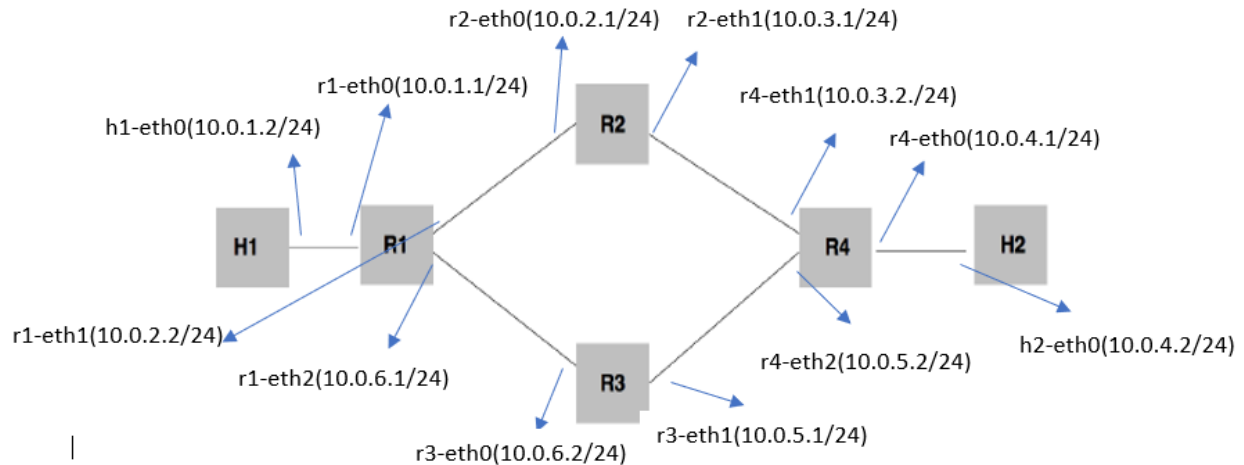


1. Made minor changes to the interface names (r1-eth1 changed to r1-eth0, ...etc.). Showing it for reference



2. Routing tables for each node

```

mininet> h1 route
Kernel IP routing table
Destination    Gateway         Genmask         Flags Metric Ref    Use Iface
default        10.0.1.1        0.0.0.0         UG    0     0       0 h1-eth0
10.0.1.0        0.0.0.0         255.255.255.0   U     0     0       0 h1-eth0
mininet>

```

```

Routing Table on Router r1:
Kernel IP routing table
Destination    Gateway         Genmask         Flags Metric Ref    Use Iface
10.0.1.0        0.0.0.0         255.255.255.0   U     0     0       0 r1-eth0
10.0.1.0        0.0.0.0         255.255.255.0   U    32     0       0 r1-eth0
10.0.2.0        0.0.0.0         255.255.255.0   U     0     0       0 r1-eth1
10.0.2.0        0.0.0.0         255.255.255.0   U    32     0       0 r1-eth1
10.0.3.0        10.0.2.1        255.255.255.0   UG    32     0       0 r1-eth1
10.0.4.0        10.0.2.1        255.255.255.0   UG    32     0       0 r1-eth1
10.0.5.0        10.0.6.2        255.255.255.0   UG    32     0       0 r1-eth2
10.0.6.0        0.0.0.0         255.255.255.0   U     0     0       0 r1-eth2
10.0.6.0        0.0.0.0         255.255.255.0   U    32     0       0 r1-eth2

```

Routing Table on Router r2:

Kernel IP routing table

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
10.0.1.0	10.0.2.2	255.255.255.0	UG	32	0	0	r2-eth0
10.0.2.0	0.0.0.0	255.255.255.0	U	0	0	0	r2-eth0
10.0.2.0	0.0.0.0	255.255.255.0	U	32	0	0	r2-eth0
10.0.3.0	0.0.0.0	255.255.255.0	U	0	0	0	r2-eth1
10.0.3.0	0.0.0.0	255.255.255.0	U	32	0	0	r2-eth1
10.0.4.0	10.0.3.2	255.255.255.0	UG	32	0	0	r2-eth1
10.0.5.0	10.0.3.2	255.255.255.0	UG	32	0	0	r2-eth1
10.0.6.0	10.0.2.2	255.255.255.0	UG	32	0	0	r2-eth0

Routing Table on Router r3:

Kernel IP routing table

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
10.0.1.0	10.0.6.1	255.255.255.0	UG	32	0	0	r3-eth0
10.0.2.0	10.0.6.1	255.255.255.0	UG	32	0	0	r3-eth0
10.0.3.0	10.0.5.2	255.255.255.0	UG	32	0	0	r3-eth1
10.0.4.0	10.0.5.2	255.255.255.0	UG	32	0	0	r3-eth1
10.0.5.0	0.0.0.0	255.255.255.0	U	0	0	0	r3-eth1
10.0.5.0	0.0.0.0	255.255.255.0	U	32	0	0	r3-eth1
10.0.6.0	0.0.0.0	255.255.255.0	U	0	0	0	r3-eth0
10.0.6.0	0.0.0.0	255.255.255.0	U	32	0	0	r3-eth0

Routing Table on Router r4:

Kernel IP routing table

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
10.0.2.0	10.0.3.1	255.255.255.0	UG	32	0	0	r4-eth1
10.0.3.0	0.0.0.0	255.255.255.0	U	0	0	0	r4-eth1
10.0.3.0	0.0.0.0	255.255.255.0	U	32	0	0	r4-eth1
10.0.4.0	0.0.0.0	255.255.255.0	U	0	0	0	r4-eth0
10.0.4.0	0.0.0.0	255.255.255.0	U	32	0	0	r4-eth0
10.0.5.0	0.0.0.0	255.255.255.0	U	0	0	0	r4-eth2
10.0.5.0	0.0.0.0	255.255.255.0	U	32	0	0	r4-eth2
10.0.6.0	10.0.5.1	255.255.255.0	UG	32	0	0	r4-eth2

mininet> h2 route

Kernel IP routing table

Destination	Gateway	Genmask	Flags	Metric	Ref	Use	Iface
default	10.0.4.1	0.0.0.0	UG	0	0	0	h2-eth0
10.0.4.0	0.0.0.0	255.255.255.0	U	0	0	0	h2-eth0

mininet>

3. Trace output from h1 to h2

```
mininet> h1 traceroute h2
traceroute to 10.0.4.2 (10.0.4.2), 30 hops max, 60 byte packets
 1  10.0.1.1 (10.0.1.1)  0.043 ms  0.006 ms  0.004 ms
 2  10.0.2.1 (10.0.2.1)  0.014 ms  0.006 ms  0.005 ms
 3  10.0.3.2 (10.0.3.2)  0.014 ms  0.007 ms  0.009 ms
 4  10.0.4.2 (10.0.4.2)  0.023 ms  0.010 ms  0.008 ms
mininet>
```

We use Mininet command to down the link between r1 and r2

```
mininet> link r1 r2 down
mininet>
```

The new trace route that bird finds:

```
mininet> link r1 r2 down
mininet> h1 traceroute h2
traceroute to 10.0.4.2 (10.0.4.2), 30 hops max, 60 byte packets
 1  10.0.1.1 (10.0.1.1)  0.051 ms  0.011 ms  0.009 ms
 2  10.0.6.2 (10.0.6.2)  0.025 ms  0.024 ms  0.014 ms
 3  10.0.5.2 (10.0.5.2)  0.027 ms  0.016 ms  0.015 ms
 4  10.0.4.2 (10.0.4.2)  0.028 ms  0.021 ms  0.019 ms
mininet>
```