



## Mode Navigation

```
R> enable
//enters the Privileged EXEC mode
R# configure terminal
//enters the global config mode
R(config)# interface
<type>/<number>
//enters the interface type/number
config mode
```

Example: `interface fa0/1`

## Tips and Tricks

```
?
//displays all the possible commands
in the current mode
<tab>
//autocompletes the rest of the
command
do <command>
//executes the command in the
Privileged Exec mode, regardless of the
current shell mode
<shortcut>
//you can execute a command by
typing just the first letters of it and press
enter
exit
//exits the current mode
end
//exits the current mode and enters the
Privileged EXEC mode
<CTRL+SHIFT+6>
//interrupts the execution of the
current command
no <command>
//cancels the command/ deletes the
configuration of that command
```

Example: `en`  
`conf t`  
`int fa0/0`

## Show commands

```
show running-config
//view the router's/switch's entire
active configuration

show ipv6 interface brief
//view the available interfaces and their
brief parameters (IP, active, etc.)

show [ip/ipv6] route
//view the routing table

show ipv6 access-list
//verify the access list configuration

show acces-list
//display all access lists configured on
the device

show ipv6 ospf neighbor
//view OSPFv3 neighbors

show version
//view information on the software
version

show cli history <no>
//display the last <no> commands
```

## Basic commands

### #PASSWORDS & basic

```
R(config-line)# logging
synchronous
//prevents every logging output from
immediately interrupting your console
session
R(config-line)# exec-timeout
<minutes> <seconds>
//disconnect a console or VTY user
after <min> <sec> of inactivity
R(config-line)# username <user>
secret <password>
```

```
//set user <user> with encrypted
password <password>
```

```
R(config-line)# username <user>
password <password>
R(config-line)# password
<password>
R(config-line)# login
//password <password> is configured
for all users attempting to use the
console
R(config)# line vty 0 4
R(config-line)# login local
//password <password> is configured
for all users attempting to use the
console
```

### #ADD IPs (on router's interfaces)

```
R(config)# interface
<type>/<number>
//enters the interface config mode
R(config-if)# ip address <IP>
<decimal-MASK>
//sets the Ipv4 and the mask to the
interface
R(config-if)# no shutdown
//enables the interfaces (brings it up)
R(config-if)# ipv6 address
<IP>/<mask> <eui-64>
//sets the Ipv6 and the mask to the
interface; optional using the eui-64
method
```

```
Example:
username flavia secret flv
line con 0
    password flavia
    logging sync
    exec-timeout 0 0
    exit
line vty 0 4
    login local
    exit
int fa0/3
    ip add 10.10.10.1
    255.255.255.248
    no shut
    ipv6 add 1234::1/64 eui-
```

64

# Cheatsheet IOS

## Routing Configuration

### #STATIC ROUTING

```
ip route <destination network>
<destination network's mask>
<next-hop>
//sets the route to the destination
network through the next-hop

Example: en
conf t
ip route 10.10.10.0 255.255.255.0
192.168.0.1
```

```
ip route 0.0.0.0 0.0.0.0 <next-
hop>
//sets the default route: all the packets
with unknown destinations will be sent
through that next-hop
```

```
ipv6 unicast-routing
ipv6 route <destination network>
<output interface> <next-hop>
//sets the route to the destination
network through the next-hop
```

```
Example: en
conf t
ipv6 route 1234::/32 Gi0/0/0
1234::20:1
```

### #OSPFv3

```
interface <type>/<number>
ipv6 enable
ipv6 ospf <process-id> area
<area-no>
//activate the OSPFv3 process on the
router and include the interface
<type>/<number> in the area <area-no>

ipv6 router ospf <process-no>
router-id <IPv4-ID>
//sets the router-id; the ID must have
the format of an IPv4 address
router ospfv3 <process-id>
router-id <IPv4-ID>
//sets the router-id
default-metric <number>
//sets the default OSPF metric value
clear ipv6 ospf process
//resets the process of ospfv3
```

```
area <area-no> virtual-link
<Router-ID>
//creates a virtual-link over area <area-
no> between current router and the
destination with RID <Router-ID>
area <area-no> stub
//configure area <area-no> as a stub
area
redistribute <redistributed-
routes> metric-type <no> metric
<metric>
//redistribute routes into another
AS/protocol with a certain metric
```

### #DISTRIBUTE-LIST & ROUTE-MAPS

```
distribute-list {access-list-
number | name} {in | out}
[interface]
//filters routes only from entering the
routing table, but it doesn't prevent
LSPs from being propagated
```

```
distribute-list route-map
<route-name> {in | out}
//distribute-list out works only on the
routes being redistributed by the ASBR
into OSPF; can be applied to external
type 2 or 1, but not to intra-area and
interarea routes
```

```
route-map <name> {permit | deny}
<route-map-no>
//creates the <name> route-map with
a permit/deny statement
```

```
match {interface | ip address |
ip next-hop | route-source |
metric | route-type | tag}
```

interface	out router interface
ip address	ACLs and prefix-
	lists
ip next-hop	IP address of next-
	hop
metric	route metric

```
set {ip next-hop | interface |
ip default | default}
```



```
Example: ipv6 router ospf 1
router-id 10.10.10.10

area 1 virtual-link 2.2.2.2
redistribute connected metric-
type 1 metric 100
exit

int fa0/1
ipv6 router ospf area 0
end
clear ipv6 ospf process

show ipv6 ospf neighbor

route-map cheatsheet permit 10
match ip address acl_permit

ipv6 access-list acl_permit
seq 10 permit 1000::/64 any

ipv6 router ospf 1
distribute-list route-map
cheatsheet in
```

## Access Lists

```
ipv6 access-list <acl-name>
//creates the <acl-name> IPv6 ACL
```

```
{permit | deny} <protocol>
<source> <destination> <ports>
```

```
permit          allow matched
packet
deny            deny matched
packets
evaluate        evaluate a reflexive
ACL
```

```
<protocol>      {ip | tcp | icmp
| ipv6 | udp }
```

```
any             any source/destination
```

```
established     match already
established connections
```

```
ipv6 traffic-filter <acl-name>
{in | out}
//apply the ACL on an interface on the
in or out direction
```

```
Example: ipv6 acc example-dummy
```

```
deny ipv6 any host 1010::/120
```

```
permit icmp 1234::/64 any
```

```
deny ipv6 any any range 10 20
```

```
permit ip any any
```

```
permit icmp any any
```

```
int fa0/0
```

```
ipv6 traffic-filter example-dummy
in
```