Cisco List

Order of Sections:

0. How to Access the Cisco Portion:

1. Go to www.netacad.com
2. Use the Cisco login and password that is on your sheet ex. 11-0000cp
3. Click on the course for the current round
4. Click on either the quiz or the packet tracer and

follow the instructions

1. Navigating the Different Levels:
enable
en
(Get to privileged exec mode)

disable
(get to starting mode)

configure terminal
conf t
(Get to global exec mode)

exit
(Go down a level)

end
(Go down to privileged exec)

interface [type]/[number]
int
(Get to configuring an interface)

interface range [type]/[number] - [number]
(Get to configuring multiple interfaces)

interface [vlan-id]
int
(Get to configuring a vlan)

line console 0
(Get to cobfiguring the console)

line vty 0 15
(Get to configuring the vty lines)

2. Short Cuts:
Ctrl keys - Press and hold Ctrl key and press the specified letter key

Escape sequences - press and release Esc key and then press the letter key

Line Editing:
Tab - completes abbreviated commands and parameters

Backspace - removes the character left of the cursor

Ctrl-D - erases the caracter at the cursor

Ctrl-K - erases all characters from the cursor to the command line

Esc D - erases all characters from the cursor to the end of the word

Ctrl-U or Ctrl-X - erases all characters from the cursor back to the beginning of the command line

Ctrl-W - erases the word to the left of the cursor

Ctrl-A - moves the cursor to the beginning of the line

Left Arrow or Ctrl-B - moves the cursor one character to the left

Esc B - moves the cursor back one word to the left

Esc F - moves the cursor forward one word to the right

Right Arrow or Ctrl-F - moves the cursor one character to the right

Ctrl-E - moves the cursor to the end of the command line

Up Arrow or Ctrl-P - shows recently used commands, starting with the last used

Down Arrow - goes through recent commands to the more recent commands

Ctrl-R or Ctrl-I or Ctrl-L - redisplays the system prompt and command line after a console message is received

At the "-----More----" Prompt:
Enter Key - displays the next line

Space Bar - displays the next screen

Any Key - ends the display string, returning to priviledged EXEC mode

Break Keys:
Ctrl-C - returns to priviledged EXEC mode or if in setup mode to command prompt

Ctrl-Z - returns to priviledged EXEC mode

Ctrl-Shift-6 - stop a ping or tracerpute prematurely (all-purpose)

3. Switch Configuration:
hostname [hostname]

clock set [15:00:00 31 Jan 2935]

banner motd [your-message]

line console 0
  password [password]
  login

line vty 0 15 (for vty 0 through 15)
  password [password]
  login

boot system [storage-device file-location-path

filename-of-ios]

Boot loader:
(Connect pc through console and unplug switch, when you plug it pack in hold the Mode button)
dir [directory-name] (list files in a directory)

Configuring Ports:
duplex [auto | full | half]
speed [number | auto] (number can be 10, 100, 1000)
(Duplex and speed go together, 10 and 100 can do either full or half duplex, while 1000 can only do full duplex) (This is for 10/100/1000 ports)

Configuring auto-MDIX:
(automatic medium-dependant interface crossover)
mdix auto (must set speed and duple to auto as well)

Switchport Commands:
switchport mode [access | trunk]
switchport access vlan [vlan-id]
switchport trunk allowed vlan [vlan-id]
switchport trunk encspsulation dot1q

Port Security:
switchport port-security
(Static secure mac addresses)
switchport port-security mac-address [mac-address]
(Dynamic secure mac addresses)
(Sticky secure mac addresses)

switchport port-security mac-address sticky
{mac-address}
(Violation mode)
switchport port-security violation [protect |
resrict | shutdown]
(Maximum addresses)
switchport port-security maximum [number]

