**Cisco Modes**

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| **Description** | **Keyboard short cut** |
| User mode | Switch> |
| Enter Privilege mode | Switch>enable |
| Privileged mode | Switch# |
| Enter configuration mode | Switch#configure terminal |
| Global Config mode | Switch(config)# |
| Enter Interface mode | Switch(config)#interface fa0/1 |
| Interface mode | Switch(config-if) |
| Return to global configuration | Switch(config-if)exit |
| Exit Global Config mode | Switch(config)#exit |
| Return to use mode | Switch#disable |
| Logout | Switch>exit |

**Keyboard Shortcuts**

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| **Description** | **Keyboard shortcut** |
| Recall Previous command | Up arrow or <Ctrl> p |
| Recall Next command | Down arrow or <Ctrl> n |
| Beginning of command | <Ctrl> a |
| End of command | <Ctrl> e |
| Delete input | <Ctrl> d |
| Exit Configuration Mode | <Ctrl> z |
| Complete command | TAB |

**Device Configuration**

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| **Description** | **Commands** |
| Configure device system name | Switch(config)#hostname sw1 |
| Sets the encrypted enable password | Switch(config)#enable secret cisco |
| Sets the unencrypted enable password | Switch(config)#enable password cisco |
| Enable password encryption on all clear text password within the configuration file | Switch(config)#service password-encryption |
| Configure a Message Of The Banner, with an ending character of $ | Switch(config)#banner motd $ |
| Assign IP address to vlan | Switch(config)#int vlan 1  Switch(config-if)#ip addr 172.22.1.11  255.255.255.0 |
| Assign Default gateway, note the mode | Switch(config)#ip default-gateway 10.1.1.1 |
| Select one interface | Switch(config)#int fa0/1 |
| Select a range of interfaces (version dependent) | Switch(config)#int range fa0/1 – 12 |
| Set the interface description | Switch(config-if)#description |
| Add vlan using config mode | switch(config)#vlan 11  switch(config-vlan)#name test |
| Configure Interface fa0/1 @ speed 100 Mbps and full duplex | Switch(config-if)#speed 100  Switch(config-if)#duplex full |
| Assign interface to vlan | switch(config-if)#switchport access vlan 11 |
| Enable Port Security. | Switch(config-if)#switchport mode access  Switch(config-if)#switchport port-security  Switch(config-if)#switchport port-security mac-address sticky |
| Disable Interface | Switch(config-if)shutdown |
| Enable Interface | Switch(config-if)no shutdown |
| Configures 5 Telnet sessions each with a password of ‘cisco’ | Switch(config)#line vty 0 4 Switch(config-line)#login Switch(config-line)#password cisco |
| Enable and define console password of ‘cisco’ | Switch(config)#line con 0 Switch(config-line)#login Switch(config-line)#password cisco |
| Synchronize console messages (keep what you have typing on the screen) | Switch(config-line)#logging synchronous |
| Set the time zone and automatically adjust | Switch(config)#clock time zone gmt 0 Switch(config)#clock summer-time gmt recurring |
| Sets the switch priority for the vlan. This combined with the switch mac address creates the switch BID | Switch(config)#spanning-tree vlan 1 priority 4096 |
| Enables portfast | Switch(config)#int fa0/1  Switch(config-if)#spanning-tree portfast |
| Enables RSTP. Other options are, PVST and MST | Switch(config)#spanning-tree mode rapid-pvst |
| Creates a vlan. Note this now done in config mode not vlan database. Also note the ‘int vlan’ command does NOT create vlans | Switch(config)#vlan 2  Switch(config-vlan)#name sales |
| Assign an interface to vlan 2 | Switch(config-if)#switchport access vlan 2 |
| Unconditionally forces an interface into trunking. Other options are access and dynamic | Switch(config-if)#switchport mode trunk |
| Manually assign a switch to a VTP domain. A switch will automatically become part of a VTP domain if it’s currently in the ‘null’ domain and receives a VTP frame | Switch(config)#vtp domain lab |
