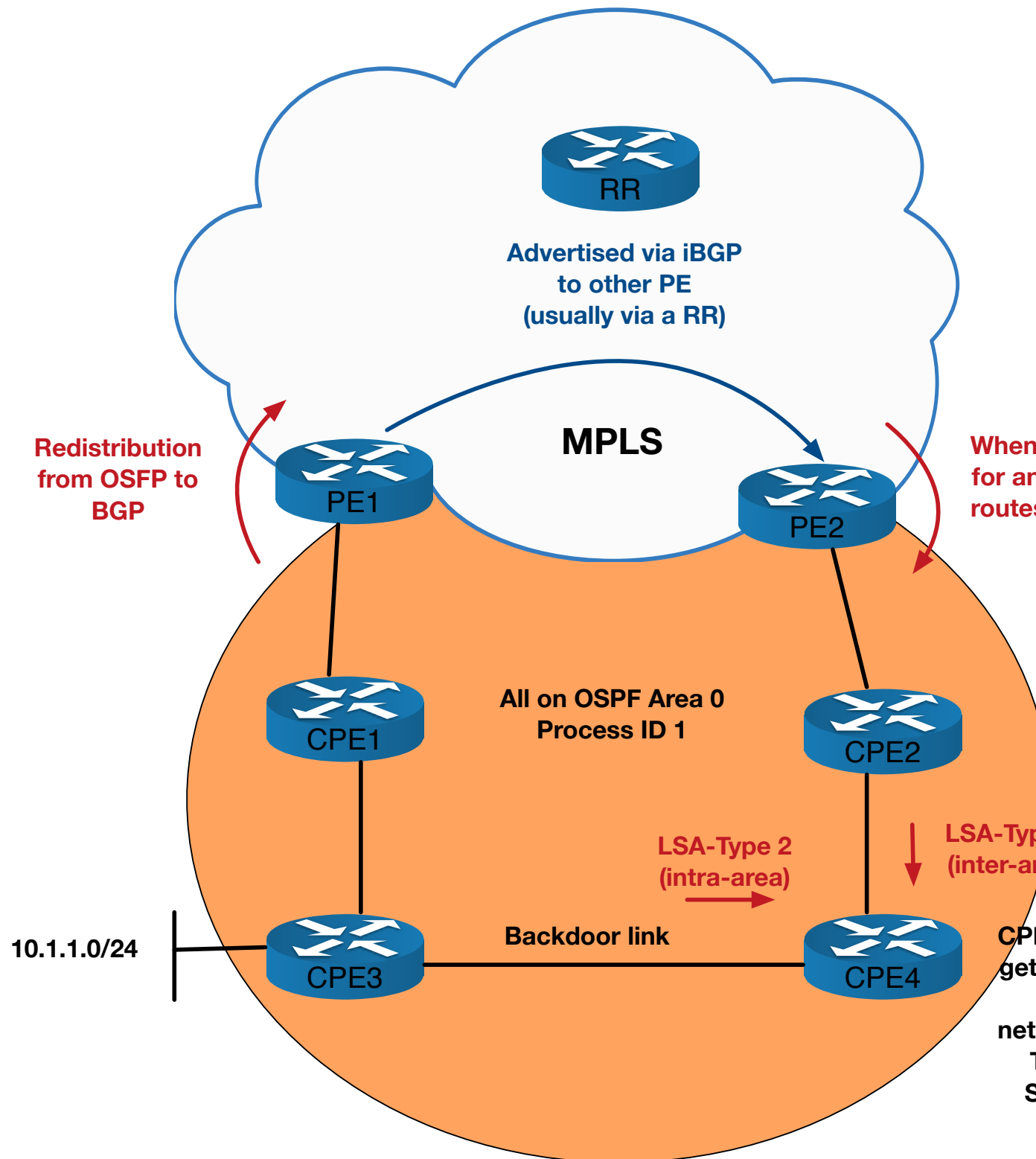




# OSPF Sham Links

This diagram shows a scenario whereby a sham link may be required



When OSPF is used as the PE-CE routing protocol for an L3VPN MPLS solution, BGP will redistribute routes back into OSPF as type 3 LSAs (rather than the type 5 LSAs)\*

\*unless the Domain ID extended community in the vpnv4 route does not match the OSPF process ID, in which case it will be advertised as a type 5 LSA

CPE4 will prefer the LSA Type 2 to get to 10.1.1.0/24, since it is intra-area. This means the MPLS network is only used as a backup. This is could be undesirable. Sham links resolve this issue.



```

loopback 0
 ip vrf forwarding CUST_ONE
 ip address 1.1.1.1 255.255.255.255
!
router ospf 1 vrf CUST_ONE
 router-id 10.10.10.10
 log-adjacency-changes
 area 0 sham-link 1.1.1.1 2.2.2.2 cost 10
 redistribute bgp 500 metric 10 subnets
 network 192.168.1.0 0.0.0.3 area 0

