Master Cisco Command For Better Network Config

1. Basic Router Configuration

Hostname & Security

```
Router(config)#hostname R1
R1(config)#enable secret cisco
R1(config)#service password-encryption
R1(config)#banner motd $
UNAUTHORIZED ACCESS IS PROHIBITED
$
```

Console, VTY & AUX Lines

```
R1(config)#line con 0
R1(config-line)#password cisco
R1(config-line)#login
R1(config-line)#logging synchronous
R1(config-line)#exec-timeout 30 0
R1(config)#line vty 0 4
R1(config-line)#password cisco
R1(config-line)#login
R1(config-line)#logging synchronous
R1(config-line)#exec-timeout 30 0
R1(config)#line aux 0
R1(config-line)#password cisco
R1(config-line)#login
R1(config-line)#logging synchronous
R1(config-line)#exec-timeout 30 0
```

Aliases & SSH

```
R1(config)#alias exec c configure terminal
R1(config)#alias exec s show ip interface brief
R1(config)#alias exec sr show running-config
R1(config)#no ip domain-lookup
R1(config)#ip domain-name example.com
R1(config)#username admin password cisco
R1(config)#crypto key generate rsa
R1(config)#ip ssh version 2
R1(config)#line vty 0 4
R1(config-line)#login local
R1(config-line)#transport input telnet ssh
```

2. Static Routes, RIP, and OSPF Setup

Static & Default Routes

```
R1(config)#ip route 10.1.2.0 255.255.255.0 10.1.128.1
R1(config)#ip route 10.1.2.0 255.255.255.0 Serial 0/0
R1(config)#ip route 0.0.0.0 0.0.0.0 199.1.1.1
```

RIP Configuration

```
R1(config)#router rip
R1(config-router)#version 2
R1(config-router)#network 10.0.0.0
R1(config-router)#no auto-summary
R1(config-router)#passive-interface serial 0/0
```

RIP Verification

```
R1#show ip protocols
R1#show ip route
R1#show ip route rip
R1#show ip route 10.1.1.1
```

OSPF Configuration

```
R1(config)#router ospf 10
R1(config-router)#network 10.0.0.0 0.255.255.255 area 0
R1(config-router)#network 172.16.8.0 0.0.7.255 area 0
R1(config-router)#network 192.168.1.254 0.0.0.0 area 1
R1(config-router)#router-id 1.1.1.1
```

OSPF Tuning & Security

```
R1(config)#interface loopback 0
R1(config-if)#ip address 1.1.1.1 255.255.255.255
R1(config-if)#ip ospf hello-interval 2
R1(config-if)#ip ospf dead-interval 6
R1(config-if)#ip ospf cost 55
R1(config-if)#bandwidth 128
R1(config-router)#auto-cost reference-bandwidth 1000
R1(config-if)#ip ospf authentication message-digest
R1(config-if)#ip ospf message-digest-key 1 md5 cisco
R1(config-router)#maximum-paths 6
R1(config-router)#passive-interface serial 0/0
```

3. Basic Switch Configuration & SSH Access

Initial Setup & Security

```
SW1(config)#hostname SW1
SW1(config)#enable secret cisco
```

```
SW1(config)#enable password notcisco
SW1(config)#service password-encryption
SW1(config)#banner motd $
UNAUTHORIZED ACCESS IS PROHIBITED
$
```

Line Configuration

```
SW1(config)#line con 0
SW1(config-line)#password cisco
SW1(config-line)#login
SW1(config)#line vty 0 4
SW1(config-line)#password cisco
SW1(config-line)#login
SW1(config-line)#history size 15
SW1(config-line)#exec-timeout 10 30
SW1(config-line)#logging synchronous
```

Management Interface & Gateway

```
SW1(config)#interface vlan 1
SW1(config-if)#ip address 172.16.1.11 255.255.255.0
SW1(config-if)#no shutdown
SW1(config)#ip default-gateway 172.16.1.1
SW1#copy running-config startup-config
SW1#write
```

SSH Configuration

```
SW1(config)#ip domain-name example.com
SW1(config)#username admin password cisco
SW1(config)#crypto key generate rsa
How many bits in the modulus [512]: 1024
SW1(config)#ip ssh version 2
SW1(config)#line vty 0 4
SW1(config-line)#login local
SW1(config-line)#transport input telnet ssh
```

4. VLANs, Port Security & Verification

Shortcuts & Interface Settings

```
SW1(config)#alias exec c configure terminal
SW1(config)#alias exec s show ip interface brief
SW1(config)#alias exec sr show running-config
SW1(config)#interface fastEthernet 0/1
SW1(config-if)#description LINK TO INTERNET ROUTER
SW1(config-if)#speed 100
SW1(config-if)#duplex full
```

```
SW1(config-if)#interface range fastEthernet 0/5 - 10
SW1(config-if-range)#duplex full
```

Verification Commands

```
SW1#show version
SW1#show running-config
SW1#show startup-config
SW1#show history
SW1#show ip interface brief
SW1#show interface vlan 1
SW1#show interfaces description
SW1#show interfaces status
SW1#show crypto key mypubkey rsa
SW1#show dhcp lease
```

Port Security Configuration

```
SW1(config-if)#switchport mode access
SW1(config-if)#switchport port-security
SW1(config-if)#switchport port-security maximum 1
SW1(config-if)#switchport port-security violation shutdown
SW1(config-if)#switchport port-security mac-address 68b5.9965.1193
```

Port Security Verification

```
SW1#show mac-address-table
SW1#show port-security
SW1#show port-security interface fa0/5
```

VLAN Setup

```
SW1(config)#vlan 10
SW1(config-vlan)#name SALES
SW1(config)#interface fastEthernet 0/5
SW1(config-if)#switchport mode access
SW1(config-if)#switchport access vlan 10
```

5. Trunking, VTP, and STP Optimization

Voice & Data VLANs

```
SW1(config)#interface fastEthernet 0/5
SW1(config-if)#switchport access vlan 16
SW1(config-if)#switchport voice vlan 12
```

Trunk Configuration

```
SW1(config)#interface fastEthernet 0/1
SW1(config-if)#switchport mode trunk
SW1(config-if)#switchport trunk allowed vlan add 10
```

Trunk Hardening

```
SW1(config-if)#shutdown
SW1(config-if)#nonegotiate
SW1(config-if)#switchport mode access
SW1(config-if)#switchport access vlan 222
```

VTP Configuration

```
SW1(config)#vtp mode server
SW1(config)#vtp domain EXAMPLE
SW1(config)#vtp password cisco
SW1(config)#vtp pruning
SW1(config)#vtp version 2
```

STP Root Bridge & Modes

```
SW1(config)#spanning-tree vlan 1 root primary
SW1(config)#spanning-tree vlan 1 root secondary
SW1(config)#spanning-tree vlan 1 priority 8192
SW1(config)#spanning-tree mode rapid-pvst
```

STP Features & EtherChannel

```
SW1(config-if)#spanning-tree portfast
SW1(config-if)#spanning-tree bpduguard enable
SW1(config-if)#spanning-tree vlan 1 cost 25
SW1(config-if)#channel-group 1 mode on
```

STP/VTP Verification

```
SW1#show interfaces switchport
SW1#show interfaces trunk
SW1#show vlan brief
SW1#show vtp status
SW1#show vtp password
```

6. STP & CDP Troubleshooting

CDP Configuration

```
SW1(config)#cdp run
SW1(config-if)#no cdp enable
```

CDP Verification

```
SW1#show cdp
SW1#show cdp interface
SW1#show cdp neighbors
SW1#show cdp neighbors detail
SW1#show cdp entry *
```