| Changes the VTP mode from the default ‘server’ mode to client mode. In client mode no changes can be made | Switch(config)#vtp mode client |
| Enable the http server to SDM can be used | Router(config)#ip http server |
| Defines a username and password. The list can be used for many things from PPP authentication to user access | Router(config)#username sue password cisco |
| Defines a local host file. Like  /etc/hosts in Unix | Router(config)#ip host mypc 10.1.1.3 |
| Disables DNS lookup. Useful when a command has been miss typed | Router(config)#no ip domain-lookup |
| Sets the logical (not physical) bandwidth of interface. This is used by routing protocols, SNMP queuing etc | Router(config)#int s0 Router(config-if)#bandwidth |
| Sets the physical clock | Router(config-if)#clock rate 64000 |
| Set the serial interface WAN encapsulation. Other options are PPP or frame-relay | Router(config-if)#encapsulation hdlc |
| Authentication on PPP is optional. This command enable chap on the interface. Other option PAP | Router(config-if)#ppp authentication chap |
| Defines the type of LMI being used. If left un- configured the correct LMI type should be automatically detected | Router(config-if)#frame-relay lmi-type cisco |
| Defines a static route. Renumber static routes have an admin distance of 1.  Therefore will override any dynamic routing. | Router(config)#ip route 50.0.0.0 255.0.0.0  10.1.2.1 |
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| Enables RIP version 1 on all LOCAL interfaces which have a 10.x.x.x address  Enables RIP version 2 | Router(config)#router rip  Router(config-router)#network 10.0.0.0  Router(config-router)#version 2 |
| Enable the router to provide a DHCP service. | Router(config)#ip dhcp pool MYPOOL  Router(dhcp-config)#network 10.1.1.0  255.255.255.0  Router(dhcp-config)#default-router 10.1.1.1 Router(dhcp-config)#exit  Router(config)#ip dhcp excluded-address  10.1.1.1 10.1.1.99 |
| Changes the config register which controls what the router does when the router boots | Router(config)#config-register 0x2102 |
| Creates a logical sub interface below the physical interface  Enables 802.1q trunking on the interface  Define the ip address | Router(config)#int fa0/0.1  Router(config-subif)#encapsulation dot1Q 1  Router(config-subif)#ip address 10.1.1.1  255.255.255.0 |
| Enable OSPF on any local interface which starts with the ip address 10.1.x.x. Note the wildcard mask | Router(config-)#router ospf 1  Router(config-router)#network 10.1.0.0  0.0.255.255 area 0 |
| EIGRP can be configured in a similar way to RIP or the mask option could be used | Router(config)#router eigrp 1  Router(config-router)#network 172.16.0.0 Or  Router(config-router)#network 172.16.2.0  0.0.0.255 |
| Defines a standard ACL. Standard ACL use number 1-99 | Router(config)#access-list 1 permit  172.16.1.1 |
| Defines an Extended ACL. The first address is the source IP address | Router(config)#access-list 101 deny tcp host  172.16.1.1 host 172.16.2.1 eq telnet Router(config)#access-list 101 permit ip any any |
| Use the group command to attach an ACL to an interface.  is used under an interface if the ACL is to filter traffic | Router(config)#interface fa0/0  Router(config-if)#ip access-group 1 out |
| An example using named ACL instead of numbers | Router(config)#ip access-list extended my\_list  Router(config-ext-nacl)# deny tcp host  172.16.1.1 host 172.16.2.1 eq ftp  Router(config-ext-nacl)# permit ip any any |
| Attaching a named ACL to an interface | Router(config)#int fa0/0  Router(config-if)#ip access-group my\_list in |
| Configuring a static NAT to allow a server to be access via the Internet, using the IP address on interface s0/0/1 | Router(config)#ip nat inside source static  10.1.1.2 interface s0/0/1 |
| Defining interface which NAT takes place between | Router(config)#int fa0/0.1  Router(config-if)#ip nat inside |
| Enables RIPng | Router(config)#ipv6 unicast-routing  Router(config)#ipv6 router rip ccna |
|  | Router(config)#int s0/0/0  Router(config-if)#ipv6 rip ccna enable |

