

Лабораторная работа 9. Устранение неполадок в работе протокола EIGRP

Цель работы:

Установить и устранить неисправности в работе протокола EIGRP.

Схема стенда:

Схема соединения маршрутизаторов в лабораторном стенде для выполнения лабораторной работы № 9 представлена на рисунке 9.

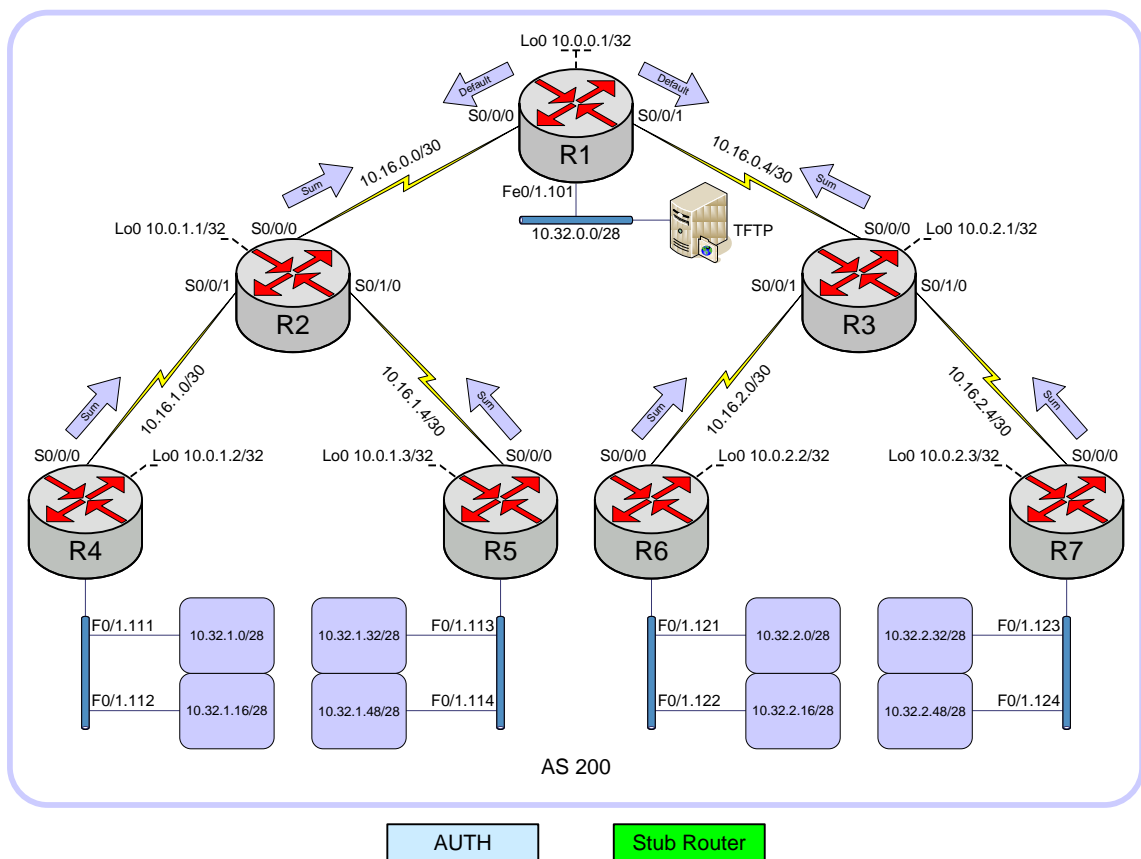


Рисунок 9 – Структурная схема стенда лабораторной работы №9

Список основных команд необходимых для выполнения лабораторной работы приводится в таблице 9.

