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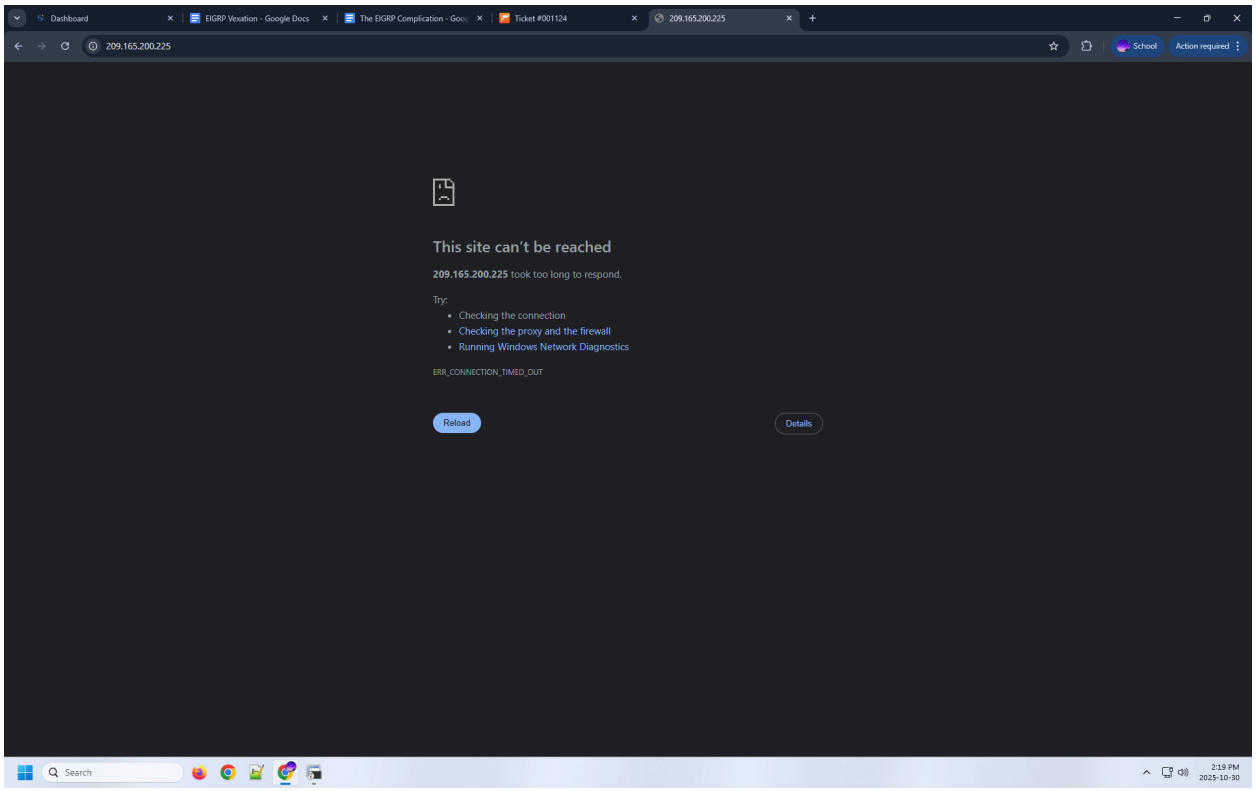
1. Verification of the issue

“When she tried to open a website (http://209.165.200.225), she received an error message from her browser saying that it cannot display the web page”



“She can reach the internal server **SRV1** without any problems.”

```
DLS1#ping 10.1.100.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.100.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms
DLS1#ping 10.1.100.254
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.100.254, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 1/1/1 ms
DLS1#
```

```
DLS2#ping 10.1.100.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.100.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/2 ms
DLS2#ping 10.1.100.254
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.100.254, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms
DLS2#
```

```
ALS1#ping 10.1.100.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.100.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/3/8 ms
ALS1#ping 10.1.100.254
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.100.254, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/4 ms
ALS1#
```

2. Troubleshooting method used

Method: bottom up method

- We start at the device at the very bottom which is SRV1 and work our way up until we find a break in connectivity

