A diagram of a network

AI-generated content may be incorrect.

**Complete Network Configuration Documentation**

This document describes the complete configuration for the network project. It includes basic switch configurations (VLANs, welcome messages, and trunk/access port settings) for the multilayer (core) switch, departmental access switches, and the server-side switch.

**1. Multilayer (Core) Switch – CoreSwitch**

**Purpose:**

* **Basic Setup:** Establish the identity of the core switch and display a welcome message for authorized users.
* **VLAN Creation:** Create VLANs for all departments (HR, CS, Marketing, IT, Management, Finance) as well as server resources (DHCP, Email, HTTPS).
* **Trunk Configuration:** Configure trunk ports to carry traffic for all VLANs to other switches.

**Configuration Commands:**

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

! 1. Multilayer (Core) Switch – CoreSwitch

! Purpose: Basic setup with welcome message, VLAN creation, and trunk configuration.

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

enable

configure terminal

hostname CoreSwitch

! Welcome Message: Displays a custom banner to identify the device.

banner motd #

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Welcome to the Core (Multilayer) Switch \*

\* Authorized Personnel Only! \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#

! Enable routing if inter-VLAN routing is required.

ip routing

! ----- VLAN Configuration -----

! Creating departmental VLANs and server VLANs.

vlan 10

name HR

vlan 20

name CS

vlan 30

name Marketing

vlan 40

name IT

vlan 50

name Management

vlan 60

name Finance

vlan 100

name DHCP\_Server

vlan 110

name Email\_Server

vlan 120

name HTTPS\_Server

exit

! ----- Trunk Port Configuration -----

! Configure trunk port to allow all VLANs to pass between CoreSwitch and other switches.

interface GigabitEthernet0/1

switchport mode trunk

switchport trunk allowed vlan 10,20,30,40,50,60,100,110,120

exit

! Save the configuration.

write memory

**2. HR Department Access Switch – HR\_Switch**

**Purpose:**

* **Basic Setup:** Set hostname and display a welcome message specific to the HR department.
* **VLAN Creation:** Create VLAN 10 for the HR department.
* **Access Ports:** Configure ports (FastEthernet0/1-12) for HR devices as access ports in VLAN 10.
* **Trunk Uplink:** Configure a trunk uplink port to connect to the CoreSwitch, allowing multiple VLANs.

**Configuration Commands:**

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

! 2. HR Department Access Switch – HR\_Switch

! Purpose: Basic configuration with welcome message and VLAN for HR.

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

enable

configure terminal

hostname HR\_Switch

! Welcome Message: Identify the HR switch.

banner motd #

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Welcome to the HR Department \*

\* Access Switch \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#

! ----- VLAN Configuration -----

! Create VLAN 10 for HR.

vlan 10

name HR

exit

! ----- Access Port Configuration -----

! Configure ports FastEthernet0/1-12 as access ports in VLAN 10.

interface range FastEthernet0/1-12

switchport mode access

switchport access vlan 10

exit

! ----- Uplink (Trunk) Configuration -----

! Set GigabitEthernet0/1 as a trunk port to carry VLANs to/from the CoreSwitch.

interface GigabitEthernet0/1

switchport mode trunk

switchport trunk allowed vlan 10,20,30,40,50,60

exit

! Save the configuration.

write memory

**3. CS Department Access Switch – CS\_Switch**

**Purpose:**

* **Basic Setup:** Configure the switch with a hostname and welcome message for the CS department.
* **VLAN Creation:** Create VLAN 20 for CS.
* **Access Ports:** Set access ports for CS devices.
* **Trunk Uplink:** Enable a trunk uplink port to carry multiple VLANs to the CoreSwitch.

**Configuration Commands:**

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

! 3. CS Department Access Switch – CS\_Switch

! Purpose: Basic configuration with welcome message and VLAN for CS.

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

enable

configure terminal

hostname CS\_Switch

! Welcome Message: Identify the CS switch.

banner motd #

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Welcome to the CS Department \*

\* Access Switch \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#

! ----- VLAN Configuration -----

! Create VLAN 20 for CS.

vlan 20

name CS

exit

! ----- Access Port Configuration -----

! Configure ports FastEthernet0/1-12 as access ports in VLAN 20.

interface range FastEthernet0/1-12

switchport mode access

switchport access vlan 20

exit

! ----- Uplink (Trunk) Configuration -----

! Configure uplink port to connect to CoreSwitch.

interface GigabitEthernet0/1

switchport mode trunk

switchport trunk allowed vlan 10,20,30,40,50,60

exit

! Save the configuration.

write memory

**4. Marketing Department Access Switch – Marketing\_Switch**

**Purpose:**

* **Basic Setup:** Set up a hostname and welcome banner for the Marketing department.
* **VLAN Creation:** Create VLAN 30 for Marketing.
* **Access Ports:** Configure access ports for marketing devices.
* **Trunk Uplink:** Provide a trunk uplink to the CoreSwitch.

**Configuration Commands:**

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

! 4. Marketing Department Access Switch – Marketing\_Switch

! Purpose: Basic configuration with welcome message and VLAN for Marketing.

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

enable

configure terminal

hostname Marketing\_Switch

! Welcome Message: Identify the Marketing switch.

banner motd #

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Welcome to the Marketing Dept \*

\* Access Switch \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#

! ----- VLAN Configuration -----

! Create VLAN 30 for Marketing.

vlan 30

name Marketing

exit

! ----- Access Port Configuration -----

! Configure ports FastEthernet0/1-12 as access ports in VLAN 30.

interface range FastEthernet0/1-12

switchport mode access

switchport access vlan 30

exit

! ----- Uplink (Trunk) Configuration -----

! Set trunk uplink port to connect to CoreSwitch.

interface GigabitEthernet0/1

switchport mode trunk

switchport trunk allowed vlan 10,20,30,40,50,60

exit

! Save the configuration.

write memory

**5. IT Department Access Switch – IT\_Switch**

**Purpose:**

* **Basic Setup:** Configure the IT switch with a hostname and a welcome banner for IT department users.
* **VLAN Creation:** Create VLAN 40 for IT.
* **Access Ports:** Assign IT devices to VLAN 40 through access ports.
* **Trunk Uplink:** Provide a trunk uplink to the CoreSwitch.