Таблица 9 – Основные команды для лабораторной работы № 9

Команда	Описание
# debug eigrp packets	Включение режима отладки, процесса обмена всеми служебными пакетами EIGRP.
# debug ip eigrp	Включение детального режима отладки служебных пакетов EIGRP (кроме Hello пакетов).
#show key chain [<i>name-of-chain</i>]	Вывод параметров ключевых групп настроенных на маршрутизаторе.

Задание 1. Анализ неисправностей в работе протокола EIGRP

В этом задании необходимо провести анализ работы протокола EIGRP, выявить и устранить неисправности. На каждом маршрутизаторе не менее пяти неисправностей. Ниже приведены параметры правильной работы маршрутизаторов стенда.

R1

r1#show ip route

```
Gateway of last resort is 0.0.0.0 to network 0.0.0.0
 10.0.0.0/8 is variably subnetted, 10 subnets, 5 masks
D   10.0.2.0/30 [90/1920000] via 10.16.0.6, 00:55:41, Serial0/0/1
D   10.0.1.0/30 [90/1920000] via 10.16.0.2, 00:57:05, Serial0/0/0
C   10.0.0.1/32 is directly connected, Loopback0
D   10.16.2.0/29 [90/2304000] via 10.16.0.6, 00:55:41, Serial0/0/1
C   10.16.0.0/30 is directly connected, Serial0/0
D   10.16.1.0/29 [90/2304000] via 10.16.0.2, 00:57:05, Serial0/0/0
C   10.16.0.4/30 is directly connected, Serial0/0/1
D   10.32.2.0/26 [90/2306560] via 10.16.0.6, 00:54:18, Serial0/0/1
C   10.32.0.0/28 is directly connected, FastEthernet0/1.101
D   10.32.1.0/26 [90/2306560] via 10.16.0.2, 00:55:27, Serial0/0/0
D*  0.0.0.0/0 is a summary, 00:55:12, Null0
```

r1#show ip protocols

```
Routing Protocol is "eigrp 200"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  Redistributing: eigrp 200
  EIGRP NSF-aware route hold timer is 240s
  Automatic network summarization is not in effect
  Address Summarization:
    0.0.0.0/0 for Serial0/0/0, Serial0/0/1
    Summarizing with metric 28160
  Maximum path: 4
  Routing for Networks:
    10.0.0.1/32
    10.16.0.0/30
    10.16.0.4/30
    10.32.0.0/28
  Passive Interface(s):
    FastEthernet0/0
    FastEthernet0/1
    FastEthernet0/1.101
    Loopback0
    VoIP-Null0
  Routing Information Sources:
    Gateway         Distance      Last Update
    10.16.0.2        90           00:25:05
    10.16.0.6        90           00:24:33
  Distance: internal 90 external 170
```

r1#show ip eigrp neighbors detail

IP-EIGRP neighbors for process 200

H	Address	Interface	Hold (sec)	Uptime	SRTT (ms)	RTO	Q Cnt	Seq Num
1	10.16.0.6	Se0/0/1	12	00:29:40	121	726	0	36
Version 12.4/1.2, Retrans: 0, Retries: 0, Prefixes: 3								
0	10.16.0.2	Se0/0/0	14	00:31:03	6	200	0	32
Restart time 00:31:03								
Version 12.4/1.2, Retrans: 0, Retries: 0, Prefixes: 3								

r1#show ip eigrp interfaces detail

IP-EIGRP interfaces for process 200

Interface	Peers	Xmit Queue Un/Reliable	Mean SRTT	Pacing Time Un/Reliable	Multicast Flow Timer	Pending Routes
Se0/0/0	1	0/0	6	0/12	50	0
Hello interval is 5 sec						
Next xmit serial <none>						
Un/reliable mcasts: 0/0 Un/reliable ucasts: 13/13						
Mcast exceptions: 0 CR packets: 0 ACKs suppressed: 2						
Retransmissions sent: 0 Out-of-sequence rcvd: 0						
Authentication mode is md5, key-chain is "AUTH"						
Use unicast						
Se0/0/1	1	0/0	121	0/12	756	0
Hello interval is 5 sec						
Next xmit serial <none>						
Un/reliable mcasts: 0/0 Un/reliable ucasts: 11/11						
Mcast exceptions: 0 CR packets: 0 ACKs suppressed: 2						
Retransmissions sent: 1 Out-of-sequence rcvd: 0						
Authentication mode is md5, key-chain is "AUTH"						
Use unicast						

