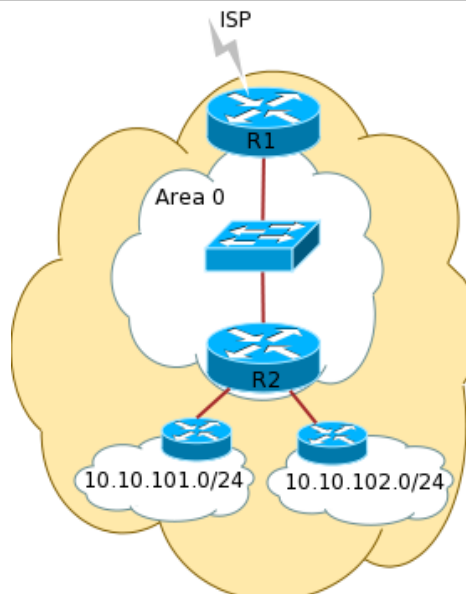# Basic OSPF Configuration Guide

Configuration Example

```
hostname R1
!
interface Loopback 0
 ip address 10.10.254.1 255.255.255.255
!
interface FastEthernet0/0
 ip address 10.10.1.1 255.255.255.0
 ! Enable OSPF on this interface
 ip ospf 100 area 0
 ! Authenticate adjacencies with MD5
 ip ospf authentication message-digest
 ! Configure secret key for MD5 authentication
 ip ospf authentication-key N$RC
!
! Start OSPF process (100 is process ID)
router ospf 100
 log adjacency-changes
 ! Allow adjacencies only on F0/0
 passive-interface default
 no passive-interface FastEthernet0/0
 ! Announce ISP link prefix and Loopback
 redistribute connected subnets
 ! Announce default route in OSPF domain
 default-information originate metric 100
!
! Default static route towards ISP
ip route 0.0.0.0 0.0.0.0 10.1.1.1
```

```
hostname R2
!
interface Loopback 0
 ip address 10.10.254.2 255.255.255.255
!
interface FastEthernet0/0
 ip address 10.10.1.2 255.255.255.0
 ip ospf 100 area 0
 ip ospf authentication message-digest
 ip ospf authentication-key N$RC
!
router ospf 100
 passive-interface default
 no passive-interface FastEthernet0/0
 ! Announce customer p2p prefixes and Loopback
 redistribute connected subnets
 ! Announce customer prefixes
 redistribute static subnets
!
! Static routes towards customers
ip route 10.10.101.0 255.255.255.0 10.10.100.2
ip route 10.10.102.0 255.255.255.0 10.10.100.6
```


Troubleshooting OSPF Adjacencies

● Can you ping the neighbour?
● Is OSPF enabled on the interface?
● If you have `passive-interface default`, do you also have `no passive-interface` for that interface?
● Do the netmask, hello interval, and router dead interval match?
● Do the authentication parameters match?
● Do the routers have different OSPF router ids?

OSPF Troubleshooting Commands

Command example	Description
show ip ospf [process-id]	Show general OSPF information
show ip ospf neighbor	Shows adjacency information
show ip ospf interface [name]	Shows OSPF information specific to interfaces
show ip route [ospf]	Shows routing table, optionally with OSPF routes only
show ip ospf database	Show LSA database summary
debug ip ospf hello	Show OSPF hello events
debug ip ospf adj	Show OSPF adjacency events