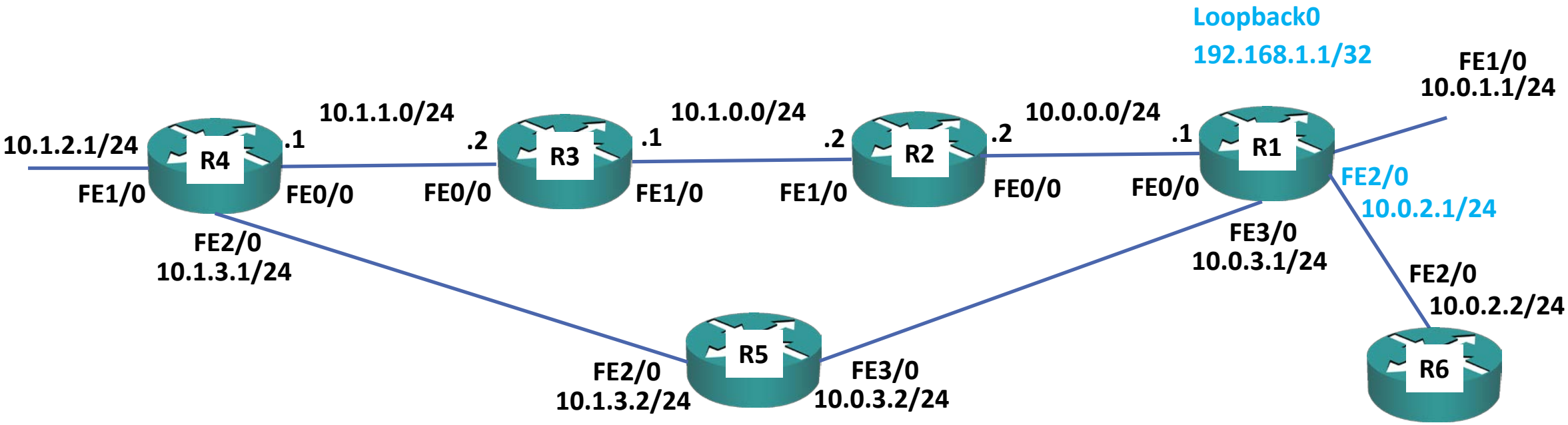
Passive Interfaces

- Passive interfaces work differently in RIP than other routing protocols
- With other routing protocols, a passive interface will not send out or listen for routing updates
- The network configured on the interface will be advertised to other peer routers running the routing protocol
- In RIP, a passive interface does not send out updates but it does listento incoming updates from other RIP speaking neighbors
- The router can receive updates on the passive interface and use them in the routing table.

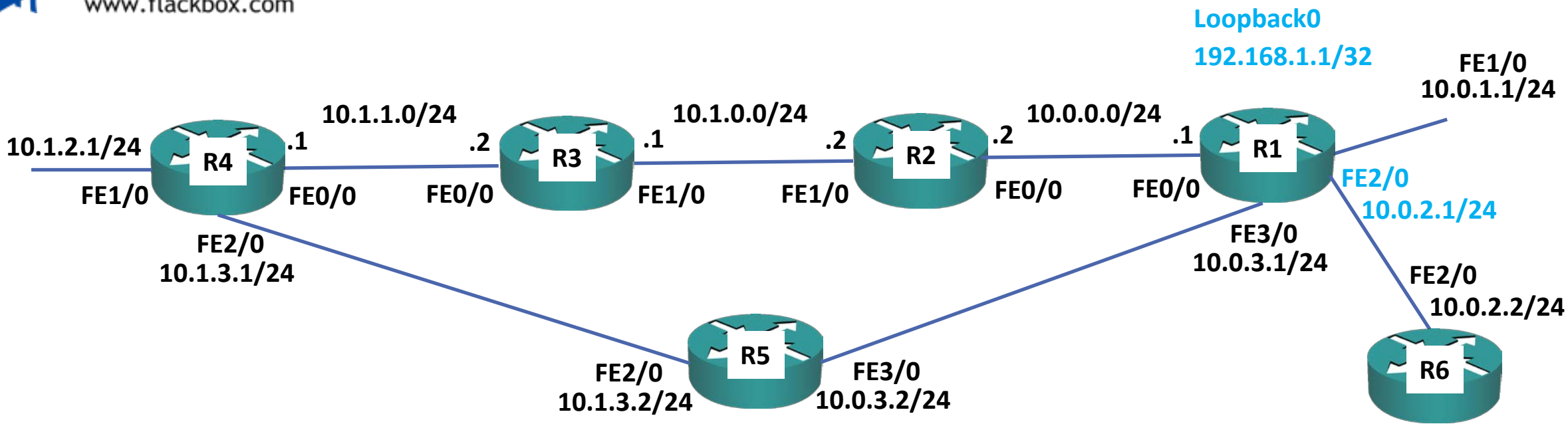
Passive Interface Configuration




```
R1(config)#router rip
R1(config-router)#passive-interface loopback 0
R1(config-router)#passive-interface f2/0
```