R2

r2#show ip route

Gateway of last resort is 10.16.0.1 to network 0.0.0.0

10.0.0.0/8 is variably subnetted, 11 subnets, 5 masks	
D	10.0.1.3/32 [90/1920000] via 10.16.1.6, 00:56:44, Serial0/1/0
D	10.0.1.2/32 [90/1920000] via 10.16.1.2, 00:57:34, Serial0/0/1
C	10.0.1.1/32 is directly connected, Loopback0
D	10.32.1.32/27 [90/1794560] via 10.16.1.6, 00:56:44, Serial0/1/0
D	10.0.1.0/30 is a summary, 00:59:12, Null0
C	10.16.0.0/30 is directly connected, Serial0/0/0
C	10.16.1.0/30 is directly connected, Serial0/0/1
D	10.16.1.0/29 is a summary, 00:59:12, Null0
C	10.16.1.4/30 is directly connected, Serial0/1/0
D	10.32.1.0/27 [90/1794560] via 10.16.1.2, 00:57:34, Serial0/0/1
D	10.32.1.0/26 is a summary, 00:57:34, Null0
D*	0.0.0.0/0 [90/1794560] via 10.16.0.1, 00:57:20, Serial0/0/0

r2#show ip eigrp neighbors detail

IP-EIGRP neighbors for process 200

H	Address	Interface	Hold (sec)	Uptime	SRTT (ms)	RTO	Q Cnt	Seq Num
2	10.16.1.6	Se0/1/0	12	00:30:14	163	978	0	7
Version 12.4/1.2, Retrans: 0, Retries: 0, Prefixes: 2								
Stub Peer Advertising (CONNECTED SUMMARY) Routes								
Suppressing queries								
1	10.16.1.2	Se0/0/1	10	00:31:03	21	200	0	9
Version 12.4/1.2, Retrans: 0, Retries: 0, Prefixes: 2								
Stub Peer Advertising (CONNECTED SUMMARY) Routes								
Suppressing queries								
0	10.16.0.1	Se0/0/0	10	00:32:41	2	200	0	23
Restart time 00:32:41								
Version 12.4/1.2, Retrans: 0, Retries: 0, Prefixes: 6								

r2#show ip protocols

```
Routing Protocol is "eigrp 200"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  Redistributing: eigrp 200
  EIGRP NSF-aware route hold timer is 240s
  Automatic network summarization is not in effect
  Address Summarization:
    10.32.1.0/26 for Serial0/0/0
      Summarizing with metric 1794560
    10.16.1.0/29 for Serial0/0/0
      Summarizing with metric 1792000
    10.0.1.0/30 for Serial0/0/0
      Summarizing with metric 128256
  Maximum path: 4
  Routing for Networks:
    10.0.1.1/32
    10.16.0.0/30
    10.16.0.4/30
    10.16.1.0/30
    10.16.1.4/30
  Passive Interface(s):
    FastEthernet0/0
    FastEthernet0/1
    Serial0/1/1
    Serial0/3/0
    Serial0/3/1
    Loopback0
    VoIP-Null0
  Routing Information Sources:
    Gateway         Distance      Last Update
    (this router)   90           00:32:59
    10.16.1.2       90           00:32:59
    10.16.0.1       90           00:31:50
    10.16.1.6       90           00:32:09
  Distance: internal 90 external 170
```

