RSTP Configuration Report

# Introduction

This document provides an overview of the Rapid Spanning Tree Protocol (RSTP) configuration performed in the given topology. The configuration focused on identifying and configuring link types, determining port states, and enabling STP PortFast where applicable.

# Identifying and Configuring Link Type

In RSTP, link types are used to optimize convergence:  
- Point-to-Point: Full-duplex links between switches.  
- Shared: Half-duplex links, usually when using hubs.  
  
In this topology, the links between switches were identified as Point-to-Point, while the connections through hubs (Hub0 and Hub1) were identified as Shared links. These were configured accordingly to ensure correct RSTP operation.

# Identifying Port States

During RSTP operation, each port transitions to one of the following states:  
- Root (R)  
- Designated (D)  
- Alternate (A)  
  
After running RSTP, the topology showed the following port roles:  
- Root ports were selected towards the Root Bridge.  
- Designated ports forwarded traffic towards downstream devices.  
- Alternate ports were placed in a backup role to prevent loops.

# Configuring STP PortFast

STP PortFast was enabled on ports connected to end devices such as PCs (PC1, PC2, PC3, PC4, PC5, and PC6). This ensures that these ports transition immediately to the forwarding state, bypassing the listening and learning states, thus providing immediate connectivity to end hosts. PortFast should only be used on edge ports connected to end devices and not on switch-to-switch links.

# Conclusion

The RSTP configuration was successfully implemented. Link types were identified and configured, port states were verified, and PortFast was enabled on appropriate ports. This setup provides fast convergence, loop prevention, and reliable connectivity for the network.