Part I – Network Topologies Design & Simulation

This section focuses on the design, simulation, and configuration of various network topologies   
including Bus, Mesh, Star, Ring, and Extended Star, integrated into a hybrid topology.   
Each topology was configured using IPv4 and IPv6 addressing, VLAN segmentation,   
and a DHCP-configured firewall for dynamic addressing.   
Additionally, an HTTP/DNS/DHCP server was incorporated for enhanced network functionality.

# Hybrid Network Overview

The hybrid topology integrates all five topologies (Bus, Mesh, Star, Ring, Extended Star) interconnected   
through a mesh of six switches linked to a Cisco ASA 5506-X firewall. VLANs are used to segment traffic between faculties, students, staff, guests, and management.   
Dual-stack addressing (IPv4/IPv6) ensures forward compatibility and efficient routing.