# Multilayer Switch Configuration

This playbook describes the essential steps for configuring multilayer switches. It includes the setting up of layer 3 switching functionalities, configuring inter-VLAN routing, and establishing various IP services.

### Step 1: Preparation

Gather all necessary information such as IP addresses, subnet masks, VLAN IDs, and any relevant routing protocols that will be used.

### Step 2: Access Switch

Connect to the switch using SSH, Telnet, or a console connection to access the switch's command-line interface (CLI).

### Step 3: Enter Privileged Mode

Enter privileged EXEC mode by typing `enable` in the CLI and providing the required password.

### Step 4: Configuration Mode

Access the global configuration mode by typing `configure terminal` or `conf t` from the privileged EXEC mode.

### Step 5: Configure VLANs

Create VLANs as needed by using the `vlan <VLAN\_ID>` command and provide a name using the `name <VLAN\_NAME>` command within the VLAN configuration mode.

### Step 6: Assign Switchports

Assign switch ports to VLANs using the `interface <INTERFACE\_ID>` command followed by the `switchport access vlan <VLAN\_ID>` command in their respective interface configuration modes.

### Step 7: Configure SVIs

Set up Switched Virtual Interfaces (SVIs) for inter-VLAN routing using the `interface vlan <VLAN\_ID>` command, assigning IP addresses with `ip address <IP\_ADDRESS> <SUBNET\_MASK>` and enabling them with `no shutdown`.

### Step 8: Enable Routing

Enable layer 3 routing capabilities by typing the `ip routing` command in the global configuration mode.

### Step 9: IP Routing Protocol

Configure an IP routing protocol such as OSPF or EIGRP if required, using the router protocol commands and specifying networks with network statements.

### Step 10: Verify Configuration

Verify the configuration is correct and operational using verification commands such as `show ip route`, `show ip interface brief`, and `show vlan`.

### Step 11: Save Configuration

Save the running configuration to the startup configuration file to ensure changes are persistent after a reboot by using the `write memory` or `copy running-config startup-config` commands.

## General Notes

### Backups

Always backup the current switch configuration before making changes to avoid loss of service in case of misconfiguration.

### ACLs

Consider implementing Access Control Lists (ACLs) for security purposes to control traffic flow between VLANs.

### Testing

After configuration, thoroughly test connectivity and routing between VLANs to ensure the network operates as intended.