Configuring and Verifying the OSPF

There are a few simple commands that are used to configure and troubleshoot a Cisco router configured to use OSPF in a single area and in a multiple area network. The commands used to configure OSPF are:

. router ospf < process_number > where process_number is a number local to the router. This command configures OSPF as the routing protocol on the router.

. network network_number wildcard_mask defines the networks that are to participate in the OSPF updates and the area that they reside in.. interface loopback < interface_number > ip address < ip_address > < subnet_mask > defines a loopback interface, which is a virtual interface, on the router.

. ip ospf cost < cost > sets the default cost for the router.

. auto-cost reference-bandwidth changes the OSPF cost formula.

Note: The ip ospf cost command overrides the auto-cost reference bandwidth command.

There are a number of show ip commands that can be used when troubleshooting an OSPF network. These commands are:

. show ip ospf, which provides information about the OSPF process and its details.

. show ip ospf database, which provides information about the contents of the topological database.

. show ip ospf interface, which provides information on how OSPF has been configured on each interface.

. show ip ospf neighbor, which displays all the information about the relationship that the router has with its neighbors.

. show ip protocols, which displays the IP configuration on the router, including the interfaces and the configuration of the IP routing protocols.

. show ip route [ip-address [mask] [longer-prefixes]] | [protocol [process-id]], which provides detailed information on the networks that the router is aware of and the preferred paths to those networks. It also gives the next logical hop as the next step in the path.

. debug ip ospf events, which issues log messages for each OSPF packet.

. debug ip ospf packet, which issues log messages describing the contents of all OSPF packets.