**Hospital Management System - Network Documentation**

**Overview**

This document provides a detailed explanation of the network design for the Hospital Management System, covering various departments and their interconnected components.

**Network Components**

**1. IT Department (192.168.1.0)**

* **Router:** IT\_Router (192.168.1.1) connects the IT department to other sections of the network.
* **Switch:** IT\_Switch (192.168.1.6) manages local connections within the IT department.
* **Devices:**
  + PC (IT Reception): 192.168.1.2
  + Server (DNS + HTTP): 192.168.1.3
  + Server (SMTP + FTP): 192.168.1.4

**2. Clinical Area (192.168.2.0)**

* **Router:** Clinical\_Router (192.168.2.1) handles the Clinical Area.
* **Switch:** Clinical\_Switch (2960-24TT) connects devices within the Clinical Area.
* **Devices:**
  + PCs:
    - Ultrasound Room: 192.168.2.5
    - Operation Theater: 192.168.2.4
    - Clinical Reception: 192.168.2.2

**3. Entrance Reception (192.168.3.0)**

* **Router:** Entrance\_Router (192.168.3.1) connects the Entrance Reception to the network.
* **Switch:** Entrance\_Switch (2960-24TT) manages connections.
* **Devices:**
  + PC (Main Reception): 192.168.3.2
  + PC (Information Counter): 192.168.3.3
  + PC (Billing Counter): 192.168.3.4

**4. General Ward (192.168.4.0)**

* **Router:** General\_Ward\_Router (192.168.4.1) connects to the General Ward.
* **Switch:** General\_Ward\_Switch (2960-24TT).
* **Devices:**
  + PC (Reception): 192.168.4.2
  + PC (Dr. Arslan): 192.168.4.3

**5. Private Ward (192.168.5.0)**

* **Router:** Private\_Ward\_Router (192.168.5.1).
* **Switch:** Private\_Ward\_Switch (2960-24TT).
* **Devices:**
  + PC (Reception): 192.168.5.2
  + PC (Dr. Muneeb Awan): 192.168.5.3

**6. Lobby Area**

* **Wireless Router:** WRT300N provides wireless connectivity.
* **Devices:**
  + Smartphones (Guests): 192.168.x.x (Dynamic Allocation)
  + Tablet (Guest 1): 192.168.x.x (Dynamic Allocation)

**Interconnections**

* **Router Connections:**
  + IT\_Router connects to Clinical\_Router via Serial 2/0 (192.168.6.0).
  + Clinical\_Router connects to General\_Ward\_Router and Private\_Ward\_Router via Serial 3/0 (192.168.8.0 and 192.168.9.0, respectively).
  + Entrance\_Router connects to Clinical\_Router via Serial 3/0 (192.168.7.0).
* **Switch Connections:**
  + Each department has its own switch for local devices.
  + Switches are connected to respective routers.

**Protocols Used**

* **HTTP & DNS** for managing websites and domain resolution (192.168.1.3).
* **SMTP & FTP** for email and file transfer services (192.168.1.4).
* **Dynamic IP Allocation:** Wireless router assigns dynamic IPs for guest devices.

**Purpose**

The network ensures:

* Smooth communication between departments.
* Secure access to centralized servers for DNS, FTP, and HTTP services.
* Seamless management of wired and wireless devices.