# Network Documentation Report

This report documents the network design for an enterprise with three departments (HR, IT, Finance), including topology, IP addressing, routing, QoS settings, and testing results.

## 1. Network Topology Diagram

[Router0]

(Fa0/0: 192.168.100.1/29)

|

| (Link: 192.168.100.0/29 via EIGRP 100)

|

(Fa0/1: 192.168.100.2/29)

[Router1] (Connects to Finance)

| (Fa0/0: 192.168.10.1/29 - Gateway for Finance VLAN 30)

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| (Router0 Fa0/1: 192.168.1.9/29)| (Router0 Fa1/0: 192.168.1.17/29) |

| (Gateway for IT VLAN 20) | (Gateway for HR VLAN 10) |

| | |

[Switch\_IT]------------------------ [Switch\_HR]------------------- [Switch\_Finance]

(VLAN 20: 192.168.1.8/29) (VLAN 10: 192.168.1.16/29) (VLAN 30: 192.168.10.0/29)

| | | IP Phone\_IT (192.168.1.10) | | | IP Phone\_HR (192.168.1.18) | | | IP Phone\_Fin (192.168.10.2)

PC-PTs (e.g., 192.168.1.11) PC-PTs (e.g., 192.168.1.19) PC-PTs (192.168.10.3, .4, .5)

## A diagram of a computer network AI-generated content may be incorrect. IP Addressing Table

The IP addressing scheme aligns with the provided subnets and routing table.

|  |  |  |  |
| --- | --- | --- | --- |
| Device Interface | IP Address | Subnet Mask | Default Gateway |
| Main Router Fa0/0.10 | 192.168.10.1 | 255.255.255.0 | - |
| Main Router Fa0/0.20 (IT) | 192.168.2.1 | 255.255.255.0 | - |
| Main Router Fa1/0.30 (Fin) | 192.168.3.1 | 255.255.255.0 | - |
| Main Router Fa0/0 (Mgmt1) | 192.168.1.1 | 255.255.255.248 | - |
| Main Router Fa0/1 (Mgmt2) | 192.168.1.9 | 255.255.255.248 | - |
| Main Router Fa1/0 (Mgmt3) | 192.168.1.17 | 255.255.255.248 | - |
| Switch1 (HR) VLAN 10 | 192.168.10.2 | 255.255.255.0 | 192.168.10.1 |
| Switch2 (IT) VLAN 20 | 192.168.2.2 | 255.255.255.0 | 192.168.2.1 |
| Switch3 (Fin) VLAN 30 | 192.168.3.2 | 255.255.255.0 | 192.168.3.1 |
| PC1 (HR) | 192.168.10.3 | 255.255.255.0 | 192.168.10.1 |
| PC2 (HR) | 192.168.10.4 | 255.255.255.0 | 192.168.10.1 |
| PC3 (HR) | 192.168.10.5 | 255.255.255.0 | 192.168.10.1 |
| IP Phone0 (HR) | 192.168.10.2 | 255.255.255.0 | 192.168.10.1 |
| PC4 (IT) | 192.168.2.3 | 255.255.255.0 | 192.168.2.1 |
| PC5 (IT) | 192.168.2.4 | 255.255.255.0 | 192.168.2.1 |
| PC6 (IT) | 192.168.2.5 | 255.255.255.0 | 192.168.2.1 |
| IP Phone1 (IT) | 192.168.2.2 | 255.255.255.0 | 192.168.2.1 |
| PC7 (Fin) | 192.168.3.3 | 255.255.255.0 | 192.168.3.1 |
| PC8 (Fin) | 192.168.3.4 | 255.255.255.0 | 192.168.3.1 |
| PC9 (Fin) | 192.168.3.5 | 255.255.255.0 | 192.168.3.1 |
| IP Phone2 (Fin) | 192.168.3.2 | 255.255.255.0 | 192.168.3.1 |

**IP Phones :**

**Type: Cisco 7960 IP Phones**

**Each IP phone connects to a PC (using trunk access).**

**Basic Device Configuration:**

**enable**

**configure terminal**

**hostname (Device Name)**

**enable secret 1234**

**line console 0**

**password 1234**

**login**

**interface vlan (VLAN\_ID)**

**ip address (IP Address) (Subnet Mask)**

**no shutdown**

**3. Routing Configurations**

**Main Router Configuration**

**hostname Main-Router**

**interface FastEthernet0/0**

**no ip address**

**interface FastEthernet0/0.10**

**encapsulation dot1Q 10**

**ip address 192.168.10.1 255.255.255.0**

**no shutdown**

**interface FastEthernet0/0.20**

**encapsulation dot1Q 20**

**ip address 192.168.2.1 255.255.255.0**

**no shutdown**

**interface FastEthernet0/1**

**no ip address**

**interface FastEthernet1/0**

**no ip address**

**interface FastEthernet1/0.30**

**encapsulation dot1Q 30**

**ip address 192.168.3.1 255.255.255.0**

**no shutdown**

**interface FastEthernet0/0**

**ip address 192.168.1.1 255.255.255.248**

**no shutdown**

**interface FastEthernet0/1**

**ip address 192.168.1.9 255.255.255.248**

**no shutdown**

**interface FastEthernet1/0**

**ip address 192.168.1.17 255.255.255.248**

**no shutdown**

**Router 0 configure**

**hostname Router0**

**! (Apply basic device configuration template)**

**!**

**interface FastEthernet0/0**

**description Link to Router1**

**ip address 192.168.100.1 255.255.255.248**

**no shutdown**

**!**

**interface FastEthernet0/1**

**description Gateway for IT Department (VLAN 20)**

**ip address 192.168.1.9 255.255.255.248**

**! QoS Policy for IT department applied here (see QoS section)**

**service-policy output QoS-Right**

**no shutdown**

**!**

**interface FastEthernet1/0**

**description Gateway for HR Department (VLAN 10)**

**ip address 192.168.1.17 255.255.255.248**

**no shutdown**

**!**

**router eigrp 100**

**network 192.168.1.8 0.0.0.7 ! IT Department Subnet**

**network 192.168.1.16 0.0.0.7 ! HR Department Subnet**

**network 192.168.100.0 0.0.0.7 ! Link to Router1 Subnet**

**no auto-summary**

**Router 1 Config**

**hostname Router1**

**! (Apply basic device configuration template)**

**!**

**interface FastEthernet0/0**

**description Gateway for Finance Department (VLAN 30)**

**ip address 192.168.10.1 255.255.255.248**

**no shutdown**

**!**

**interface FastEthernet0/1**

**description Link to Router0**

**ip address 192.168.100.2 255.255.255.248**

**no shutdown**

**!**

**router eigrp 100**

**network 192.168.10.0 0.0.0.7 ! Finance Department Subnet**

**network 192.168.100.0 0.0.0.7 ! Link to Router0 Subnet**

**no auto-summary**

**!**

**Switch Configurations (Example for Switch1 - HR)**

**hostname Switch1**

**vlan 10**

**name HR**

**interface vlan 10**

**ip address 192.168.10.2 255.255.255.0**

**ip default-gateway 192.168.10.1**

**interface range FastEthernet0/2 - 4, FastEthernet0/6**

**switchport mode access**

**switchport access vlan 10**

**Testing Results**

**Example from pc3 (HR) to IT and Finance**

**25% loss**

**A screenshot of a computer program

AI-generated content may be incorrect.**

Tracerout

A computer screen shot of a black screen

AI-generated content may be incorrect.