```

```

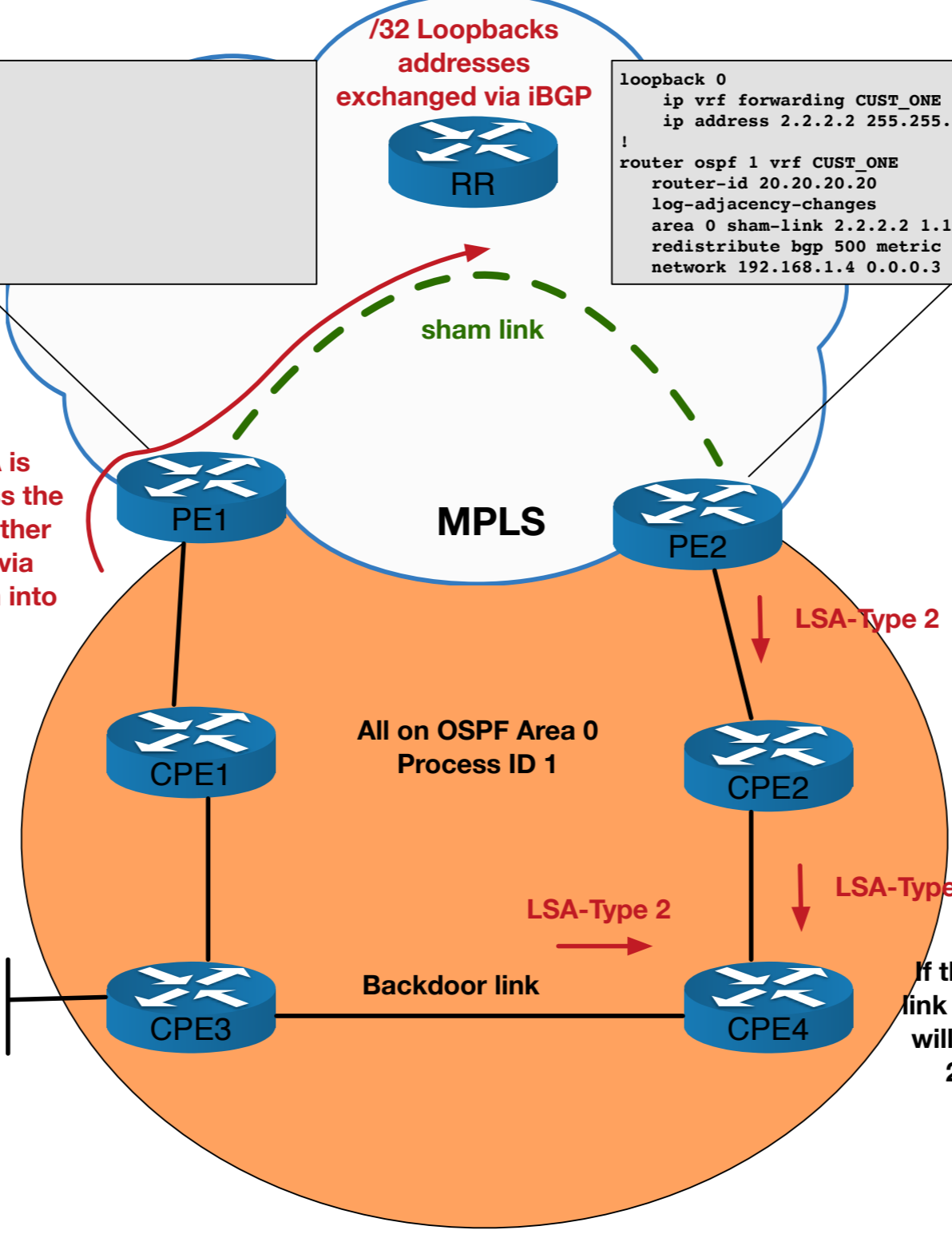
loopback 0
 ip vrf forwarding CUST_ONE
 ip address 2.2.2.2 255.255.255.255
!
router ospf 1 vrf CUST_ONE
 router-id 20.20.20.20
 log-adjacency-changes
 area 0 sham-link 2.2.2.2 1.1.1.1 cost 10
 redistribute bgp 500 metric 10 subnets
 network 192.168.1.4 0.0.0.3 area 0

```

**/32 Loopbacks  
addresses  
exchanged via iBGP**



**Type-2 LSA is  
flooded across the  
sham link, rather  
than going via  
redistribution into  
BGP**



## OSPF Sham Links

This diagram shows the setup of the sham link

If the cost on the sham link is set correctly CPE4 will prefer the LSA Type 2 via PE2 to get to 10.1.1.0/24