**Configuration Commands:**

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

! 5. IT Department Access Switch – IT\_Switch

! Purpose: Basic configuration with welcome message and VLAN for IT.

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

enable

configure terminal

hostname IT\_Switch

! Welcome Message: Identify the IT switch.

banner motd #

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Welcome to the IT Department \*

\* Access Switch \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#

! ----- VLAN Configuration -----

! Create VLAN 40 for IT.

vlan 40

name IT

exit

! ----- Access Port Configuration -----

! Configure ports FastEthernet0/1-12 as access ports in VLAN 40.

interface range FastEthernet0/1-12

switchport mode access

switchport access vlan 40

exit

! ----- Uplink (Trunk) Configuration -----

! Configure uplink port as a trunk to the CoreSwitch.

interface GigabitEthernet0/1

switchport mode trunk

switchport trunk allowed vlan 10,20,30,40,50,60

exit

! Save the configuration.

write memory

**6. Management Department Access Switch – Management\_Switch**

**Purpose:**

* **Basic Setup:** Set up a Management switch with an appropriate hostname and welcome message.
* **VLAN Creation:** Create VLAN 50 for the Management department.
* **Access Ports:** Assign access ports to VLAN 50 for management devices.
* **Trunk Uplink:** Configure a trunk uplink to connect to the CoreSwitch.

**Configuration Commands:**

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

! 6. Management Department Access Switch – Management\_Switch

! Purpose: Basic configuration with welcome message and VLAN for Management.

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

enable

configure terminal

hostname Management\_Switch

! Welcome Message: Identify the Management switch.

banner motd #

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Welcome to the Management Dept \*

\* Access Switch \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#

! ----- VLAN Configuration -----

! Create VLAN 50 for Management.

vlan 50

name Management

exit

! ----- Access Port Configuration -----

! Configure ports FastEthernet0/1-12 as access ports in VLAN 50.

interface range FastEthernet0/1-12

switchport mode access

switchport access vlan 50

exit

! ----- Uplink (Trunk) Configuration -----

! Configure uplink port as trunk to connect to the CoreSwitch.

interface GigabitEthernet0/1

switchport mode trunk

switchport trunk allowed vlan 10,20,30,40,50,60

exit

! Save the configuration.

write memory

**7. Finance Department Access Switch – Finance\_Switch**

**Purpose:**

* **Basic Setup:** Set the hostname and welcome banner for the Finance department.
* **VLAN Creation:** Create VLAN 60 for Finance.
* **Access Ports:** Assign access ports to VLAN 60 for finance devices.
* **Trunk Uplink:** Configure a trunk uplink to the CoreSwitch.

**Configuration Commands:**

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

! 7. Finance Department Access Switch – Finance\_Switch

! Purpose: Basic configuration with welcome message and VLAN for Finance.

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

enable

configure terminal

hostname Finance\_Switch

! Welcome Message: Identify the Finance switch.

banner motd #

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Welcome to the Finance Dept \*

\* Access Switch \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#

! ----- VLAN Configuration -----

! Create VLAN 60 for Finance.

vlan 60

name Finance

exit

! ----- Access Port Configuration -----

! Configure ports FastEthernet0/1-12 as access ports in VLAN 60.

interface range FastEthernet0/1-12

switchport mode access

switchport access vlan 60

exit

! ----- Uplink (Trunk) Configuration -----

! Configure uplink port as trunk to the CoreSwitch.

interface GigabitEthernet0/1

switchport mode trunk

switchport trunk allowed vlan 10,20,30,40,50,60

exit

! Save the configuration.

write memory

**8. Server-Side Switch – ServerSwitch**

**Purpose:**

* **Basic Setup:** Establish the hostname and welcome banner for the server room switch.
* **VLAN Creation:** Create VLANs for server resources: DHCP\_Server (VLAN 100), Email\_Server (VLAN 110), and HTTPS\_Server (VLAN 120).
* **Trunk Uplink:** Configure a trunk port to carry both server and departmental VLANs to the CoreSwitch.

**Configuration Commands:**

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

! 8. Server-Side Switch – ServerSwitch

! Purpose: Basic configuration with welcome message and VLANs for server resources.

! \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

enable

configure terminal

hostname ServerSwitch

! Welcome Message: Identify the Server Room switch.

banner motd #

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Welcome to the Server Room Switch \*

\* Authorized Personnel Only! \*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

#

! ----- VLAN Configuration -----

! Create VLANs for server resources.

vlan 100

name DHCP\_Server

vlan 110

name Email\_Server

vlan 120

name HTTPS\_Server

exit

! ----- Uplink (Trunk) Configuration -----

! Configure uplink port to carry both server and departmental VLANs.

interface GigabitEthernet0/1

switchport mode trunk

switchport trunk allowed vlan 100,110,120,10,20,30,40,50,60

exit

! Save the configuration.

write memory

**End of Configuration File**

Each section of the configuration is separated by comments that detail:

* **Purpose:** What the section is intended to do.
* **Configuration Steps:** How VLANs are created, how access/trunk ports are configured, and what the welcome messages are for.
* **Saving Configurations:** The use of write memory ensures changes persist after reboot.

This detailed document should provide a clear, professional guide to the network configuration, making it easy for anyone following to understand the entire process and the logic behind each command.