3. Steps taken to find the issue(s)

1. There is a static route on Loopback1 on R2, and not on R1

```
R2#show ip route
Codes: L - local, C - connected, S - static, 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, m - OMP
       n - NAT, Ni - NAT inside, No - NAT outside, Nd - NAT DIA
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       H - NHRP, G - NHRP registered, g - NHRP registration summary
       o - ODR, P - periodic downloaded static route, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is 0.0.0.0 to network 0.0.0.0

S*    0.0.0.0/0 is directly connected, Loopback1
      10.0.0.0/8 is variably subnetted, 14 subnets, 3 masks
C        10.1.1.0/30 is directly connected, GigabitEthernet0/0/0
L        10.1.1.2/32 is directly connected, GigabitEthernet0/0/0
C        10.1.1.4/30 is directly connected, GigabitEthernet0/0/1
```

```
r1#show ip route
Codes: L - local, C - connected, S - static, 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, m - OMP
       n - NAT, Ni - NAT inside, No - NAT outside, Nd - NAT DIA
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       H - NHRP, G - NHRP registered, g - NHRP registration summary
       o - ODR, P - periodic downloaded static route, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

      10.0.0.0/8 is variably subnetted, 14 subnets, 3 masks
C        10.1.1.0/30 is directly connected, GigabitEthernet0/0/0
L        10.1.1.1/32 is directly connected, GigabitEthernet0/0/0
D        10.1.1.4/30 [90/15360] via 10.1.1.2, 00:26:43, GigabitEthernet0/0/0
C        10.1.2.0/30 is directly connected, GigabitEthernet0/0/1
L        10.1.2.2/32 is directly connected, GigabitEthernet0/0/1
D        10.1.2.12/30 [90/20480] via 10.1.2.1, 00:25:26, GigabitEthernet0/0/1
                      [90/20480] via 10.1.1.2, 00:25:26, GigabitEthernet0/0/0
D        10.1.99.0/24 [90/15360] via 10.1.2.1, 00:25:26, GigabitEthernet0/0/1
D        10.1.100.0/24 [90/15360] via 10.1.2.1, 00:25:26, GigabitEthernet0/0/1
D        10.1.110.0/24 [90/15360] via 10.1.2.1, 00:25:26, GigabitEthernet0/0/1
D        10.1.120.0/24 [90/15360] via 10.1.2.1, 00:25:26, GigabitEthernet0/0/1
D        10.1.200.0/24 [90/15360] via 10.1.2.1, 00:25:26, GigabitEthernet0/0/1
C        10.1.201.1/32 is directly connected, Loopback0
D        10.1.202.1/32 [90/10880] via 10.1.1.2, 00:26:43, GigabitEthernet0/0/0
D        10.1.203.1/32 [90/16000] via 10.1.1.2, 00:25:20, GigabitEthernet0/0/0
r1#show ip eigrp neighbors
```

2.

```
DLS1#show ip route 10.1.100.1
Routing entry for 10.1.100.0/24
  Known via "connected", distance 0, metric 0 (connected, via interface)
  Redistributing via eigrp 1
  Routing Descriptor Blocks:
  * directly connected, via Vlan100
      Route metric is 0, traffic share count is 1
DLS1#show ip route 10.1.99.253
Routing entry for 10.1.99.0/24
  Known via "connected", distance 0, metric 0 (connected, via interface)
  Redistributing via eigrp 1
  Routing Descriptor Blocks:
  * directly connected, via Vlan99
      Route metric is 0, traffic share count is 1
DLS1#show ip eigrp neighborz
                           ^
% Invalid input detected at '^' marker.

DLS1#show ip eigrp neighbors
EIGRP-IPv4 Neighbors for AS(1)
H   Address                 Interface              Hold Uptime   SRTT   RTO  Q  Seq
                                                   (sec)         (ms)       Cnt Num
5   10.1.2.2                Gi1/0/11                 12 00:24:30    1   100  0  12
4   10.1.120.253            Vl120                    12 00:24:31    1   100  0  31
3   10.1.200.253            Vl200                    13 00:24:31    1   100  0  32
2   10.1.99.253             Vl99                     13 00:24:31    1   100  0  34
1   10.1.110.253            Vl110                    14 00:24:33    1   100  0  29
0   10.1.100.253            Vl100                    11 00:24:33    1   100  0  30
DLS1#show interfaces trunk

Port        Mode             Encapsulation  Status        Native vlan
Po1         on               802.1q         trunking      666
Po10        on               802.1q         trunking      666

Port        Vlans allowed on trunk
Po1         99,110,120,200
Po10        99-100,110,120,200

Port        Vlans allowed and active in management domain
Po1         99,110,120,200
Po10        99-100,110,120,200

Port        Vlans in spanning tree forwarding state and not pruned
Po1         99,110,120,200
Po10        99-100,110,120,200
DLS1#
```

