

Cisco CLI Cheatsheet

Routerbefehle

Grundkonfiguration

Hostname

```
#Hostname
enable
configure terminal
hostname NAME
```

Passwords

```
#Terminal Password
#i.e. enable Passwort
enable
configure terminal
enable secret cisco
```

"secret" erstellt ein verschlüsseltes Passwort. Man könnte "password" nutzen, allerdings ist dass Passwort dann in Klartext gespeichert.

```
#Line Password
#i.e. Passwort für SSH/Serial
enable
configure terminal
line console 0
# für ssh "vty 0 15", i.e. virtual ty 0-15
password cisco #set password
login #require login
```

```
#Password encryption
enable
configure terminal
service password-encryption
```

Verschlüsselt auch alle bestehenden Passwörter.

Show and save config

```
#Show config in RAM (running-config)
enable
show running-config
#Configuration speichern
#RAM -> NVRAM
copy running-config startup-config
#alternativ
write-memory #Kann mit "w" abgekürzt werden
```

Execute terminal command from any level

```
do [command]
```

Interfaces

```
enable
configure terminal
#select interface (or if-group)
interface GigabitEthernet0/0 #short "int gig0/0"
#interface range gig0/1-0/4
#set address with SNM
ip address 192.168.1.254 255.255.255.0
#activate interface
no shutdown
#reset interface(s)
default interface range gig0/1-10
```

Routing

```
#Add Route
enable
configure terminal
ip route 192.168.2.0 255.255.255.0 212.20.20.10
#ip route [Net] [SNM] [NextHop]
```

NextHop kann IP des NextHop sein, oder ausgehende Schnittstelle (z.B. gig 1/0).

Loopback

```
(config)#ip route 0.0.0.0 0.0.0.0 loopback 0
(config)#ipv6 route ::/0 loopback 0
```

Information

cmd	Output
show running-config	Current config
show startup-config	Startup/saved config
show ip route	Routing table
show ip interface brief	Kurzzusammenfassung der Interfaces
show ip interface gig 0/0	Details zu Interface gig 0/0
show flash	Content and Usage of Flash
show version	Version of OS and Bootloader
show ip rip databse	RIP DB
debug ?	Debugging

RIP

```
(config)#router rip
(config-router)#version 2
(config-router)#network 192.168.1.0
```

```
(config-router)#passive-interface gig0/0
(config-router)#default-information originate ;Router gibt Default-Route weiter
(config-router)#timers basic [upd] [inv] [holddown] [flush] (in Sekunden)
```

NAT

```
;ACL
(config)#ip access-list standard NAME
(config-std-NAME)#permit 192.168.1.0 0.0.0.255
;Outside Interface
(config-if)#ip nat outside
;Inside Interface
(config-if)#ip nat inside
;NAT Enable
(config)#ip nat inside source list LIST-NAME interface OUTSIDE-IF overload
```

Port Forwarding

```
(config)#ip nat inside source static tcp [IP-INSIDE] [PORT-INSIDE] [IP-OUTSIDE] [PORT-OUTSIDE]
```

OSPF

```
(config)#router ospf 1 ;<- Process ID
(config-router)#network NET-ID WILDCARD-MASK area ZONE
(config-router)#auto-cost bandwidth-reference REF-IN-MBIT

(config-if)#ip ospf cost N
```

DHCP

```
(config)#ip dhcp excluded-address [start] [end]
(config)#ip dhcp pool POOL
(dhcp-config)#network [id] [snm]
(dhcp-config)#default-router [std-gw]
```

```
(dhcp-config)#domain-name domain.net
```

VLAN

Auf Switches sind Ports Default UP

```
# Management VLAN
(config)#interface vlan 2
(config-if)#ip address [ip] [snm]
(config-if)#description mgmt
(config-if)#no shutdown

(config)#ip default-gateway [ip]
# VLANs erstellen und Ports zuweisen
# Native VLAN ändern
(config)#vlan 3
(config-vlan)#name VLAN3
(config-vlan)#vlan 4
(config-vlan)#name native

# VLAN Virtuelle Schnittstelle
(config)#int vlan 3
(config-if)#ip addr 192.168.10.254 255.255.255.0

# Inter-Switch Ports
(config)#interface range gig0/1-2
# bei Multilayer Switches muss vorher eine Encapsulation definiert werden:
(config-if-range)#switchport trunk encapsulation dot1q
(config-if-range)#switchport mode trunk
(config-if-range)#switchport trunk native vlan 4
(config-if-range)#switchport trunk allowed vlan 2, 3, 4

# User Ports
(config)#interface range gig0/3-10
(config-if-range)#switchport mode access
(config-if-range)#switchport access vlan 3
(config-if-range)#switchport port-security
(config-if-range)#switchport port-security maximum 3 #max 3 learned MAC
```

```
# Routed Port
(config)#interface gig0/1
(config-if)#no switchport
(config-if)#ip addr 172.16.0.1 255.255.255.252
```

Subinterfaces (Router on a stick)

```
(config)#ipv6 unicast-routing
(config)#interface gig0/0/1.2
(config-subif)#encapsulation dot1Q 2
(config-subif)#description VLAN2
(config-subif)#ip address [ip] [snm]
(config-subif)#ipv6 address fe80::1 link-local
(config-subif)#ipv6 address [ip]/[cidr]
[...]
(config)#interface gig0/0/1
(config-if)#no shutdown
```

Etherchannel

```
(config)#interface range gig0/1-2
(config-if-range)#channel-group 1 mode active
```

Firewalls

```
### ACL

(config)#ip access-list extended [NAME]
(config-ext-nacl)#deny/permit [PROTO] [RULE]
#RULE -> SOURCE TARGET
#SOURCE/TARGET ->
    host [IP] (eq [PORT])
    [NET] [WILDCARD] (eq [PORT])
    any (eq [PORT])
```

```
#z.B.
(config)#ip access-list extended [NAME]
(config-ext-nacl)#permit tcp any any eq www
(config-ext-nacl)#permit tcp any any eq 110
(config-ext-nacl)#permit icmp host 192.168.1.1 host 192.168.1.254

### Assign to IF

(config-if)#ip access-group [NAME] in/out

### make firewall statefull
(config)#ip inspect name [NAME] tcp
(config)#ip inspect name [NAME] udp
(config)#ip inspect name [NAME] icmp
# [NAME] muss gleich sein
(config-if)#ip inspect [NAME] out

### Stats

#show access-list [NAME]
```

Misc

```
;DHCP-"Relay"
(config-if)#ip helper-address IP-DHCP-SRV
```

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