

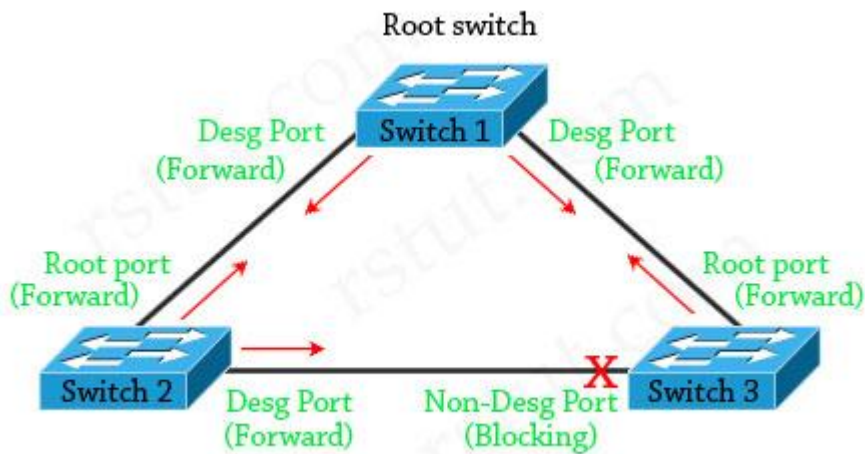
loop-inconsistent state (loop guard port)

Loop Guard protects a switch trunk port from causing loops. It prevents switch ports from wrongly moving from a blocking to a forwarding state when a unidirectional link exists in the network.

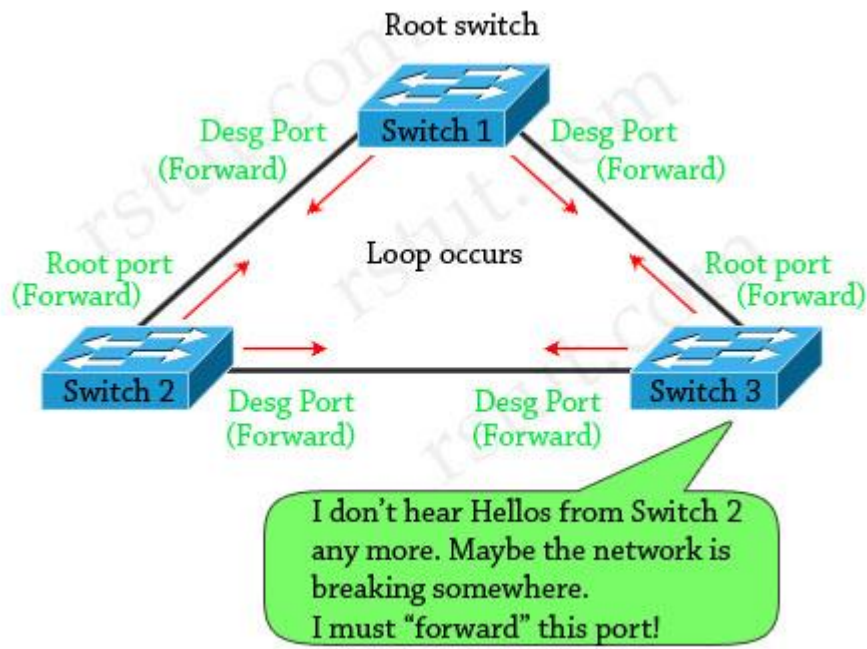
Unidirectional links are simply links for which one of the two transmission paths on the link has failed, but not both. This can happen as a result of miscabling, cutting one fiber cable, unplugging one fiber or other reasons.

Let's consider an example.

The network consists of 3 switches without Loop Guard feature. Switch 1 is the root switch. A port on Switch 3 is in blocking state, other ports are forwarding normally.



Suppose that Switch 3 does not receive BPDUs (Hellos) from Switch 2 due to unidirectional link failure on the link between switch 2 and switch 3. Switch 3 then transitions to forwarding state, and now all trunks on all switches are forwarding. Well, we have a loop!



With Loop Guard feature turned on, the blocking port on switch 3 will not transition to forwarding state but will fall into an STP loop-inconsistent state (same as blocking state).