This is what the initial topology looks like without any configuration. The interfaces are shutdown

192.168.10.0/24

Gig0/0

Gig0/0

2911
R0

2911
R2

Gig0/1

Gig0/1

192.168.15.0/24

192.168.11.0/24

Gig0/0

Gig0/1

Gig0/1

Gig0/0

2911
R1

192.168.12.0/24

2911
R3
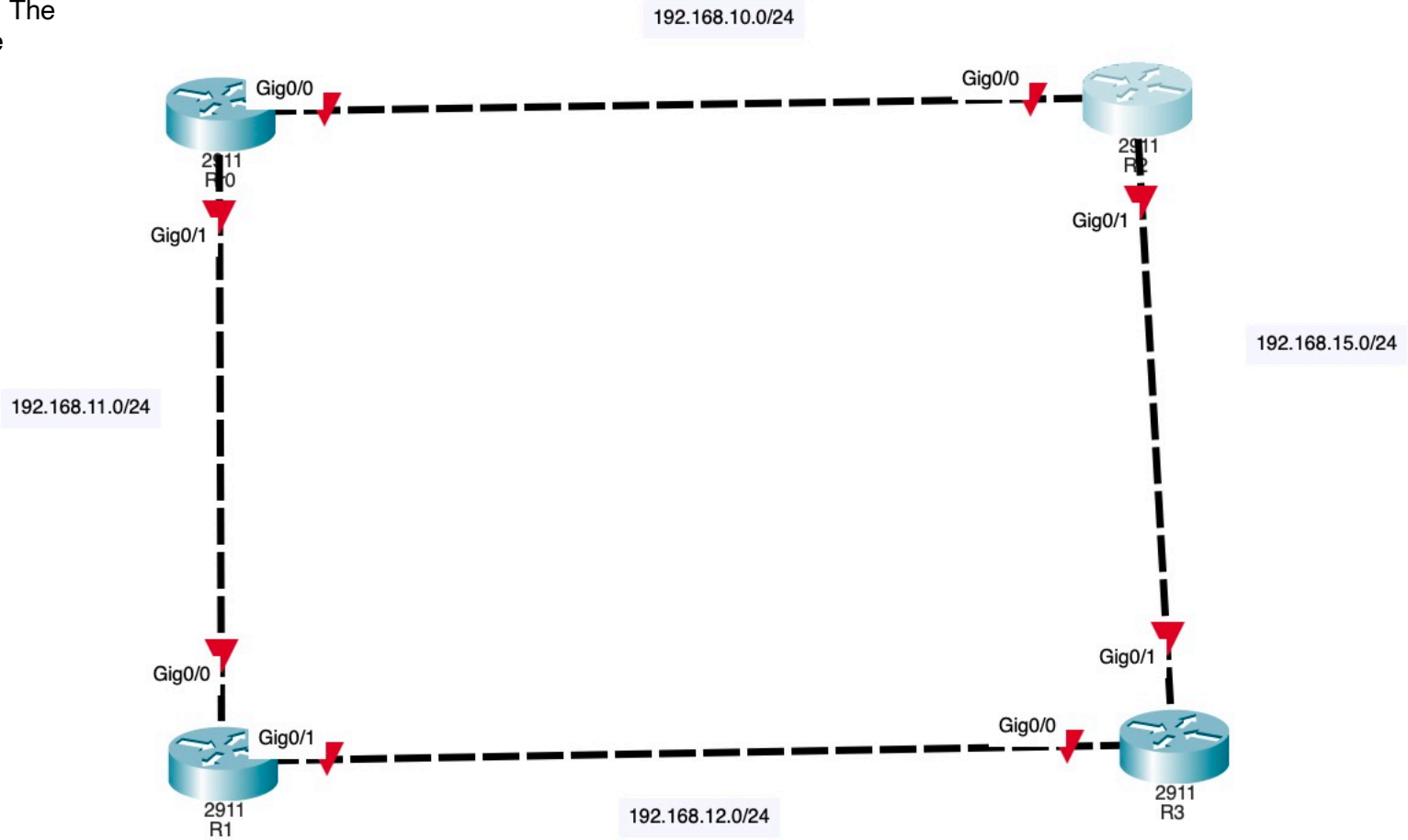
After configuring ip
addresses on the routers
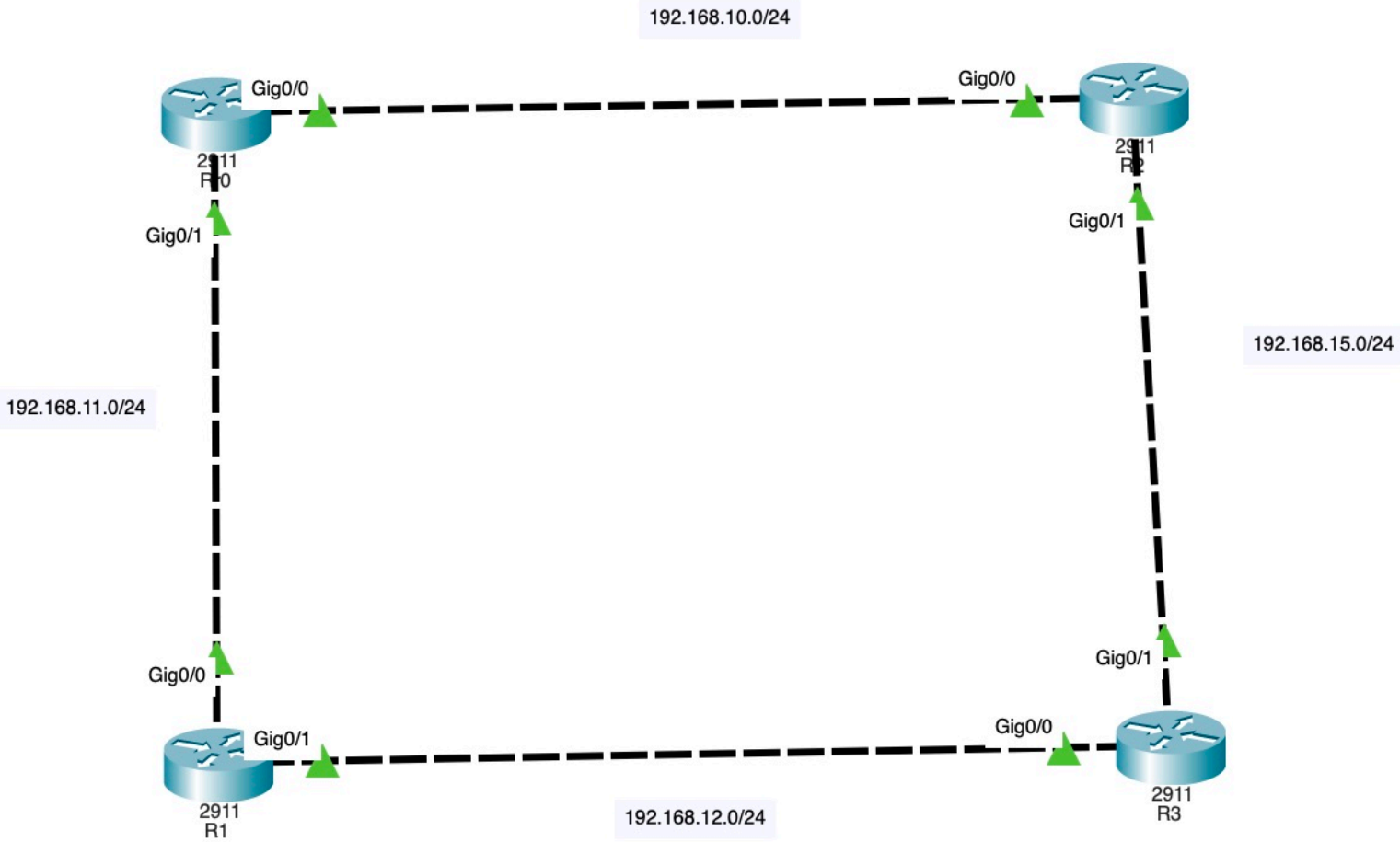
192.168.10.0/24

