Cisco IOS Procedures

Conventions

(explanation)	text in parenthesys is an explanation; don't type this
enable	command; type it as written
name	user argument to a command; type the value you care, the indicated value is an example
option	argument to a command; type an accepted value; if in **[ ]** it's **optional;** if in **{		}**, it's the **list of options**
ⁿ	footer note: more explanation; don't type it
R> R# R(config)# ...	prompt of Cisco IOS router (or switch) shell; R (or S) is hostname; you don't type these
ipv6 ...	command about IPv6 configuration
to check	this command needs more investigations
reference	a reference to another procedure

Quick Start

Router> enable
Router# configure terminal
... <cut> ...
Router(config)# no ip domain-lookup
Router(config)# hostname *R1*
 R1(config)# ipv6 unicast-routing
R1(config)# exit

Restrict access to privileged mode

R1(config)# enable secret *pass1234**

Restrict access to user mode

eventually, see: Enable SSH
R1(config)# service password-encryption
R1(config)# login block-for *120* attempts *3* within *60*
R1(config)# security password min-length *8*

R1(config)# line console 0
R1(config-line)# password *pass4321**
R1(config-line)# login

R1(config-line)# line vty 0 15
R1(config-line)# password *pass4321**
R1(config-line)# login

R1(config-line)# line aux 0
R1(config-line)# password *pass4321**
R1(config-line)# login

R1(config)# banner motd *delimiter message delimiter*

Enable SSH

R# show ip ssh
exec 1st phase of Restrict access to user mode, until password min-length
R1(config)# ip domain-name *ldfa.it*
R1(config)# crypto key generate rsa general-keys modulus 1024
create user(s): Manage user: create, destroy
R1(config)# line console 0
R1(config-line)# login local
R1(config-line)# transport input ssh
R1(config-line)# exec timeout 10

R1(config-line)# line vty 0 15
R1(config-line)# login local
R1(config-line)# transport input ssh
R1(config-line)# exec timeout 10

R1(config-line)# line aux 0
R1(config-line)# login local
R1(config-line)# transport input ssh
R1(config-line)# exec timeout 10
R1(config-line)# exit

R1(config)# ip ssh version 2

Manage user: create, destroy

R1(config)# username *luciano* privilege *15* secret
  pass1234*
R1(config)# no username *luciano*

Interface configuration

R(config)# interface {vlan1 | gigabitethernet 0/0 |
  fastethernet 0/0 | serial 0/0/0 | loopback}
R(config-if)# ip address *ip-addr subnet-mask*
R(config-if)# ipv6 enable
R(config-if)# ipv6 address *ipv6-addr/prefix-len*
R(config-if)# ipv6 address *FE80::1* link-local
R(config-if)# description *interface_description*
R(config-if)# no shutdown
R(config-if)# exit

Verify configuration

R# show ip interface [brief]
R# show ipv6 interface [brief]
R# ping *ip-addr*
R# ping ipv6 *ipv6-addr*
R# show ip route [static | dynamic]
R# show ipv6 route [static | *address*]
R# show interfaces
R# show interface *interface*
R# traceroute *ip-addr*

Manage configuration: view, save, erase

R# show {running-config | startup-config}
R# copy running-config startup-config
R# reload

Configuration of management SVI [1]

(to manage the **switch** layer 2 from terminal on inband
  interface; bad pactice to use vlan 1, so:)
S(config)# vlan *99*
S(config-vlan)# name *svi_99*
S(config-vlan)# exit

S(config)# interface *fastethernet 0/1*
S(config-if)# switchport access vlan *99*
S(config-if)# exit

S(config)# interface vlan *99*
S(config-if)# ip address *192.168.10.254 255.255.255.0*
S(config-if)# no shutdown
S(config-if)# exit

(then, if you need to manage **from remote** lan, set this:)
S(config)# ip default-gateway *192.168.10.1*

---

1   **switch** layer 2 only

Secure port configuration

S(config)# interface fastethernet 0/18
S(config-if)# switchport mode access
S(config-if)# switchport port-security
S(config-if)# switchport port-security maximum 10
S(config-if)# switchport port-security mac-address sticky
S(config-if)# end

S# show port-security interface [interface-id]

Recover a secure port from error-disabled state

S(config-if)# shudown
S(config-if)# no shudown

VLAN configuration (with voice)

S# configure terminal
S(config)# vlan *20*
S(config-vlan)# name *USER_DATA*
S(config-vlan)# vlan 150
S(config-vlan)# name *VOICE*
S(config-vlan)#
S(config-vlan)# interface [range] *fa 0/18*
S(config-if)# switchport mode access
S(config-if)# switchport access vlan *20*
S(config-if)# mls qos trust cos
S(config-if)# switchport access vlan *150*
S(config-if)# end

Router-on-a-stick configuration

R# configure terminal
R(config)# interface g0/0.10
R(config-subif)# encapsulation dot1q *10*
R(config-subif)# ip address *ip-addr subnet-mask*

R(config-subif)# interface g0/0.30
R(config-subif)# encapsulation dot1q 3*0*
R(config-subif)# ip address *ip-addr subnet-mask*
R(config-subif)# exit

R(config)# interface g0/0
R(config-if)# no shutdown
R(config-if)# end

(verifying)
R# show vlan
R# show ip route

ACL configuration

R# configure terminal
R(config)# access-list *1* permit *192.168.1.0 0.0.0.255*
R(config)# interface serial 0/0/0
R(config-if)# ip access-group *1* out

```
R(config)# ip access-list standard first-floor
R(config-std-nacl)# {permit | deny | remark} source
   [wildcard] [log]
R(config)# interface serial 0/0/0
R(config-if)# ip access-group first-floor out
```

Abbreviations and acronyms

ACL	Access Contrl List
DCE	Data Circuit-terminating Equipment,
IOS	cisco Interneworking Operating System

IP	Internetwork protocol
LAN	Local Area Network
MAC	Media Access Control
SSH	Secure Shell
VLAN	Virtual LAN