

1b. In order to eliminate potential network loops, the spanning tree protocol is in charge of recognizing the links in the network and shutting down the redundant ones. All switches in the network communicate with one another using BPDU messages to determine the root bridge. Root-ports on non-root switches that have the cheapest path to the root bridge. These ports route traffic to the root bridge. designated-ports on the root and designated switches are designated. The root bridge's ports will all be designated.

Blocked - All other bridge or switch ports are in a blocked state. Access ports that connect to workstations or PCs are unaffected.

2.

2.a

OSPF routers go through multiple state modifications before establishing a neighbor relationship.

- ① Down state - the interface has not received any hellos. This is the initial state of all OSPF routers.
- ② Attempt state - neighbors must be configured manually. Only nonbroadcast multi-access networks employ this state.
- ③ Init state - A router has received a Hello message from another OSPF router but the two-way dialogue has yet to begin.
- ④ Two-way state - the neighbor receives the Hello message and responds with their own Hello message.