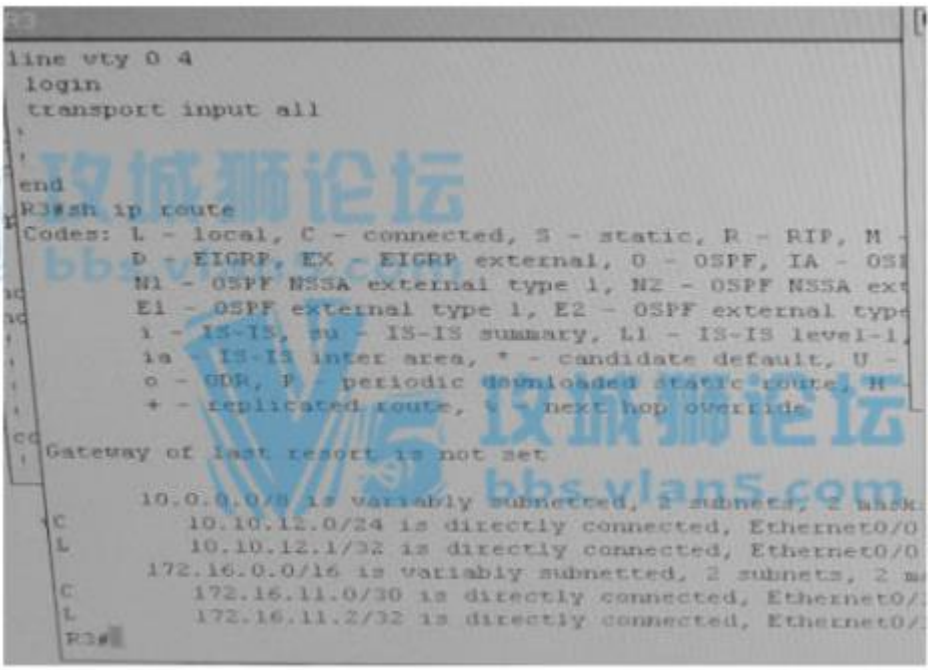
A. RIPv2 enabled on R3, but R3 LAN network that is not advertised into RIPv2 domain.

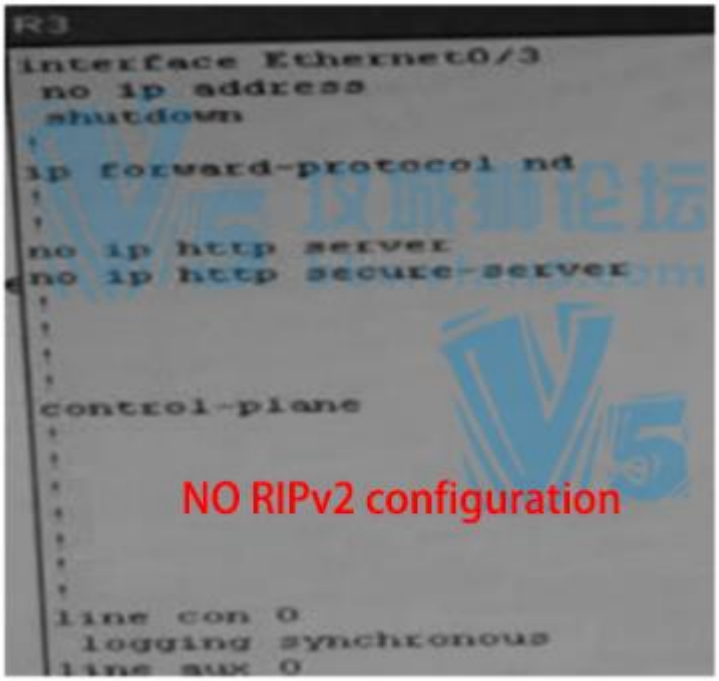
B. RIPv2 routing updates are suppressed between R2 and R3 using passive interface feature.

C. RIPv2 not enabled on R3.

D. No issue that is identified; this behavior is normal since default route propagated into RIPv2 domain by Router R1.

Answer: C





4.

What is the correct statement below after examining the R1 routing table?

A. Traffic that is destined to 10.10.10.0/24 from R1 LAN network uses static route instead RIPv2 Because the static route AD that is configured is less than the AD of RIPv2

B. Traffic that is destined to 10.10.10.0/24 from R1 LAN network uses RIPv2 instead of static route Because the static route AD that is configured is higher than the AD of RIPv2

C. Traffic that is destined to 10.10.10.0/24 from R1 LAN network uses static route instead of RIPv2 But the traffic is forwarded to the ISP instead of the internal network

D. Traffic that is destined to 10.10.10.0/24 from R1 LAN network uses RIPv2 instead of static route Because the static route AD that is configured is 255

Answer: B