Basic Cisco Switch Configuration Guide

This guide outlines the essential steps for configuring a Cisco switch, including general setup, security hardening, remote management, logging, time synchronization, and network monitoring.

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1. Initial Configuration

```bash
Switch> enable
Switch# configure terminal
Switch(config)# hostname Switch1
Switch1(config)# enable secret StrongPassword123

Switch1(config)# line console 0
Switch1(config-line)# password consolePass
Switch1(config-line)# login
Switch1(config-line)# exit

Switch1(config)# interface range Fa0/1 - 2
Switch1(config-if-range)# description PCs
Switch1(config-if-range)# switchport access vlan 10
Switch1(config-if-range)# no shutdown
Switch1(config-if-range)# exit

Switch1(config)# interface vlan 1
Switch1(config-if)# ip address 192.168.1.2 255.255.255.0
Switch1(config-if)# no shutdown
Switch1(config-if)# exit
```

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2. Security Hardening

```bash
Switch1(config)# interface range Fa0/3 - 24
Switch1(config-if-range)# shutdown
Switch1(config-if-range)# switchport access vlan 999
Switch1(config-if-range)# exit

Switch1(config)# interface Fa0/1
Switch1(config-if)# switchport port-security
Switch1(config-if)# switchport port-security maximum 2
Switch1(config-if)# switchport port-security violation restrict
Switch1(config-if)# switchport port-security mac-address sticky
Switch1(config-if)# exit
```

```bash
Switch1(config)# service password-encryption
```

Security Hardening

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3. Remote Management (SSH)

```bash
Switch1(config)# ip domain-name example.com
Switch1(config)# crypto key generate rsa
How many bits in the modulus [512]: 1024

Switch1(config)# username admin secret AdminPass123

Switch1(config)# line vty 0 4
Switch1(config-line)# transport input ssh
Switch1(config-line)# login local
Switch1(config-line)# exit
```

Remote SSH Access

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4. MOTD Banner

```bash
Switch1(config)# banner motd #Unauthorized access is prohibited!#
```

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5. Syslog Configuration

```bash
Switch1(config)# logging 192.168.1.100
Switch1(config)# logging trap warnings
Switch1(config)# logging source-interface vlan 1 ! optional
```

Encryption + Logging

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6. SNMP Setup

```bash
! SNMPv2c
Switch1(config)# snmp-server community public RO

! SNMPv3 (example)
Switch1(config)# snmp-server group SNMPv3Group v3 priv
Switch1(config)# snmp-server user SNMPv3User SNMPv3Group v3 auth md5 AuthPass123 priv aes 128 PrivPass123
Switch1(config)# snmp-server enable traps
Switch1(config)# snmp-server contact admin@example.com
Switch1(config)# snmp-server location DataCenter1
```

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7. NTP Configuration

```bash
Switch1(config)# ntp server 192.168.1.50 Switch1(config)#
clock timezone PST -8 Switch1(config)# show clock
Switch1(config)# show ntp status
```

NTP Time Sync

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8. Visual Diagrams

- [x] Basic Switch Setup
  Basic Switch Setup
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  Security Hardening
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  Remote SSH Access
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  NTP Time Sync

End of Configuration Guide