



Cisco: R1, R2, R3, and R4. R2 is the **PE**. R1 is the CE. vrf name is **MPLS**

Juniper: J1, J2, J3, and J4. J2 is the **PE**. J1 is the CE vrf created inside **routing-instances MPLS**

Cisco PE1

```
!  
ip vrf MPLS  
  rd 100:1  
  route-target export 100:1  
  route-target import 100:1  
!  
interface Loopback0  
  ip address 2.2.2.2 255.255.255.0  
  ip ospf network point-to-point  
!  
interface FastEthernet0/0  
  ip vrf forwarding MPLS  
  ip address 10.10.0.2 255.255.255.252  
  duplex auto  
  speed auto  
!  
interface FastEthernet0/1  
  ip address 192.168.10.1 255.255.255.0  
  duplex auto  
  speed auto  
  mpls ip  
!  
router ospf 2 vrf MPLS  
  router-id 2.2.2.2  
  log-adjacency-changes  
  redistribute bgp 100 subnets  
  network 10.0.0.0 0.255.255.255 area 0  
!  
router ospf 1  
  mpls ldp autoconfig  
  router-id 0.0.0.2  
  log-adjacency-changes  
  network 2.2.2.2 0.0.0.0 area 0  
  network 192.168.10.0 0.0.0.255 area 0  
!  
router bgp 100  
  no bgp default ipv4-unicast  
  bgp log-neighbor-changes  
  neighbor 22.22.22.22 remote-as 100  
  neighbor 22.22.22.22 update-source Loopback0  
!  
  address-family vpnv4  
    neighbor 22.22.22.22 activate  
    neighbor 22.22.22.22 send-community extended  
  exit-address-family  
!  
  address-family ipv4 vrf MPLS  
    redistribute ospf 2 vrf MPLS match internal  
    no synchronization  
  exit-address-family  
!
```

Cisco R2 (Simpler version)

```
ip vrf MPLS
rd 100:1
route-target export 100:1
route-target import 100:1
!
interface Loopback0
ip address 2.2.2.2 255.255.255.255
!
interface FastEthernet0/0
ip vrf forwarding MPLS
ip address 10.10.0.2 255.255.255.252
!
interface FastEthernet0/1
ip address 192.168.10.1 255.255.255.252
mpls ip
!
router ospf 2 vrf MPLS
log-adjacency-changes
redistribute bgp 100 subnets
network 10.10.0.0 0.0.0.3 area 0
!
router ospf 1
log-adjacency-changes
network 2.2.2.2 0.0.0.0 area 0
network 192.168.10.0 0.0.0.3 area 0
!
router bgp 100
no bgp default ipv4-unicast
bgp log-neighbor-changes
neighbor 5.5.5.5 remote-as 100
neighbor 5.5.5.5 update-source Loopback0
!
address-family vpnv4
neighbor 5.5.5.5 activate
neighbor 5.5.5.5 send-community extended
exit-address-family
!
address-family ipv4 vrf MPLS
redistribute ospf 2 vrf MPLS match internal
no synchronization
exit-address-family
!
```

Juniper PE2

```
interfaces {
  em0 {
    unit 0 {
      family inet {
        address 10.20.0.2/30;
      }
    }
  }
  em1 {
    unit 0 {
      family inet {
        address 192.168.50.2/24;
      }
      family mpls;
    }
  }
  lo0 {
    unit 0 {
      family inet {
        address 22.22.22.22/29;
      }
    }
  }
}
routing-options {
  router-id 22.22.22.22;
  autonomous-system 100;
}
```

```
protocols {
  mpls {
    interface em1.0;
    interface lo0.0;
  }
  bgp {
    group PE {
      type internal;
      local-address 22.22.22.22;
      family inet-vpn {
        any;
      }
      neighbor 2.2.2.2;
    }
  }
  ospf {
    area 0.0.0.0 {
      interface em1.0;
      interface lo0.0;
    }
  }
  ldp {
    interface em1.0;
  }
}
policy-options {
  policy-statement
  ACCEPT_ALL_FROM_BGP_MPLS {
    from protocol bgp;
  }
}
```

```

    then accept;
}
policy-statement
ACCEPT_ALL_FROM_OSPF_MPLS {
    from protocol ospf;
    then accept;
}
policy-statement MPLS_IN {
    term MPLS {
        from community MPLS;
        then accept;
    }
}
policy-statement MPLS_OUT {
    term ACCEPT {
        then {
            community add MPLS;
            accept;
        }
    }
}
community MPLS members target:100:1;
}
routing-instances {
    MPLS {
        instance-type vrf;
        interface em0.0;
        route-distinguisher 100:1;
        vrf-import MPLS_IN;

```

```

vrf-export MPLS_OUT;
vrf-target target:100:1;
vrf-table-label;
routing-options {
    router-id 22.22.22.22;
}
protocols {
    bgp {
        export
ACCEPT_ALL_FROM_OSPF_MPLS;
    }
    ospf {
        export
ACCEPT_ALL_FROM_BGP_MPLS;
        area 0.0.0.0 {
            interface em0.0;
        }
    }
}
}
}

```

Juniper J2 (simpler version)

```
set routing-options router-id 5.5.5.5
set routing-options autonomous-system 100
set protocols mpls interface em1.0
set protocols mpls interface lo0.0
set protocols bgp group PE type internal
set protocols bgp group PE local-address 5.5.5.5
set protocols bgp group PE family inet-vpn any
set protocols bgp group PE neighbor 2.2.2.2
```

```
set policy-options policy-statement ACCEPT_ALL_FROM_BGP_MPLS from protocol bgp
set policy-options policy-statement ACCEPT_ALL_FROM_BGP_MPLS then accept
set policy-options policy-statement ACCEPT_ALL_FROM_OSPF_MPLS from protocol ospf
set policy-options policy-statement ACCEPT_ALL_FROM_OSPF_MPLS then accept
set policy-options policy-statement MPLS_IN term MPLS from community MPLS
set policy-options policy-statement MPLS_IN term MPLS then accept
set policy-options policy-statement MPLS_OUT term ACCEPT then community add MPLS
set policy-options policy-statement MPLS_OUT term ACCEPT then accept
set policy-options community MPLS members target:100:1
```

```
set routing-instances MPLS instance-type vrf
set routing-instances MPLS interface em0.0
set routing-instances MPLS route-distinguisher 100:1
set routing-instances MPLS vrf-import MPLS_IN
set routing-instances MPLS vrf-export MPLS_OUT
set routing-instances MPLS vrf-target target:100:1
set routing-instances MPLS vrf-table-label
set routing-instances MPLS routing-options router-id 5.5.5.5
set routing-instances MPLS protocols bgp export ACCEPT_ALL_FROM_OSPF_MPLS
set routing-instances MPLS protocols ospf
export ACCEPT_ALL_FROM_BGP_MPLS
set routing-instances MPLS protocols ospf area
0.0.0.0 interface em0.0
```