r2#show ip eigrp interfaces detail

```
IP-EIGRP interfaces for process 200
```

Interface	Peers	Xmit Queue Un/Reliable	Mean SRTT	Pacing Time Un/Reliable	Multicast Flow Timer	Pending Routes
Se0/0/0	1	0/0	2	0/12	50	0
Se0/0/1	1	0/0	21	0/12	112	0

```
Hello interval is 5 sec
Next xmit serial <none>
Un/reliable mcasts: 0/0  Un/reliable ucasts: 10/15
Mcast exceptions: 0  CR packets: 0  ACKs suppressed: 2
Retransmissions sent: 0  Out-of-sequence rcvd: 0
Authentication mode is md5, key-chain is "AUTH"
Use unicast
```

```
Hello interval is 5 sec
Next xmit serial <none>
Un/reliable mcasts: 0/0  Un/reliable ucasts: 4/17
Mcast exceptions: 0  CR packets: 0  ACKs suppressed: 5
Retransmissions sent: 6  Out-of-sequence rcvd: 0
Interface has all stub peers
Authentication mode is md5, key-chain is "AUTH"
Use unicast
```

```

Se0/1/0          1          0/0          163          0/12          828          0
Hello interval is 5 sec
Next xmit serial <none>
Un/reliable mcasts: 0/0  Un/reliable ucasts: 2/7
Mcast exceptions: 0  CR packets: 0  ACKs suppressed: 3
Retransmissions sent: 1  Out-of-sequence rcvd: 0
Interface has all stub peers
Authentication mode is md5,  key-chain is "AUTH"
Use unicast

```

R3

r3#show ip route

```

Gateway of last resort is 10.16.0.5 to network 0.0.0.0
 10.0.0.0/8 is variably subnetted, 11 subnets, 5 masks
D    10.32.2.32/27 [90/1794560] via 10.16.2.6, 00:57:34, Serial0/1/0
D    10.0.2.0/30 is a summary, 00:59:45, Null0
C    10.0.2.1/32 is directly connected, Loopback0
D    10.0.2.2/32 [90/1920000] via 10.16.2.2, 00:58:12, Serial0/0/1
D    10.0.2.3/32 [90/1920000] via 10.16.2.6, 00:57:34, Serial0/1/0
C    10.16.2.0/30 is directly connected, Serial0/0/1
D    10.16.2.0/29 is a summary, 00:59:44, Null0
C    10.16.2.4/30 is directly connected, Serial0/1/0
C    10.16.0.4/30 is directly connected, Serial0/0/0
D    10.32.2.0/27 [90/1794560] via 10.16.2.2, 00:58:12, Serial0/0/1
D    10.32.2.0/26 is a summary, 00:58:12, Null0
D*   0.0.0.0/0 [90/1794560] via 10.16.0.5, 00:04:07, Serial0/0/0

```

r3#show ip eigrp interfaces detail

IP-EIGRP interfaces for process 200

Interface	Peers	Xmit Queue Un/Reliable	Mean SRTT	Pacing Time Un/Reliable	Multicast Flow Timer	Pending Routes
Se0/0/0	1	0/0	4	0/12	50	0
Hello interval is 5 sec Next xmit serial <none> Un/reliable mcasts: 0/0 Un/reliable ucasts: 6/16 Mcast exceptions: 0 CR packets: 0 ACKs suppressed: 2 Retransmissions sent: 2 Out-of-sequence rcvd: 0 Authentication mode is md5, key-chain is "AUTH" Use unicast						
Se0/0/1	1	0/0	1	0/12	50	0
Hello interval is 5 sec Next xmit serial <none> Un/reliable mcasts: 0/0 Un/reliable ucasts: 7/12 Mcast exceptions: 0 CR packets: 0 ACKs suppressed: 0 Retransmissions sent: 1 Out-of-sequence rcvd: 0 Interface has all stub peers Authentication mode is md5, key-chain is "AUTH" Use unicast						
Se0/1/0	1	0/0	329	0/12	1652	0
Hello interval is 5 sec Next xmit serial <none> Un/reliable mcasts: 0/0 Un/reliable ucasts: 3/15 Mcast exceptions: 0 CR packets: 0 ACKs suppressed: 4 Retransmissions sent: 6 Out-of-sequence rcvd: 0 Authentication mode is md5, key-chain is "AUTH" Use unicast						