4. Router Configuration:
hostname [hostname]

clock set [15:00:00 31 Jan 2935]

banner motd [your-message]

line console 0
  password [password]
  login

line vty 0 15 (for vty 0 through 15)
  password [password]
  login

5. Routing Commands:
IPv4:
Static Route:
ip route [network-mask] [next-hop-ip | exit-interface]

Default Static Route
ip route 0.0.0.0 0.0.0.0 [exit-interface | next-hop-ip]

IPv6:
Default Static ipv6 Route:
ipv6 route ::/0 [ipv6-addr | interface-id]

Static IPv6 Route:
ipv6 route [ipv6-network-addr/slash-notation] [ipv6 addr | interface-id]

OSPF Routing:
router ospf [number]
network [net-addr] [wildcard-mask] area 0
default-information originate (advertise a deault route in ospf)

6. IPv4 and IPv6 Commands:
IPv4:
ip address [ip-address] [subnet-mask]
ip addr

ip default-gateway [router-address] (for switches)

no ip domain-lookup

ping [ip-address]

traceroute [ip-address]

IPv6:

Enable ipv6:
ip unicast-routing

ipv6 address [ipv6-address]/[prefix-length]
{link-local | eui-64}

ipv6 enable (generate a link local address without
a global unicast)

ping ipv6 [ipv6 addr]

7. General Commands:
enable (get to privileged exec mode)
en

disable

configure terminal (get to global exec)
conf t

shutdown (turns off a port)

no shutdown (turns a port on)
no shut

exit

end

reload (gets rid of the running config and replaxes it

with the startup config)

terminal length [number]

terminal history size [number]

interface [type] [number]
int
interface range [type]/[first number] - [last-number]

interface loopback [number]

description [description]
des

ping [ip-address]

ping ipv6 [ipv6-address]

traceroute [ip-address]

clock rate [number]

copy running-config startup-config
copy run start

erase startup-config

clock set [15:00:00 31 Jan 2935]

banner motd [your-message]

hostname [Switch1]

service password-encryption

enable secret [password]

line console 0
 password [password]
 login

line vty 0 15 (for vty 0 through 15)
 password [password]
 login

?

ping (extended (at privileged exec without a destination address))

ping ipv6 (extended (same as ping extended))

traceroute (extended (same as ping extended))

8. Security Commands:
autosecure (baseline command)

enable secret [password]

service password-encyption
(Encypts passwords)

security password min-length [number]
(Sets minimum length for passwords)

login block-for [seconds] attempts [number of failed attempts] within [seconds]
  Example: login block-for 120 attempts 3 within 60
(Blocks login for 120 seconds if there are 3 failed attempts in 60 seconds)

line console 0
  password [password]
  exec-timeout [minutes]
  login

line vty 0 15
  password [password]
  exec-timeout [minutes]
  login
(disconect idle users in __ minutes)

terminal monitor

terminal no monitor

9. Vlan Commands:
Configuring:
vlan [vlan-id]

name [vlan-name]
end

Assigning:
Interface [id]
switchport mode access
switchport access vlan [id]
end

Trunks:
switchport mode trunk
switchport trunk native vlan [id]
switchport trunk allowed vlan [id]

Inter Vlan routing:
switchport access vlan [vlan-id]

Adding an ip address to a vlan:
interface vlan [vlan-id]
ip address [ip addr] [subnet mask]

Encapsulation:
(Used to separate an interface into multiple ones on different vlans)
(Requires vlans)

interface g0/0.10
encapsulation dot1q [vlan-id]
ip address [ip-address] [subnet-mask]

10. DHCP Commands:

Turn on dhcp if turned off:
service dhcp

Exclude Adresses:
ip dhcp excluded-address [first-ip-address] [last-ip-address]

Configure basic DHCP server:
ip dhcp pool [pool-name]
  network [network-address] [subnet-mask]
  default-router [default-gateway]
  dns-server [dns-address]
  domain-name [example.com]

DHCP relay:
ip helper-address [dhcp-address]