Gig0/0

Gig0/0

2911
R0

2911
R2

Gig0/1

Gig0/1

192.168.15.0/24

192.168.11.0/24

Gig0/0

Gig0/1

Gig0/1

Gig0/0

2911
R1

Gig0/1

2911
R3

192.168.12.0/24

```
Router>en
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface g0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

Router(config-if)#exit
Router(config)#interface g0/1
Router(config-if)#ip address 192.168.11.1 255.255.255.0
Router(config-if)#no shutdown

Router(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed
state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed
state to up
```
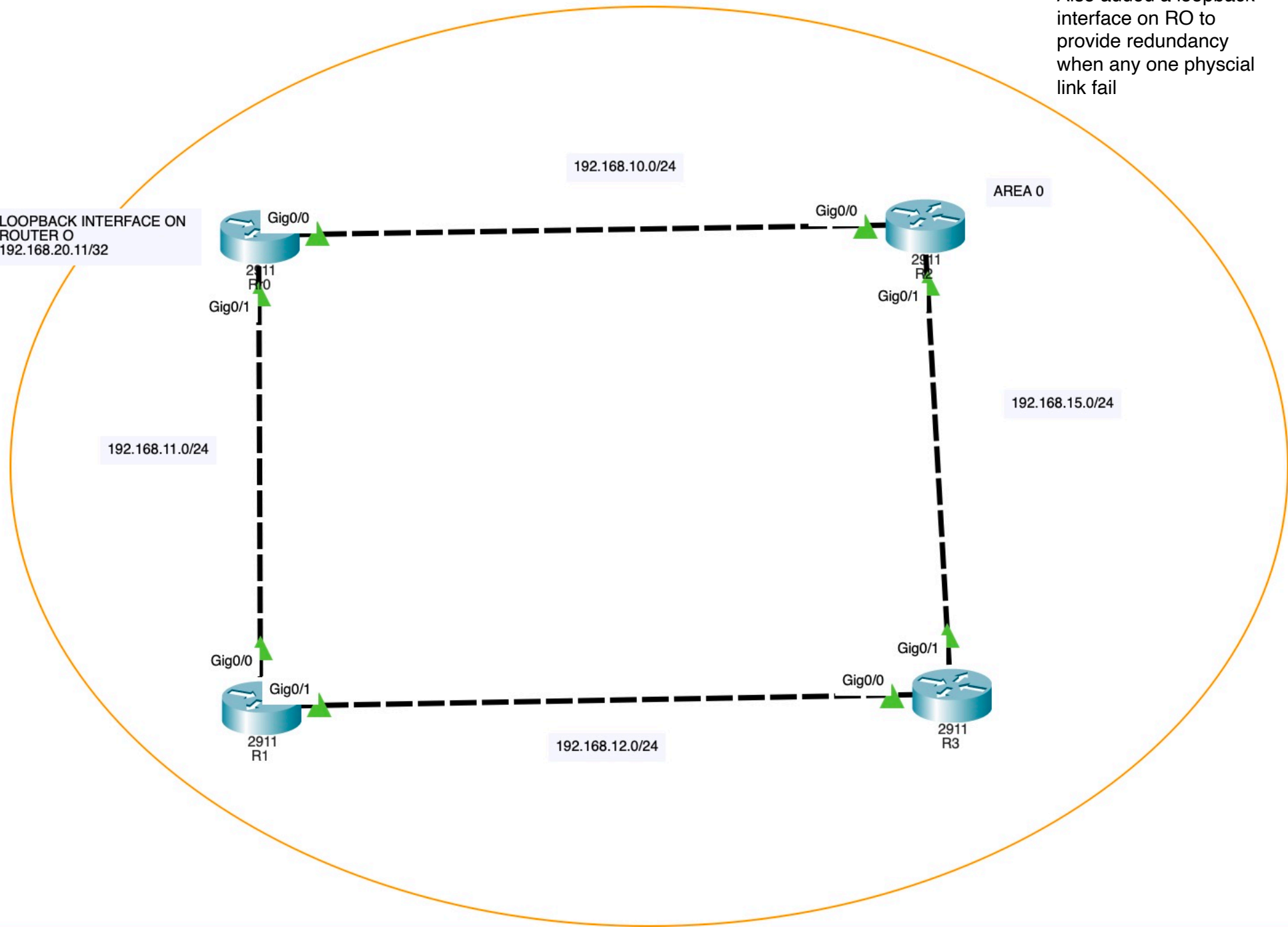
Also added a loopback
interface on RO to
provide redundancy
when any one physcial
link fail

