**Full Network Configuration Documentation**

**Project: Router Setup, Security, VLAN, OSPF, and VLSM Implementation  
Prepared for: [Your Organization Name]  
Date: [Insert Date]**

**1. DHCP Configuration**

**Router 1 (R1)**

* **Exclude**: 190.60.14.1 (Default Gateway)
* **DHCP Pool**: IT\_POOL
  + Network: 190.60.14.0/28 (Subnet Mask: 255.255.255.240)
  + Default Router: 190.60.14.1
  + DNS Server: 8.8.8.8

**Router 2 (R2)**

* **Exclude**: 190.60.14.17 (Default Gateway)
* **DHCP Pool**: GUEST\_POOL
  + Network: 190.60.14.16/28 (Subnet Mask: 255.255.255.240)
  + Default Router: 190.60.14.17
  + DNS Server: 8.8.8.8

**2. Router-on-a-Stick (Inter-VLAN Routing)**

* **Subinterfaces:**
  + fa0/0.10 ➔ VLAN 10 ➔ 190.60.14.57/29
  + fa0/0.20 ➔ VLAN 20 ➔ 190.60.14.49/29
  + fa0/0.30 ➔ VLAN 30 ➔ 190.60.14.33/28
* **Physical Interface** fa0/0: Enabled (no shutdown)

**3. VLAN Configuration (Switch Side)**

| **VLAN ID** | **Name** | **Ports** |
| --- | --- | --- |
| 10 | Warehouse | fa0/2 - fa0/4 |
| 20 | HR | fa0/5 - fa0/9 |
| 30 | Admin | fa0/10 - fa0/19 |

* **Trunk Port**: fa0/1 (connection to Router, mode trunk)

**4. OSPF Routing Setup**

**Router 1 (R1)**

* **Router ID**: 1.1.1.1
* **Networks Advertised**:
  + 190.60.14.0/28
  + 190.60.14.16/28
  + 190.60.14.68/30

**Router 2 (R2)**

* **Router ID**: 2.2.2.2
* **Networks Advertised**:
  + 190.60.14.68/30
  + 190.60.14.32/28
  + 190.60.14.48/29
  + 190.60.14.72/30

**Router 3 (R3)**

* **Router ID**: 3.3.3.3
* **Networks Advertised**:
  + 190.60.14.72/30
  + 190.60.14.56/29
  + 190.60.14.64/30

**5. VLSM Summary**

| **Department** | **Network Address** | **Subnet Mask** | **Usable IP Range** | **Broadcast Address** |
| --- | --- | --- | --- | --- |
| IT | 190.60.14.0/28 | 255.255.255.240 | 190.60.14.1 – 190.60.14.14 | 190.60.14.15 |
| Guest | 190.60.14.16/28 | 255.255.255.240 | 190.60.14.17 – 190.60.14.30 | 190.60.14.31 |
| Admin | 190.60.14.32/28 | 255.255.255.240 | 190.60.14.33 – 190.60.14.46 | 190.60.14.47 |
| HR | 190.60.14.48/29 | 255.255.255.248 | 190.60.14.49 – 190.60.14.54 | 190.60.14.55 |
| Warehouse | 190.60.14.56/29 | 255.255.255.248 | 190.60.14.57 – 190.60.14.62 | 190.60.14.63 |
| Server | 190.60.14.64/30 | 255.255.255.252 | 190.60.14.65 – 190.60.14.66 | 190.60.14.67 |
| R1 ↔ R2 | 190.60.14.68/30 | 255.255.255.252 | 190.60.14.69 – 190.60.14.70 | 190.60.14.71 |
| R2 ↔ R3 | 190.60.14.72/30 | 255.255.255.252 | 190.60.14.73 – 190.60.14.74 | 190.60.14.75 |

**6. Router Access and Password Configuration**

**Console Access Configuration**

* **Access Method**: Console (physical access)
* **Password**: May
* **Commands:**
* line console 0
* password May
* login
* exit

**Remote Access (VTY Lines) Configuration**

* **Access Method**: Telnet/SSH (Virtual Terminal Lines 0-4)
* **Password**: May
* **Commands:**
* line vty 0 4
* password May
* login
* exit

**Enable Secret Password Configuration**

* **Purpose**: Secures privileged EXEC mode (enable command).
* **Password**: 2002
* **Command:**
* enable secret 2002

**Password Encryption Configuration**

* **Purpose**: Encrypts all plaintext passwords in the running configuration.
* **Command:**
* service password-encryption