3. Its passive interfaces on the routers so routes will not go, there is no passive interfaces on the switches

```
r1#show run | sec eigrp
router eigrp HQ
 !
 address-family ipv4 unicast autonomous-system 1
  !
  af-interface Loopback0
   passive-interface
  exit-af-interface
  !
  topology base
  exit-af-topology
  network 0.0.0.0
 exit-address-family
 !
 address-family ipv6 unicast autonomous-system 1
  !
  topology base
  exit-af-topology
 exit-address-family
snmp-server enable traps eigrp
r1#
```

```
R2#show run | sec eigrp
router eigrp HQ
 !
 address-family ipv4 unicast autonomous-system 1
  !
  af-interface Loopback0
   passive-interface
  exit-af-interface
  !
  af-interface Loopback1
   passive-interface
  exit-af-interface
  !
  topology base
  exit-af-topology
  network 10.0.0.0
 exit-address-family
 !
 address-family ipv6 unicast autonomous-system 1
  !
  topology base
  exit-af-topology
 exit-address-family
snmp-server enable traps eigrp
```

```
R3#show run | sec eigrp
router eigrp HQ
 !
 address-family ipv4 unicast autonomous-system 1
  !
  af-interface Loopback0
   passive-interface
  exit-af-interface
  !
  topology base
  exit-af-topology
  network 0.0.0.0
 exit-address-family
 !
 address-family ipv6 unicast autonomous-system 1
  !
  topology base
  exit-af-topology
 exit-address-family
snmp-server enable traps eigrp
R3#
```

```
DLS1#show run | sec eigrp
 ipv6 eigrp 1
 ipv6 eigrp 1
 ipv6 eigrp 1
 ipv6 eigrp 1
 ipv6 eigrp 1
 ipv6 eigrp 1
router eigrp 1
 network 10.1.0.0 0.0.255.255
 passive-interface default
 no passive-interface Vlan99
 no passive-interface Vlan100
 no passive-interface Vlan110
 no passive-interface Vlan120
 no passive-interface Vlan200
 no passive-interface GigabitEthernet1/0/11
ipv6 router eigrp 1
 eigrp router-id 1.1.1.1
snmp-server enable traps eigrp
DLS1#
```

```
DLS2#show interfaces trunk

Port        Mode             Encapsulation  Status        Native vlan
Po2         on               802.1q         trunking      666
Po10        on               802.1q         trunking      666

Port        Vlans allowed on trunk
Po2         99,110,120,200
Po10        99-100,110,120,200

Port        Vlans allowed and active in management domain
Po2         99,110,120,200
Po10        99-100,110,120,200

Port        Vlans in spanning tree forwarding state and not pruned
Po2         99,110,120,200
Po10        99-100,110,120,200
DLS2#shwo ip eigrp neighbors
      ^
% Invalid input detected at '^' marker.

DLS2#show ip eigrp neighbors
EIGRP-IPv4 Neighbors for AS(1)
H   Address                 Interface              Hold Uptime   SRTT   RTO  Q  Seq
                                                   (sec)         (ms)       Cnt Num
5   10.1.2.14               Gi1/0/11                 13 00:36:31    1   100  0  12
4   10.1.120.252            Vl120                    12 00:36:35    1   100  0  46
3   10.1.200.252            Vl200                    10 00:36:35    1   100  0  45
2   10.1.99.252             Vl99                     11 00:36:35 1021  5000  0  43
1   10.1.110.252            Vl110                    11 00:36:37    1   100  0  41
0   10.1.100.252            Vl100                    12 00:36:37    1   100  0  42
DLS2#
```

```
ALS1#show interfaces trunk

Port        Mode             Encapsulation  Status        Native vlan
Po1         on               802.1q         trunking      666
Po2         on               802.1q         trunking      666

Port        Vlans allowed on trunk
Po1         99,110,120,200
Po2         99,110,120,200

Port        Vlans allowed and active in management domain
Po1         99,110,120,200
Po2         99,110,120,200

Port        Vlans in spanning tree forwarding state and not pruned
Po1         99,110,120
Po2         200
ALS1#
ALS1#
ALS1#
ALS1#show ip eigrp neighbors
ALS1#
```