r3#show ip eigrp neighbors detail

IP-EIGRP neighbors for process 200

H	Address	Interface	Hold (sec)	Uptime	SRTT (ms)	RTO	Q Cnt	Seq Num
2	10.16.2.6	Se0/1/0	13	00:35:28	329	1974	0	7
Version 12.4/1.2, Retrans: 0, Retries: 0, Prefixes: 2 Stub Peer Advertising (CONNECTED SUMMARY) Routes Suppressing queries								
1	10.16.2.2	Se0/0/1	12	00:36:05	1	200	0	10
Version 12.4/1.2, Retrans: 0, Retries: 0, Prefixes: 2 Stub Peer Advertising (CONNECTED SUMMARY) Routes Suppressing queries								
0	10.16.0.5	Se0/0/0	10	00:37:33	4	200	0	24
Version 12.4/1.2, Retrans: 2, Retries: 0, Prefixes: 6								

r3#show ip protocols

Routing Protocol is "eigrp 200"

Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Default networks flagged in outgoing updates
Default networks accepted from incoming updates
EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
EIGRP maximum hopcount 100
EIGRP maximum metric variance 1
Redistributing: eigrp 200
EIGRP NSF-aware route hold timer is 240s
Automatic network summarization is not in effect

Address Summarization:

10.32.2.0/26 for Serial0/0/0
Summarizing with metric 1794560
10.16.2.0/29 for Serial0/0/0
Summarizing with metric 1792000
10.0.2.0/30 for Serial0/0/0
Summarizing with metric 128256

Maximum path: 4

Routing for Networks:

10.0.2.1/32
10.16.0.4/30
10.16.2.0/30
10.16.2.4/30

Passive Interface(s):

FastEthernet0/0
FastEthernet0/1
Serial0/1/1
Serial0/3/0
Serial0/3/1
Loopback0
VoIP-Null0

Routing Information Sources:

Gateway	Distance	Last Update
(this router)	90	00:35:03
10.16.2.2	90	00:34:31
10.16.2.6	90	00:34:26
10.16.0.5	90	00:34:31

Distance: internal 90 external 170

R4

r4#show ip eigrp neighbors detail

IP-EIGRP neighbors for process 200

H	Address	Interface	Hold (sec)	Uptime	SRTT (ms)	RTO	Q Cnt	Seq Num
0	10.16.1.1	Se0/0/0	11	00:41:30	6	200	0	31
Version 12.4/1.2, Retrans: 2, Retries: 0, Prefixes: 11								

r4#show ip route

```
Gateway of last resort is 10.16.1.1 to network 0.0.0.0
 10.0.0.0/8 is variably subnetted, 10 subnets, 4 masks
D    10.0.1.3/32 [90/2432000] via 10.16.1.1, 00:59:38, Serial0/0/0
C    10.0.1.2/32 is directly connected, Loopback0
D    10.0.1.1/32 [90/1920000] via 10.16.1.1, 01:00:28, Serial0/0/0
D    10.32.1.32/27 [90/2306560] via 10.16.1.1, 00:59:38, Serial0/0/0
D    10.16.0.0/30 [90/2304000] via 10.16.1.1, 01:00:28, Serial0/0/0
C    10.16.1.0/30 is directly connected, Serial0/0/0
D    10.16.1.4/30 [90/2304000] via 10.16.1.1, 01:00:28, Serial0/0/0
C    10.32.1.0/28 is directly connected, FastEthernet0/1.111
D    10.32.1.0/27 is a summary, 01:00:38, Null0
C    10.32.1.16/28 is directly connected, FastEthernet0/1.112
D*   0.0.0.0/0 [90/2306560] via 10.16.1.1, 01:00:14, Serial0/0/0
```