**Privilege Commands**

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| **Description** | **Commands** |
| Manually starts the setup dialog which is automatically invoked when the device starts with no config | Switch#setup |
| Displays the config held in DRAM. Which is lost if not copy run start command is not used | Switch#show running-config |
| Displays the NVRAM (Non volatile) config. | Switch#show startup-config |
| Saves the config. Without this command all changes/configuration will be lost. | Switch#copy running-config startup-config |
| Saves the running config to a TFTP server | Switch#copy running-config tftp |
| Copies IOS files to a TFTP server | Switch#copy flash tftp |
| Copies files from a TFTP server the device flash | Switch#copy tftp flash |
| Erase the config held in NVRAM. If this is followed with the reload command all configuration is lost | Switch#erase startup-config |
| Reboots the device | Switch#reload |
| Abort sequence | <Shift> <Ctrl> 6 |
| Suspend Telnet Session | <Shift> <Ctrl> 6(then let all keys go, then)x |
| Show the current sessions. The one with a \* is your active session | Switch#show sessions |
| Forcible closes a telnet session | Switch#disconnect |
| Set the device local clock.  Note this is not done in config mode | Switch#clock set 10:00:00 April 2 2008 |
| Display the IOS version along with other useful info  e.g. sys uptime, config register etc | Switch#show version |
| Displays the file contents of the flash | Switch#show flash |
| Displays the clock | Switch#show clock |
| Displays the users currently logged on | Switch#show users |
| By default displays the last 10 commands | Switch#show history |
| Displays the ARP cache | Switch#show arp |
| Displays the spanning tree status on vlan 1 | Switch#show spanning-tree vlan 1 |
| Lists all the configured vlans | Switch#show vlan |
| Displays VTP info such as VTP mode, VTP domain, and VTP counter. | Switch#sh vtp status |
| Ping selected address | Switch#ping 10.1.1.1 |
| Extended ping. Must be in privilege mode | Switch#ping |
| Display the interface status | Switch#show int fa0/1 |
| Displays the vlan status and the IP address VLAN 1 (often the management vlan) | Switch#show interfaces vlan 1 |
| Displays a list of CDP neighbors | Switch#show cdp neighbors |
| Extended information on the above | Switch#show cdp neighbors details |
| Display CDP packets as they arrive | Switch#debug cdp packets |
| Display ping packets as they arrive | Switch#debug icmp packets |
| Display switch MAC Addresses table. These entries are learnt from the source mac address in the Ethernet frames | Switch#show mac address-table |
| Displays the interface operational status and IP addresses for all router interfaces | Router#show ip interface brief |
| Displays all the configured routing protocols | Router#show ip protocols |
| Displays the IP routing table | Router#show ip route |
| Displays the NAT translations | Router#show ip nat translations |
| Displays the physical cable DTE/DCE, x.21, V.35,  RS232 configuration | Router#show controllers s 0 |
| Displays the end-to-end status. Recall that ‘show interface’ does not | Router#show frame-relay pvc |
| Displays the type of LMI and the number LMI frames | Router#show frame-relay lmi |
| Displays the frame relay inverse ARP table | Router#show frame-relay map |
| To become neighbors both the local and remote interface must be correctly configured. | Router#show ip ospf neighbor |
| If adjacent routers don’t become neighbors. Then use the command to check the local router interface is configured correctly | Router#show ip ospf interface |
| Same information as the above OSPF commands but with EIGRP. Remember that AS numbers MUST match | Router#show ip eigrp neighbor |
| Same information as the above OSPF commands but with EIGRP | Router#show ip eigrp interface |
| IPv6 ping. Recall that :: means all zero in between | Router#ping 2000:1000:500:3::1 |