

Factory Reset

```
R# sh run          Check: hostname, interface, ip, duplex
R# write erase      [confirm] ↑
R# reload          Continue with configuration dialog?: no
Check results:     # sh run and # show start
```

Configuration

```
R# config t
R(config)# hostname [name]
R(config)# interface GigabitEthernet[0/0]
R(config-if)# ip address [IP] [mask]
R(config-if)# duplex auto
R(config-if)# speed auto
R(config-if)# no shutdown
R(config-if)#line con 0
R(config-line)# exec-timeout 30 0
R(config-line)#end
R# copy run start
```

```
R# sh ip route
R# show run | section interface
```

Disable interface FastEthernet 0/0

```
R(config)# interface fastEthernet 0/0
R(config-if)# shutdown
```

Configure IP addresses on Router

```
R#config t
R(config)# int f0/0
R(config-if)# ip address [IP] [mask]
R(config-if)# no shut
```

Verify routes have been added

```
R# show ip route
```

Verify the traffic path from PC to PC:

```
C:\>ping [IP] and C:\>tr acert [IP]
```

Switch ports are not shutdown by default.

Static Routes

```
R# config t
R(config)# ip route [Destination IP subnet] [Destination IP subnet
mask] [next-hop IP]
```

Verify connectivity by ping

Verify the traffic path from PC to PC:

```
C:\>ping [IP] and C:\>tr acert [IP]
```

Remove static routes

```
R# config t
R(config)# no ip route [Dest IP subnet] [Dest IP subnet mask] [next-
hop IP]
```

Summary Routes

```
R# config t
R(config)# ip route [IP subnet] [mask subnet] [next hop IP]
R(config)# end
R# sh ip route
```

Verify connectivity by ping

Default Route and Load Balancing

```
R# config t
R(config)# int f0/0
R(config-if)# ip add [IP] [mask]
R(config-if)# no shut
```

Ensure that each router has a route out to the internet

```
R(config)# ip route 0.0.0.0 0.0.0.0 [next hop IP]
```

Routing Protocol

Basic RIPv1 configuration + Enable RIPv2

```
R(config)# router rip
R(config-router)# version 2
R(config-router)# no auto-summary
R(config-router)# network [ip subnet]
```

```
R# show ip route      Check that RIP routes have been
                      added
```

```
R#sh ip rip database  View the RIP database
```

Inject the default static route

Routing Protocol (cont)

R(config)# router rip

R(config-router)# default-information originate

Debug the routing protocol updates

R# debug ip rip

R# undebug all *Turn off all debugging*

Basic EIGRP configuration

R(config)# router eigrp 100 // R(config-router)# network [IP subnet]

R(config-router)# no auto-summary

R(config-router)# network [IP] [mask]

R(config)# no router eigrp 100 *remove/ disable EIGRP*

R# sh ip eigrp neighbors

Loopback configuration

R(config)#interface loopback0

Adjacencies and Passive Interfaces

R# show ip eigrp neighbors *Verify that R"x" has established EIGRP adjacencies with R"y"*

R(config-if)# router eigrp 100 *Configure the loopback interface and the link as passive interfaces*

R(config-router)# passive-interface loopback0

R(config-router)# passive-interface fastethernet1/1

Basic OSPF configuration

R(config)# router ospf 1

R(config-router)# network [IP subnet] [wildcard mask] area 0 *Ex: network 10.0.0.0 0.255.255.255 area 0*

OSPF Verification

R# sh run | section ospf *show run / section ospf*

R# sh ip protocols *show ip protocols*

R# show ip ospf interface brief *show ip ospf interface brief*

R# show ip ospf neighbor *show ip ospf neighbor*

Basic OSPF configuration (cont)

R# show ip ospf database *show ip ospf database*

R# show ip route *show ip route*

Remove/ Disable OSPF

R(config)# no router ospf 1

OSPF Router ID

R# sh ip int brief *Check Loopback or No Loopback*

R# show ip protocols

R(config-router)# router ospf 1 *Manually Configured*

R#(config-router)# router-id 2.2.2.2

R# clear ip ospf process

R# show ip protocols

Passive Interface Configuration

R1(config-router)# router ospf 1

R1#(config-router)# passive-interface [loopback 0] *ex2: R#(config-router)# passive-interface f2/0*

R1(config-router)# router ospf 1

R1#(config-router)# passive-interface default *set passive interface as the default*

R1#(config-router)# no passive-interface [f0/0]

Default Route Injection

R4(config)#ip route 0.0.0.0 0.0.0.0 203.0.113.2

R4(config)#router ospf 1

R4(config-router)#default-information originate

---> R1#sh ip route *Default Route Injection Verification*

OSPD Areas

R(config)# router ospf 1

R(config-router)# network [IP subnet] [wildcard mask] area 0