r4#show ip protocols

```
Routing Protocol is "eigrp 200"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  EIGRP stub, connected, summary
  Redistributing: eigrp 200
  EIGRP NSF-aware route hold timer is 240s
  Automatic network summarization is not in effect
  Address Summarization:
    10.32.1.0/27 for Serial0/0/0
    Summarizing with metric 28160
  Maximum path: 4
  Routing for Networks:
    10.0.1.2/32
    10.16.1.0/30
    10.32.1.0/28
    10.32.1.16/28
  Passive Interface(s):
    FastEthernet0/0
    FastEthernet0/1
    FastEthernet0/1.111
    FastEthernet0/1.112
    Serial0/0/1
    Loopback0
    VoIP-Null0
  Routing Information Sources:
    Gateway         Distance      Last Update
    (this router)   90           00:40:02
    10.16.1.1       90           00:38:43
  Distance: internal 90 external 170
```

r4#show ip eigrp interfaces detail

```
IP-EIGRP interfaces for process 200
```

Interface	Peers	Xmit Queue Un/Reliable	Mean SRTT	Pacing Time Un/Reliable	Multicast Flow Timer	Pending Routes
Se0/0/0	1	0/0	6	0/12	50	0

```
Hello interval is 5 sec
Next xmit serial <none>
Un/reliable mcasts: 0/0  Un/reliable ucasts: 4/11
Mcast exceptions: 0  CR packets: 0  ACKs suppressed: 4
Retransmissions sent: 2  Out-of-sequence rcvd: 0
Authentication mode is md5,  key-chain is "AUTH"
Use unicast
```


R5

r5#show ip route

```
Gateway of last resort is 10.16.1.5 to network 0.0.0.0
 10.0.0.0/8 is variably subnetted, 10 subnets, 4 masks
C    10.0.1.3/32 is directly connected, Loopback0
D    10.0.1.2/32 [90/2432000] via 10.16.1.5, 01:00:25, Serial0/0/0
D    10.0.1.1/32 [90/1920000] via 10.16.1.5, 01:00:25, Serial0/0/0
C    10.32.1.32/28 is directly connected, FastEthernet0/1.113
D    10.32.1.32/27 is a summary, 01:00:34, Null0
D    10.16.0.0/30 [90/2304000] via 10.16.1.5, 01:00:25, Serial0/0/0
C    10.32.1.48/28 is directly connected, FastEthernet0/1.114
D    10.16.1.0/30 [90/2304000] via 10.16.1.5, 01:00:25, Serial0/0/0
C    10.16.1.4/30 is directly connected, Serial0/0/0
D    10.32.1.0/27 [90/2306560] via 10.16.1.5, 01:00:25, Serial0/0/0
D*   0.0.0.0/0 [90/2306560] via 10.16.1.5, 00:06:01, Serial0/0/0
```

r5#show ip protocols

```
Routing Protocol is "eigrp 200"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  EIGRP stub, connected, summary
  Redistributing: eigrp 200
  EIGRP NSF-aware route hold timer is 240s
  Automatic network summarization is not in effect
  Address Summarization:
    10.32.1.32/27 for Serial0/0/0
    Summarizing with metric 28160
  Maximum path: 4
  Routing for Networks:
    10.0.1.3/32
    10.16.1.4/30
    10.32.1.32/28
    10.32.1.48/28
  Passive Interface(s):
    FastEthernet0/0
    FastEthernet0/1
    FastEthernet0/1.113
    FastEthernet0/1.114
    Serial0/0/1
    Loopback0
    VoIP-Null0
  Routing Information Sources:
    Gateway         Distance      Last Update
    (this router)   90           00:44:19
    10.16.1.5       90           00:43:50
  Distance: internal 90 external 170
```