192.168.10.0/24

AREA 0

Gig0/0

Gig0/0

LOOPBACK INTERFACE ON
ROUTER O
192.168.20.11/32

2911
R0

2911
R2

Gig0/1

Gig0/1

192.168.15.0/24

192.168.11.0/24

Gig0/1

Gig0/0

Gig0/0

Gig0/1

2911
R1

2911
R3

192.168.12.0/24

Physical   Config   CLI   Attributes

IOS Command Line Interface

The commands to configure ospf on a router. The same were configured on the rest of the routers with their respective ip addresses.

```
Router>en
Router#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#router ospf 1
Router(config-router)#router-id 4.4.4.4
Router(config-router)#network 192.168.11.0 0.0.0.255 area 0
Router(config-router)#network 192.168
00:25:35: %OSPF-5-ADJCHG: Process 1, Nbr 1.1.1.1 on GigabitEthernet0/0 from
LOADING to FULLnetwork 192.168.
                                 ^
% Invalid input detected at '^' marker.

Router(config-router)#network 192.168.12.0 0.0.0.255 area 0
Router(config-router)#do show ip ospf neighb
00:26:10: %OSPF-5-ADJCHG: Process 1, Nbr 3.3.3.3 on GigabitEthernet0/1 from
LOADING to FULL, Loading Done




Neighbor ID      Pri    State           Dead Time    Address              Interface
1.1.1.1            1    FULL/DR         00:00:37     192.168.11.1
GigabitEthernet0/0
3.3.3.3            1    FULL/DR         00:00:32     192.168.12.1
GigabitEthernet0/1
Router(config-router)#
```

Copy   Paste

```
Router(config)#ip interface gig0/1
                    ^
% Invalid input detected at '^' marker.

Router(config)#interface gig0/1
Router(config-if)#ip address 192.168.15.2 255.255.255.0    Initially R2 was the DR
Router(config-if)#no shutdown                               but later configured
Router(config-if)#                                         R3's priority as the
00:35:11: %OSPF-5-ADJCHG: Process 1, Nbr 2.2.2.2 on GigabitEthernet0/1 from
LOADING to FULL, Loading Done

Router(config-if)#do show ip ospf neighbor


Neighbor ID      Pri    State          Dead Time    Address          Interface
2.2.2.2            1    FULL/DR        00:00:30     192.168.15.1
GigabitEthernet0/1
4.4.4.4            1    FULL/BDR       00:00:37     192.168.12.2
GigabitEthernet0/0
Router(config-if)#exit
Router(config)#interface gig0/1
Router(config-if)#ip ospf priority 255
Router(config-if)#exit
Router(config)#exit
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#clear ip ospf process
Reset ALL OSPF processes? [no]: yes

Router#
00:41:35: %OSPF-5-ADJCHG: Process 1, Nbr 2.2.2.2 on GigabitEthernet0/1 from FULL
to DOWN, Neighbor Down: Adjacency forced to reset

00:41:35: %OSPF-5-ADJCHG: Process 1, Nbr 2.2.2.2 on GigabitEthernet0/1 from FULL
```

The annotation text reads: "Initially R2 was the DR but later configured R3's priority as the highest making it the DR"

R1

IOS Command Line Interface

```
Router#clear ip ospf process
Reset ALL OSPF processes? [no]: yes

Router#
00:48:14: %OSPF-5-ADJCHG: Process 1, Nbr 1.1.1.1 on GigabitEthernet0/0 from FULL
to DOWN, Neighbor Down: Adjacency forced to reset

00:48:14: %OSPF-5-ADJCHG: Process 1, Nbr 1.1.1.1 on GigabitEthernet0/0 from FULL
to DOWN, Neighbor Down: Interface down or detached

00:48:14: %OSPF-5-ADJCHG: Process 1, Nbr 3.3.3.3 on GigabitEthernet0/1 from FULL
to DOWN, Neighbor Down: Adjacency forced to reset

00:48:14: %OSPF-5-ADJCHG: Process 1, Nbr 3.3.3.3 on GigabitEthernet0/1 from FULL
to DOWN, Neighbor Down: Interface down or detached

00:48:21: %OSPF-5-ADJCHG: Process 1, Nbr 3.3.3.3 on GigabitEthernet0/1 from
LOADING to FULL, Loading Done

00:48:24: %OSPF-5-ADJCHG: Process 1, Nbr 1.1.1.1 on GigabitEthernet0/0 from
LOADING to FULL, Loading Done


Router#show ip ospf neighbor


Neighbor ID      Pri    State          Dead Time   Address          Interface
1.1.1.1            0    FULL/DROTHER   00:00:31    192.168.11.1
GigabitEthernet0/0
3.3.3.3            1    FULL/DR        00:00:37    192.168.12.1
GigabitEthernet0/1
Router#
00:51:30: %OSPF-5-ADJCHG: Process 1, Nbr 1.1.1.1 on GigabitEthernet0/0 from
LOADING to FULL, Loading Done
```

Can also confirm from R1 that R3 is the DR

Copy   Paste

Top