4. The update time is from an hour ago on all devices

```
  0.0.0.0
 Routing Information Sources:
   Gateway         Distance      Last Update
   10.1.2.1              90      01:20:31
   10.1.1.2              90      01:20:31
 Distance: internal 90 external 170
```

```
Routing Information Sources:
  Gateway         Distance      Last Update
  10.1.1.1              90      01:22:06
  10.1.1.5              90      01:22:06
Distance: internal 90 external 170
```

```
Routing Information Sources:
  Gateway         Distance      Last Update
  10.1.2.13             90      01:22:28
  10.1.1.6              90      01:22:28
Distance: internal 90 external 170
```

4. Description of the issue

1. Static addresses

2. Passive interfaces

- With having passive interfaces on the routers but not the switches, the result is no EIGRP neighbor relationship.
- The routers wont send EIGRP hellos, and when the switches try to form an adjacency it will never get a response
- In turn you will lose reachability if passive, so we need to change it to active

3. Redistribute static

- By redistributing static it allows the router to advertise routes to other routers

5. Commands entered to fix the issue

1. Commands entered:

- Int lo1
- No ip route 0.0.0.0 0.0.0.0 Loopback1

```
R2(config)#int lo1
R2(config-if)#do show running-config | include ip route
ip route 0.0.0.0 0.0.0.0 Loopback1
R2(config-if)#no ip route 0.0.0.0 0.0.0.0 Loopback1
R2(config)#end
R2#
Oct 30 15:11:03.221: %SYS-5-CONFIG_I: Configured from console by console
R2#
```

- Commands entered:
- router eigrp HQ
- address-family ipv4 unicast autonomous-system 1
- topology base

- redistribute

```
R2#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#router eigrp HQ
R2(config-router)#address-family ipv4 unicast autonomous-system 1
R2(config-router-af)#redistribute static
                     ^
% Invalid input detected at '^' marker.

R2(config-router-af)#topology base
R2(config-router-af-topology)#redistribute static
R2(config-router-af-topology)#
```

2. There were no issues
3. Commands entered: R1, R2, R3

- router eigrp HQ
- address-family ipv4 unicast autonomous-system 1
- af-int
- No passive-int

```
r1(config)#router eigrp HQ
r1(config-router)#
Oct 30 15:19:33.255: %PARSER-5-CFGLOG_LOGGEDCMD: User:console  logged command:router eigrp HQ
r1(config-router)#adress-family ipv4 unicast autonomous-system 1
                  ^
% Invalid input detected at '^' marker.

r1(config-router)#address-family ipv4 unicast autonomous-system 1
r1(config-router-af)#
Oct 30 15:20:11.889: %PARSER-5-CFGLOG_LOGGEDCMD: User:console  logged command:address-family ipv4 unicast autono
ous-system 1
r1(config-router-af)#af-int
% Incomplete command.

r1(config-router-af)#af-interface lo0
r1(config-router-af-interface)#no
Oct 30 15:20:41.682: %PARSER-5-CFGLOG_LOGGEDCMD: User:console  logged command:af-interface Loopback0
r1(config-router-af-interface)#no passive-interface
r1(config-router-af-interface)#
Oct 30 15:20:49.170: %PARSER-5-CFGLOG_LOGGEDCMD: User:console  logged command:no passive-interface
r1(config-router-af-interface)#
```

```
R2(config)#router eigrp HQ
R2(config-router)#address-family ipv4 unicast autonomous-system 1
R2(config-router-af)#af-interface lo0
R2(config-router-af-interface)#no passive-interface
R2(config-router-af-interface)#af-interface lo1
R2(config-router-af-interface)#no passive-interface
R2(config-router-af-interface)#end
R2#
Oct 30 15:22:19.615: %SYS-5-CONFIG_I: Configured from console by console
R2#
```

```
R3(config)#router eigrp HQ
R3(config-router)#addr
Oct 30 15:23:12.093: %PARSER-5-CFGLOG_LOGGEDCMD: User:console  logged command:router eigrp HQ
R3(config-router)#address-family ipv4 unicast autonomous-system 1
R3(config-router-af)#
Oct 30 15:23:25.645: %PARSER-5-CFGLOG_LOGGEDCMD: User:console  logged command:address-family ipv4 unicast autono
ous-system 1
R3(config-router-af)#af-interface lo0
R3(config-router-af-interface)#no p
Oct 30 15:23:38.822: %PARSER-5-CFGLOG_LOGGEDCMD: User:console  logged command:af-interface Loopback0
R3(config-router-af-interface)#no passive-int
R3(config-router-af-interface)#end
Oct 30 15:23:44.278: %PARSER-5-CFGLOG_LOGGEDCMD: User:console  logged command:no passive-interface
R3(config-router-af-interface)#end
R3#
Oct 30 15:23:47.663: %SYS-5-CONFIG_I: Configured from console by console
R3#
```