r5#show ip eigrp neighbors detail

```
IP-EIGRP neighbors for process 200
H   Address                Interface          Hold Uptime    SRTT    RTO  Q  Seq
                               (sec)           (ms)          Cnt  Num
0   10.16.1.5                Se0/0/0           10 00:43:07    8    200  0  33
Version 12.4/1.2, Retrans: 2, Retries: 0, Prefixes: 11
```

r5#show ip eigrp interfaces detail

IP-EIGRP interfaces for process 200

Interface	Peers	Xmit Queue Un/Reliable	Mean SRTT	Pacing Time Un/Reliable	Multicast Flow Timer	Pending Routes
Se0/0/0	1	0/0	8	0/12	56	0

Hello interval is 5 sec
Next xmit serial <none>
Un/reliable mcasts: 0/0 Un/reliable ucasts: 1/8
Mcast exceptions: 0 CR packets: 0 ACKs suppressed: 3
Retransmissions sent: 2 Out-of-sequence rcvd: 0
Authentication mode is md5, key-chain is "AUTH"
Use unicast

R6

r6#show ip route

Gateway of last resort is 10.16.2.1 to network 0.0.0.0

10.0.0.0/8 is variably subnetted, 10 subnets, 4 masks
D 10.32.2.32/27 [90/2306560] via 10.16.2.1, 01:02:38, Serial0/0/0
D 10.0.2.1/32 [90/1920000] via 10.16.2.1, 01:03:16, Serial0/0/0
C 10.0.2.2/32 is directly connected, Loopback0
D 10.0.2.3/32 [90/2432000] via 10.16.2.1, 01:02:38, Serial0/0/0
C 10.16.2.0/30 is directly connected, Serial0/0/0
D 10.16.2.4/30 [90/2304000] via 10.16.2.1, 01:03:16, Serial0/0/0
D 10.16.0.4/30 [90/2304000] via 10.16.2.1, 01:03:16, Serial0/0/0
C 10.32.2.0/28 is directly connected, FastEthernet0/1.121
D 10.32.2.0/27 is a summary, 01:03:26, Null0
C 10.32.2.16/28 is directly connected, FastEthernet0/1.122
D* 0.0.0.0/0 [90/2306560] via 10.16.2.1, 00:09:11, Serial0/0/0

r6#show ip eigrp neighbors detail

IP-EIGRP neighbors for process 200

H	Address	Interface	Hold Uptime (sec)	SRTT (ms)	RTO	Q Cnt	Seq Num
0	10.16.2.1	Se0/0/0	10 00:46:28	4	200	0	35

Version 12.4/1.2, Retrans: 2, Retries: 0, Prefixes: 11

r6#show ip eigrp interfaces detail

IP-EIGRP interfaces for process 200

Interface	Peers	Xmit Queue Un/Reliable	Mean SRTT	Pacing Time Un/Reliable	Multicast Flow Timer	Pending Routes
Se0/0/0	1	0/0	4	0/12	50	0

Hello interval is 5 sec
Next xmit serial <none>
Un/reliable mcasts: 0/0 Un/reliable ucasts: 9/11
Mcast exceptions: 0 CR packets: 0 ACKs suppressed: 1
Retransmissions sent: 2 Out-of-sequence rcvd: 0
Authentication mode is md5, key-chain is "AUTH"
Use unicast

r6#show ip protocols

```
Routing Protocol is "eigrp 200"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Default networks flagged in outgoing updates
  Default networks accepted from incoming updates
  EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
  EIGRP maximum hopcount 100
  EIGRP maximum metric variance 1
  EIGRP stub, connected, summary
  Redistributing: eigrp 200
  EIGRP NSF-aware route hold timer is 240s
  Automatic network summarization is not in effect
  Address Summarization:
    10.32.2.0/27 for Serial0/0/0
      Summarizing with metric 28160
  Maximum path: 4
  Routing for Networks:
    10.0.2.2/32
    10.16.2.0/30
    10.32.2.0/28
    10.32.2.16/28
  Passive Interface(s):
    FastEthernet0/0
    FastEthernet0/1
    FastEthernet0/1.121
    FastEthernet0/1.122
    Serial0/0/1
    Loopback0
    VoIP-Null0
  Routing Information Sources:
    Gateway         Distance      Last Update
    (this router)   90           00:47:07
    10.16.2.1       90           00:46:20
  Distance: internal 90 external 170
```

