Cisco Cheat Sheet

Basic Configuration

Initial Commands

Name the device:

```
Router# configure terminal
Router(config)# hostname [hostname]
```

Configure a banner:

```
R1(config)# banner motd $Autorized Access Only$
```

Save the Changes:

```
R1# copy running-config startup-config
```

Configure Interface IPv4:

```
R1(config)# interface gigabitethernet 0/0
R1(config-if)# description Link to LAN 1
R1(config-if)# ip address 192.168.10.1 255.255.255.0
R1(config-if)# no shutdown
```

-or-

```
R1(config)# interface serial 0/0/0
R1(config-if)# description Link to R2
R1(config-if)# ip address 209.165.200.225 255.255.255.252
R1(config-if)# clock rate 128000
R1(config-if)# no shutdown
```

Secure Management Access

```
R1(config)# enable secret class
R1(config)# line console 0
R1(config-line)# password cisco
R1(config-line)# login
R1(config-line)# exit
R1(config)# line vty 0 4 ← depending on the number of VTYs!
R1(config-line)# password cisco
R1(config-line)# login
R1(config-exit)# exit
R1(config)# service password-encryption
```

VLAN

Access Control Lists

This chapter describes how to configure Access Control Lists (ACLs).

> **Note!** Each ACL contains an implicit DENY at the end!

IPv6

This chapter describes how to configure IPv6.

IPv6 Autoconfiguration

> **Note!** Autoconfiguration requires te leas amount of configuration but makes it difficult to remember the IPv6 addresses. This method uses the MAC address of the device to create an IPv6 address with the `FE80::` prefix.

Begin by configuring the router. Enter the interface configuration mode and enable IPv6 on the interface.

```
R1(config)# ipv6 unicast-routing
R1(config)# interface FastEthernet0/0
R1(config-if)# ipv6 enable
```

Next, configure a link local address and a global unicast address on the interface. This example uses `eui-64` to reduce the configuration.

```
R1(config-if)# ipv6 address autoconfig
R1(config-if)# ipv6 add 2000::/64 eui-64
R1(config-if)# no shutdown
```

Verify the interface is *up* and has two IPv6 addresses.

```
R1>show ipv6 interface brief
```

IPv6 Static

Begin by configuring a static IPv6 address on the router

```
R1(config)# ipv6 unicast-routing
R1(config)# interface FastEthernet0/0
R1(config-if)# ipv6 enable
R1(config-if)# 2000::1/64
R1(config-if)# no shutdown
```

Spanning Tree

This chapter describes how to configure Spanning Tree.

Link Aggregation

This chapter describes how to configure port channels and to apply and configure the Link Aggregation Control Protocol (LACP).

Configure Interfaces

```
s1(config)# interface range fe0/1-2
s1(config-if-range)# shutdown
s1(config-if-range)# channel-group 1 mode active
s1(config-if-range)# exit
s1(config)# interface port-channel 1
s1(config-if)# switchport mode trunk
s1(config-if)# switchport trunk allowed vlan 1,2,20
```

Verify Link Aggregation

```
s1# show interface port-channel1
s1# show etherchannel summary
s1# show etherchannel port-channel
s1# show interfaces f0/1 etherchannel
```

More information about Link Aggregation Control Protocol (LACP) (802.3ad) for Gigabit Interfaces.

OSPF

This chapter describes how to configure OSPF.

Single-Area OSPF

```
R1(config)# interface GigabitEthernet0/0
R1(config-if)# bandwidth 1000000
R1(config-if)# exit
R1(config)# router ospf 10
R1(config-router)# router-id 1.1.1.1
R1(config-router)# auto-cost reference-bandwidth 1000
R1(config-router)# network 172.16.1.0 0.0.0.255 area 0
R1(config-router)# passive-interface g0/0
```

Single-Area OSPFv3

```
R1(config)# ipv6 router ospf 10
R1(config-router)# router-id 1.1.1.1
R1(config-router)# auto-cost reference-bandwidth 1000
R1(config-if)# interface GigabitEthernet 0/0
R1(config-if)# bandwidth 1000000
R1(config-if)# ipv6 ospf 10 area 0
```

Verifying Single-Area OSPF

> **Note!** To verify Single-Area OSPFv3 please use the ipv6 command.

```
R1# show ip ospf neighbor
R1# show ip protocols
R1# show ip ospf
R1# show ip ospf interface
R1# show ip ospf interface brief
```

Multi-Area OSPF

> **Note!** The same commands are used as for Single-Area OSPF, except there are more area's. Carefully look which device belong to which area.

Configure PPP

This chapter describes how to configure a PPP connection.

Basic PPP Configuration

```
R1(config)# interface Serial 0/0/0
R1(config-if)# encapsulation ppp
```

Basic PPP Compression

```
R1(config)# interface Serial 0/0/0
R1(config-if)# encapsulation ppp
R1(config-if)# compress predictor
```

Basic PPP Link Quality Control

```
R1(config)# interface Serial 0/0/0
R1(config-if)# encapsulation ppp
R1(config-if)# ppp quality 80
```

Basic PPP Link Quality Control

```
R1(config)# interface multilink 1
R1(config-if)# interface Serial 0/0/0
R1(config-if)# interface Serial 0/0/1
```

Basic PPP PAP Authentication

Note! The first command is the expected username and password which R3 will send!

```
R1(config)# username R3 secret class
R1(config)# interface s0/0/0
R1(config-if)# ppp authentication pap
R1(config-if)# ppp pap sent-username R1 password cisco
```

Basic PPP CHAP Authentication

Note! As opposed of PAP. CHAP passwords need to be identical

```
R1(config)# hostname Router1
Router1(config)# username Router 3 secret cisco
Router1(config)# interface s0/0/0
Router1(config-if)# ppp authentication chap
```

Troubleshoot PPP

```
R1# debug ppp packet R1# debug ppp negotiation
R1# debug ppp authentication R1# debug ppp error
```

Verifying PPP Connection

```
R1# show interface serial 0/0/0
R1# show ppp multilink
```

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https://github.com/roaldnefs/cisco-cheatsheet