Router as dhcp client:
ip address dhcp

DHCPv6:
(SLAAC) (default)
no ipv6 nd managed-config-flag
no ipv6 nd other-config-flag
(Stateless DHCPv6)
ipv6 nd other-config-flag
(Stateful DHCPv6)
ipv6 nd managed-config-flag

Config Stateless DHCPv6 on Router:
ipv6 unicast-routing
ipv6 dhcp pool [pool-name]
  dns-server [dns-address]
  domain-name [example.com]
interface [type] [number]
  ipv6 dhcp server [pool-name]
  ipv6 nd other-config-flag

Config Router as Stateless DHCPv6 client:
ipv6 enable
ipv6 address autoconfig

Configure Stateful DHCPv6 on Router:
ipv6 unicast-routing
ipv6 dhcp pool [pool-name]
  address prefix [prefix/length] <lifetime [valid-lifetime preferred-lifetime | infinite]>
  dns-server [dns-address]
  domain-name [example.com]
interface [type] [number]
  ipv6 dhcp server [pool-name]
  ipv6nd managed-config-flag

Configure Router as Stateful DHCPv6 Client:
ipv6 enable
ipv6 address dhcp

DHCPv6 Relay Agent:
ipv6 dhcp relay destination [dhcp-address]

11. Access Lists Commands:

Permit:
access-list [access-list-number] permit [source]
<source wildcard> <log>

Deny:
access-list [access-list-number] deny [source]
<source wildcard> <log>

Remark:
access-list [access-list-number] remark [explanation]

For hosts:
access-list [access-list-number] [permit | deny]
host [host ip address]

Named ACLs:
ip access-list [standard | extended] [access-list-name]
  [permit | deny | remark] [source] <source
wildcard> <log>

Application of ACLs:
interface [type] [number]
   ip access-group [access-list-number |
access-list-name] [in | out]

Modifying ACLs:
show access-lists [name | number]
access-lists standard [name | number]

no [sequence-number]
(Type replacement ACL)

VTY Access:
line vty [number]
access-class [number | name] [in | out]

12. Network Access Translation (NAT) Commands:
Static NAT:
ip nat inside source static [local-ip-address] [global-ip-address]
interface [type] [number]
ip nat [inside | outside]

Dynamic NAT:
ip nat pool [pool-name] [start-ip-address] [end-ip-address] <netmask [netmask] | prefix-length [prefix-length]>
(Create ACL only permitting those addr)
ip nat inside source list [access-list-number] pool [pool-name]
interface [type] [number]
ip nat [inside | outside]

PAT:
Config with Address Pool:
ip nat pool [pool-name] [start-ip-address] [end-ip-address] <netmask [netmask] | prefix-length [prefix-legnth]>
(Create ACL for those addr)

ip nat inside source list [access-list-number] pool [pool-name] overload
interface [type] [number]
  ip nat [inside | outside]

Config for Single Address:
(Create ACL for addr)
ip nat inside source list [access-list-number] interface [type] [number] overload (interface is outside interface)
interface [type] [number]
  ip nat [inside | outside]

Port Forwarding:
ip nat inside source [static [tcp | udp] [local-ip local-port global-ip global-port]] [extendable]

13. SSH Commands:
Configure IP domain:
ip domain-name [example.com]

Generate RSA key pairs:
ip ssh version 2
crypto key generate rsa general-keys modulus [360-2048]
(Modulus determines size of the key. Larger key means more secure, but takes longer to encrypt and decrypt. The minimum recommended modulus is 1024)

crypto key zeroize rsa (delete RSA key pair)

Configure user authentication:
username [username] secret [password]

Configure vty lines:
line vty [number] [number]
transput inupt ssh (prevents non-ssh)
login local (require local authentication)

