



University Of Engineering
& Technology Peshawar

CCN PROJECT REPORT

Presented By:

Mohsin Sajjad : 22pwcse2149

Muhammad Hassan : 22pwcse2105

Muhammad Afnan khan : 22pwcse2155

Presented To:

DR. Yasir Afridi

Bank Network Design Project Report

1. Project Title

Design and Implementation of a Bank Network Using Cisco Packet Tracer

2. Objective

To design and implement a secure, scalable, and efficient computer network for a bank with a head office in Peshawar and five remote branches, ensuring safe inter-branch communication, centralized management, and service availability.

3. Network Overview

The bank network consists of:

- 1 Main Branch (Head Office in Peshawar)
- 5 Regional Branches
- All branches are interconnected securely using routers.
- The Head Office contains centralized servers (Database, DNS, Web, Backup).
- DMZ (Demilitarized Zone) is implemented for public web services (e.g., online banking).
- Inter-branch communication is secured using dynamic routing protocols.

4. Network Design Components

Devices Used:

- Routers (Cisco 2901) for each branch
- Switches for internal LAN segmentation
- End Devices: PCs, Servers, Printers
- Cable Types: Copper straight-through, serial for WAN

Addressing Scheme:

Branch	IP Address	Subnet Mask
Peshawar	Router5 – 170.20.104.0/21	255.255.248.0
	Router6– 170.20.96.0/21	255.255.248.0
	Router 7– 170.20.88.0/21	255.255.248.0
Panyala	Router3 – 172.20.120.0/21	255.255.248.0
Mansehra	Router14 – 172.20.32.0/21	255.255.248.0
Swabi	Router17– 172.20.48.0/21	255.255.248.0
Karak	Router4 – 172.20.152.0/21	255.255.248.0
Di khan	Router13 – 172.20.16.0/21	255.255.248.0

5. Security Implementation

- DMZ at Main Branch for hosting public-facing servers (web, DNS).
- Static Routing / RIP / EIGRP used to establish connectivity.

Routing:

- Dynamic Routing (RIP or EIGRP)
- Static routes for control where necessary.

8. Testing & Verification

Test Cases and Results:

- Ping from Branch to Main Server: ✓Successful
- DNS resolution from branches: ✓Working
- Web access to internal site: ✓Working

10. Conclusion

This project successfully demonstrates a secure and organized bank network using Cisco Packet Tracer. The design ensures:

- Secure communication between branches
- Scalability for future expansion

Branches Screen shots:

Peshawar (Main Branch)