R7**r7#show ip route**

```
Gateway of last resort is 10.16.2.5 to network 0.0.0.0
 10.0.0.0/8 is variably subnetted, 10 subnets, 4 masks
C    10.32.2.32/28 is directly connected, FastEthernet0/1.123
D    10.32.2.32/27 is a summary, 01:03:51, Null0
D    10.0.2.1/32 [90/1920000] via 10.16.2.5, 01:03:42, Serial0/0/0
D    10.0.2.2/32 [90/2432000] via 10.16.2.5, 01:03:42, Serial0/0/0
C    10.0.2.3/32 is directly connected, Loopback0
C    10.32.2.48/28 is directly connected, FastEthernet0/1.124
D    10.16.2.0/30 [90/2304000] via 10.16.2.5, 01:03:42, Serial0/0/0
C    10.16.2.4/30 is directly connected, Serial0/0/0
D    10.16.0.4/30 [90/2304000] via 10.16.2.5, 01:03:42, Serial0/0/0
D    10.32.2.0/27 [90/2306560] via 10.16.2.5, 01:03:42, Serial0/0/0
D*   0.0.0.0/0 [90/2306560] via 10.16.2.5, 01:03:14, Serial0/0/0
```

r7#show ip eigrp neighbors detail

IP-EIGRP neighbors for process 200

H	Address	Interface	Hold Uptime (sec)	SRTT (ms)	RTO	Q Cnt	Seq Num
0	10.16.2.5	Se0/0/0	11 00:48:24	9	200	0	34

Version 12.4/1.2, Retrans: 2, Retries: 0, Prefixes: 11

r7#show ip eigrp interfaces detail

IP-EIGRP interfaces for process 200

Interface	Peers	Xmit Queue Un/Reliable	Mean SRTT	Pacing Time Un/Reliable	Multicast Flow Timer	Pending Routes
Se0/0/0	1	0/0	9	0/12	60	0

Hello interval is 5 sec

Next xmit serial <none>

Un/reliable mcasts: 0/0 Un/reliable ucasts: 3/9

Mcast exceptions: 0 CR packets: 0 ACKs suppressed: 3

Retransmissions sent: 2 Out-of-sequence rcvd: 0

Authentication mode is md5, key-chain is "AUTH"

Use unicast

r7#show ip protocols

Routing Protocol is "eigrp 200"

Outgoing update filter list for all interfaces is not set

Incoming update filter list for all interfaces is not set

Default networks flagged in outgoing updates

Default networks accepted from incoming updates

EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0

EIGRP maximum hopcount 100

EIGRP maximum metric variance 1

EIGRP stub, connected, summary

Redistributing: eigrp 200

EIGRP NSF-aware route hold timer is 240s

Automatic network summarization is not in effect

Address Summarization:

10.32.2.32/27 for Serial0/0/0

Summarizing with metric 28160

Maximum path: 4

Routing for Networks:

10.0.2.3/32

10.16.2.4/30

10.32.2.32/28

10.32.2.48/28

Passive Interface(s):

FastEthernet0/0

FastEthernet0/1

FastEthernet0/1.123

FastEthernet0/1.124

Serial0/0/1

Loopback0

VoIP-Null0

Routing Information Sources:

Gateway	Distance	Last Update
(this router)	90	00:51:59
10.16.2.5	90	00:51:49

Distance: internal 90 external 170