Enable SSH Version 2
ip ssh version 2

14. VTY Commands:
line vty [number] [number]

transport input [protocol (ssh)] (Enable the protocol for vty lines)

login local (require local authentication)

password [password]
login

15. Cisco Discovery Protocol Commands:
no cdp run (disable globally)
cdp run (enable globally)

On an Interface:
no cdp enable
cdp enable

16. Show Commands:

Filters: show | [section | include | exclude | begin] [filter words]

Configuration:
show run (shows running config)
show running-configuration | section []
show running-config
show running-config interface [interface-id]
show startup-configuration
show startup-config

Random:
show clock
show boot
show mac address-table {interface [interface]}
show mac-address-table
show flash
show version
show history
show protocols

ARP:
show arp

Nat:
show ip nat translations (shows active nat translations)
    verbose (add to end of command for more info)
ip nat translation timeout [timeout-seconds]

show ip nat statistics (shows info about total number of active translations, nat config parameters, number of addresses in the pool, and number of addresses allocated)

IP:
show ip
show ip route
show ip interface
show ip int
show ip interface brief
show ip int brief
show ip arp
show ip protocols

IPv6:
show ipv6
show ipv6 interface
show ipv6 interface brief
show ipv6 route

Interface:
show running-configuration interface [interface-id]
show [interfaces | interface] {interface-id} {switchport | trunk}
show ip interface {status}
show interfaces {interface-id} switchport
show interfaces
show interface [interface-id]

Vlan:
show vlan brief
show vlan
show interfaces vlan [id]
show vlan summary
show vlan name [name]
show interfaces {id} trunk

Access Lists:
show access-lists

SSH:
show ip ssh (verify ssh support)
show ssh

DHCPv4:
show ip dhcp binding
show ip dhcp server statistics
show ip dhcp conflict

DHCPv6:
show ipv6 dhcp conflict

Stateless DHCPv6:
show ipv6 dhcp pool

Stateful DHCPv6:
show ipv6 dhcp pool
show ipv6 dhcp binding

DHCPv6 Relay agent:
show ipv6 dhxp interface

auto-MDIX:
show controllers ethernet-controller [interface] phy
| include Auto-MDIX

Port Security:
show port-security interface [interface-id]
show port-security address

Cisco Discovery Protocol (CDP):
show cdp neighbors
show cdp neighbors detail

17. Debugging Commands:
debug [_____] (don't just put in debug, add in something to determine what you want to debug)
debug ? (To see options)

To turn off a specific debugging feature:
no debug [_____]
undebug

DHCP:
debug ip packet [access-list-number]
drbug ip dhcp server events

DHCPv6:
debug ipv6 dhcp detail

NAT:
debug ip nat
debug ip nat detailed

IP:
debug ip [___]

18. Clear Commands:
NAT:
clear ip nat statistics
clear ip nat translation

ACL:
clear access-list counters

19. Subnet Mask Cheat Sheet:
Class A is 255.0.0.0
Class B is 255.255.0.0
Class C is 255.255.255.0

Ipv4 Address Ranges:
1-126 class a
10-10.31 class a private
127 loopback
128-191 class b
172.16 class b private
192-223 class c
192.168 class c private

Class A:
/8 = 255.0.0.0

Class B:
/16 = 255.255.0.0
/17 = 255.255.128.0
/18 = 255.255.192.0
/19 = 255.255.224.0
/20 = 255.255.240.0
/21 = 255.255.248.0
/22 = 255.255.252.0
/23 = 255.255.254.0

Class C:
/24 = 255.255.255.0
/25 = 255.255.255.128
/26 = 255.255.255.192
/27 = 255.255.255.224
/28 = 255.255.255.240
/29 = 255.255.255.248
/30 = 255.255.255.252

Number of Hosts:
/16 - 65534
/17 - 32766
/18 - 16382
/19 - 8190
/20 - 4094
/21 - 2046
/22 - 1022

/23 - 510

/24 - 254
/25 - 126
/26 - 62
/27 - 30
/28 - 14
/29 - 6
/30

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