

## Spanning Tree Port Roles:

### Root Port:

- o For non-root switch, port that connects this switch to the root switch.
- o The Root port is the port that directly connects to the Root Bridge
- o The Root Port is the port which has least cost to reach root switch.
- o The Root port is the port that is closest to the root bridge or root switch.
- o Every non-root bridge must have a root port connect to root switch.
- o Only one Root Port on non-root Switch and no Root Port in root bridge.
- o A Root Port has the least cost from the "Switch" to the Root Bridge.
- o The Root ports forward traffic toward the root bridge or Root switch.

### Alternate Port:

- o Alternate port is a best alternate path to the root bridge or Switch.
- o Alternative port moves to the forwarding state if any change in topology.

### Designated Port:

- o A non – root port, which is forwarding away from the root switch.
- o Designated Port has the lowest cost in that Ethernet segment.
- o Switch can have multiple designated ports & marked as forwarding port.
- o Designated Port has the lowest Path Cost on particular LAN segment.
- o In Cisco Switches a Root Port can never be a designated port.
- o For root bridges or switch, all switch ports are designated ports.

### Non-Designated Port:

- o Non-designated port having higher port cost than the designated port.
- o Spanning Tree Protocol marks non-designated port as the blocking port.
- o Non-designated port not forward any frames and used to remove loops.
- o If any change in topology, the same port may become a designated port.
- o The non-designated port of is a Cisco switch port that is blocked.
- o A non-designated port of switch is not a root port or a designated port.

Interface	Role	Sts	Cost	Prio.Nbr	Type
Et0/0	Desg	FWD	100	128.1	P2p
Et0/1	Root	FWD	100	128.2	P2p
Et0/2	Altn	BLK	100	128.3	P2p
Et0/3	Desg	FWD	100	128.4	P2p