6. Verification the issue is resolved

1. Now there is no static route

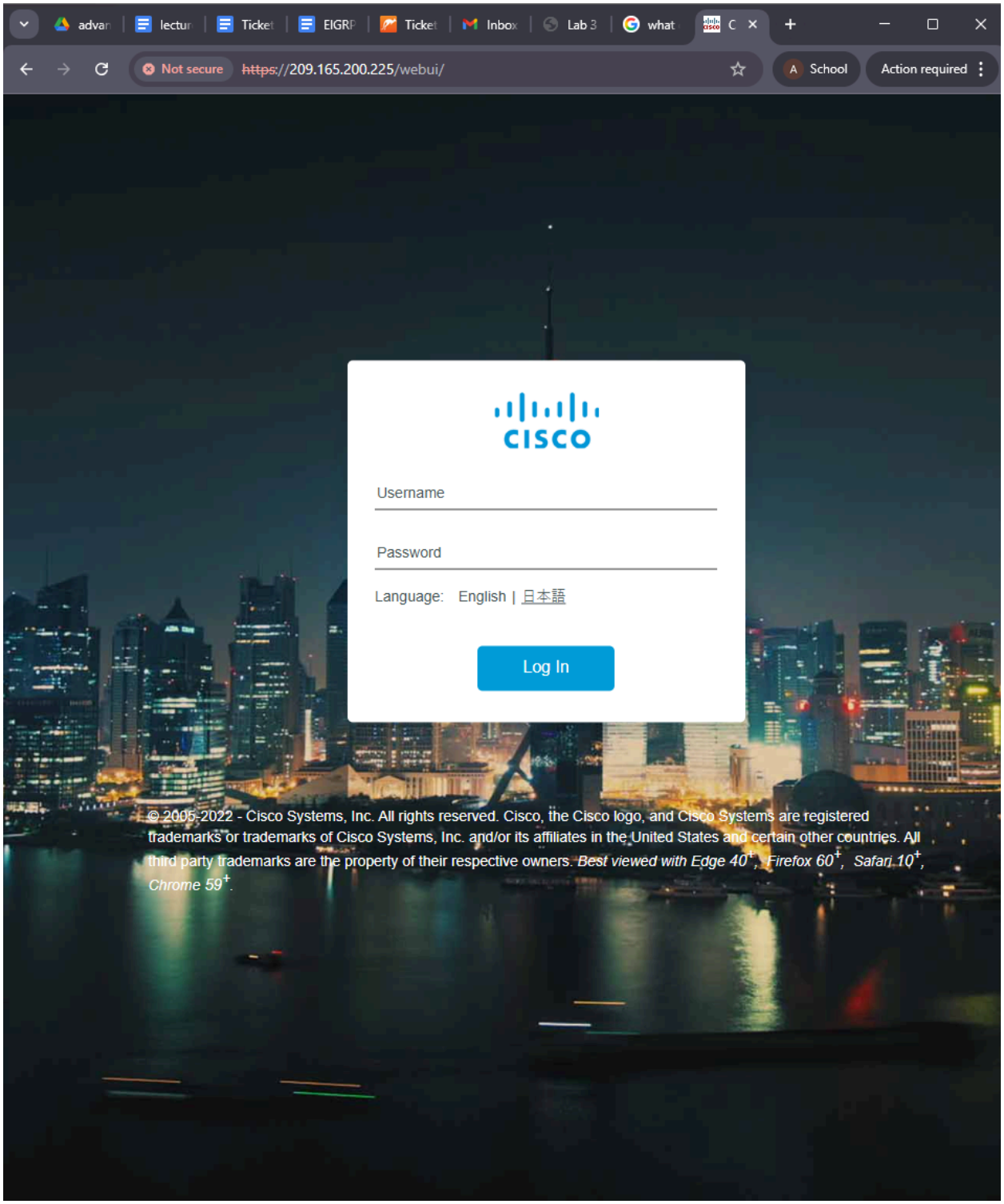
```
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, m - OMP
       n - NAT, Ni - NAT inside, No - NAT outside, Nd - NAT DIA
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       H - NHRP, G - NHRP registered, g - NHRP registration summary
       o - ODR, P - periodic downloaded static route, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR

Gateway of last resort is not set

      10.0.0.0/8 is variably subnetted, 14 subnets, 3 masks
C        10.1.1.0/30 is directly connected, GigabitEthernet0/0/0
L        10.1.1.2/32 is directly connected, GigabitEthernet0/0/0
C        10.1.1.4/30 is directly connected, GigabitEthernet0/0/1
L        10.1.1.6/32 is directly connected, GigabitEthernet0/0/1
D        10.1.2.0/30 [90/15360] via 10.1.1.1, 01:00:36, GigabitEthernet0/0/0
D        10.1.2.12/30 [90/15360] via 10.1.1.5, 01:00:33, GigabitEthernet0/0/1
D        10.1.99.0/24 [90/20480] via 10.1.1.5, 01:00:29, GigabitEthernet0/0/1
                      [90/20480] via 10.1.1.1, 01:00:29, GigabitEthernet0/0/0
D        10.1.100.0/24 [90/20480] via 10.1.1.5, 01:00:29, GigabitEthernet0/0/1
                       [90/20480] via 10.1.1.1, 01:00:29, GigabitEthernet0/0/0
D        10.1.110.0/24 [90/20480] via 10.1.1.5, 01:00:29, GigabitEthernet0/0/1
                       [90/20480] via 10.1.1.1, 01:00:29, GigabitEthernet0/0/0
D        10.1.120.0/24 [90/20480] via 10.1.1.5, 01:00:29, GigabitEthernet0/0/1
                       [90/20480] via 10.1.1.1, 01:00:29, GigabitEthernet0/0/0
D        10.1.200.0/24 [90/20480] via 10.1.1.5, 01:00:29, GigabitEthernet0/0/1
                       [90/20480] via 10.1.1.1, 01:00:29, GigabitEthernet0/0/0
D        10.1.201.1/32 [90/10880] via 10.1.1.1, 01:01:55, GigabitEthernet0/0/0
C        10.1.202.1/32 is directly connected, Loopback0
D        10.1.203.1/32 [90/10880] via 10.1.1.5, 01:01:13, GigabitEthernet0/0/1
C     209.0.0.0/8 is directly connected, Loopback1
      209.165.200.0/32 is subnetted, 1 subnets
L        209.165.200.225 is directly connected, Loopback1
R2#
```