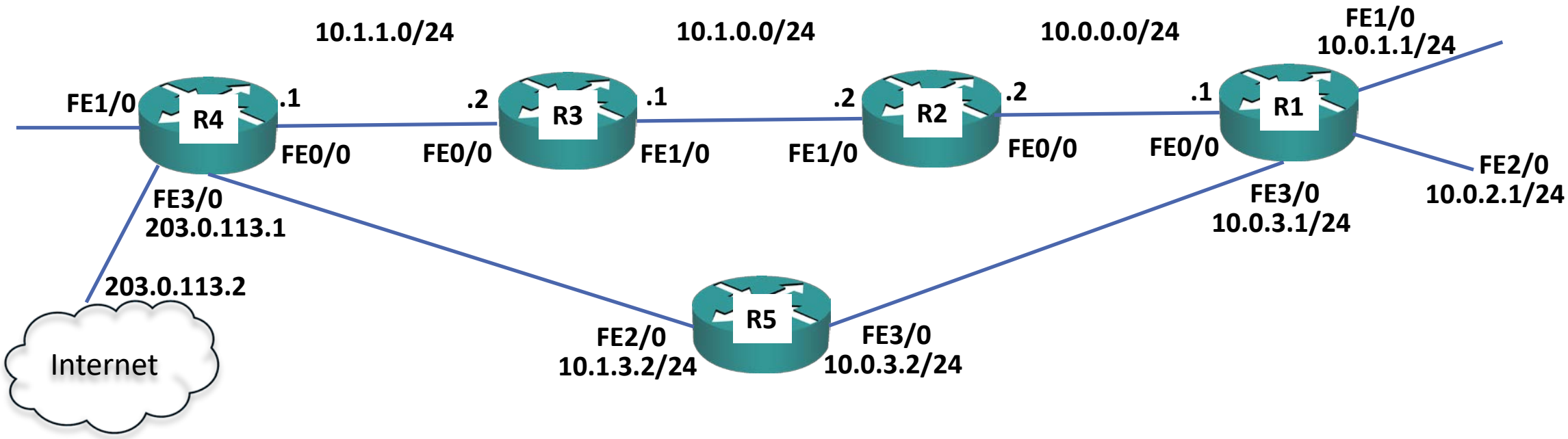
Passive Interface Configuration

FLACKBOX
www.flackbox.com




```
R1(config)#router rip
R1(config-router)#passive-interface default
R1(config-router)#no passive-interface f0/0
R1(config-router)#no passive-interface f1/0
R1(config-router)#no passive-interface f3/0
```

Default Route Injection




```
R4(config)#ip route 0.0.0.0 0.0.0.0 203.0.113.2
R4(config)#router rip
R4(config-router)#default-information originate
```

Default Route Injection Verification


```
R1#sh 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
       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
       o - ODR, P - periodic downloaded static route, H - NHRP, l - LISP
       + - replicated route, % - next hop override

Gateway of last resort is 10.0.3.2 to network 0.0.0.0

R*    0.0.0.0/0 [120/2] via 10.0.3.2, 00:00:25, FastEthernet3/0
      10.0.0.0/8 is variably subnetted, 12 subnets, 2 masks
C        10.0.0.0/24 is directly connected, FastEthernet0/0
L        10.0.0.1/32 is directly connected, FastEthernet0/0
C        10.0.1.0/24 is directly connected, FastEthernet1/0
L        10.0.1.1/32 is directly connected, FastEthernet1/0
C        10.0.2.0/24 is directly connected, FastEthernet2/0
L        10.0.2.1/32 is directly connected, FastEthernet2/0
C        10.0.3.0/24 is directly connected, FastEthernet3/0
L        10.0.3.1/32 is directly connected, FastEthernet3/0
R        10.1.0.0/24 [120/1] via 10.0.0.2, 00:00:00, FastEthernet0/0
R        10.1.1.0/24 [120/2] via 10.0.3.2, 00:00:25, FastEthernet3/0
                     [120/2] via 10.0.0.2, 00:00:00, FastEthernet0/0
R        10.1.2.0/24 [120/2] via 10.0.3.2, 00:00:25, FastEthernet3/0
R        10.1.3.0/24 [120/1] via 10.0.3.2, 00:00:25, FastEthernet3/0
      192.168.1.0/32 is subnetted, 1 subnets
C        192.168.1.1 is directly connected, Loopback0
```

RIP Default Timers

- **Update:** The router sends updates every 30 seconds.
- **Invalid:** After no updates for 180 seconds the route becomes invalid.
- **Hold Down:** The hold down timer is used to stabilize the network, it starts when the invalid timer completes. When a route enters hold down, it can't be installed even if there is a new route with a better metric. 180 seconds by default.
- **Flush:** 240 seconds from the last update the route is flushed.

RIP Default Timers

- The timers can be changed to achieve faster convergence times.
- Be careful with this as it can introduce instability if the timers are set too low.
- All routers in the network should have the same timer settings.
- The update timer must be lower than the other timers.

```
R2(config)#router rip
R2(config-router)#timers basic 10 90 90 120
```

Lab