# Part 1: Hybrid Network Topology Configuration Report

This report outlines the detailed configuration and IP addressing plan for the Hybrid Network Topology that incorporates both IPv4 and IPv6 addressing schemes, VLAN segmentation, and server configurations (HTTP and DHCP). This hybrid setup ensures compatibility between modern IPv6 networks and legacy IPv4 systems.

## 1. Network Overview

The hybrid topology consists of interconnected routers, switches, and hosts designed to support dual-stack (IPv4 and IPv6) communication. VLANs are configured for segmentation to improve security and manageability.

## 2. IPv4 Addressing Plan

Network Address: 192.168.1.0/24  
Subnet Allocation: 192.168.1.1 – 192.168.1.35  
Default Gateway: 192.168.1.1  
DHCP Range: 192.168.1.10 – 192.168.1.35  
DNS Server: 192.168.1.2  
HTTP Server: 192.168.1.3

## 3. IPv6 Addressing Plan

IPv6 Network: 2001:db8:3C4D::/64  
Address Range: 2001:db8:3C4D::1 – 2001:db8:3C4D::12  
Default Gateway: 2001:db8:3C4D::1  
Link-local: FE80::2  
HTTP Server: 2001:db8:3C4D::3

## 4. VLAN Configuration

- VLAN 10: Administration  
- VLAN 20: Faculty  
- VLAN 30: Students  
- VLAN 50: Staff

- VLAN 99: Management & Native   
Each VLAN is assigned its own subnet and configured to allow inter-VLAN routing through the router’s subinterfaces.

## 5. Security Configurations

- Access Control Lists (ACLs) implemented on routers to restrict access between VLANs.  
- Port Security enabled on switches to limit MAC address registration.  
- Password protection configured for privileged EXEC mode.

## 6. Summary

This hybrid configuration allows seamless communication between IPv4 and IPv6 hosts within segmented VLAN environments while maintaining security and scalability for future expansion.