2. No issues
3. No more passive interfaces

```
r1#show run | sec eigrp
router eigrp HQ
 !
 address-family ipv4 unicast autonomous-system 1
  !
  topology base
  exit-af-topology
  network 0.0.0.0
 exit-address-family
 !
 address-family ipv6 unicast autonomous-system 1
  !
  topology base
  exit-af-topology
 exit-address-family
snmp-server enable traps eigrp
r1#
```

```
R2#show run | sec eigrp
router eigrp HQ
 !
 address-family ipv4 unicast autonomous-system 1
  !
  topology base
  exit-af-topology
  network 10.0.0.0
 exit-address-family
 !
 address-family ipv6 unicast autonomous-system 1
  !
  topology base
  exit-af-topology
 exit-address-family
snmp-server enable traps eigrp
R2#
```

```
R3#show run | sec eigrp
router eigrp HQ
 !
 address-family ipv4 unicast autonomous-system 1
  !
  topology base
  exit-af-topology
  network 0.0.0.0
 exit-address-family
 !
 address-family ipv6 unicast autonomous-system 1
  !
  topology base
  exit-af-topology
 exit-address-family
snmp-server enable traps eigrp
R3#
```


Not secure
https://209.165.200.225/webui/
School
Action required
Username
Password
Language: English | 日本語
Log In
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