**Summary of some basic CCNA commands from semesters 1 and 2.**

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| **Command** | **Description** | |
| Would you like to enter the initial configuration dialog? [yes/no]: | **NO –** always answer no, else this will go into a setup wizard that will try configure various settings on the router. | |
| Would you like to terminate auto install? [yes/no]: | **YES** | |
| **If you don’t get asked the previous questions when the router starts, it means that something is configured on the router that hasn’t been deleted. You should make sure you delete the start-up configuration file and reload the router.** | | |
| Router> | **>** Symbols means we are in user mode, we can’t configure anything | |
| Router> Enable | Will bring us into privileged mode, where we can change and configure the router settings. | |
| Router# | # symbol means we are now in privileged mode and can change settings etc. | |
| **Lowest level privileged mode commands** | | |
| Router# erase start | Deletes the start-up configuration file | |
| Router# reload | Reloads the router, we need to do this after we’ve erased start | |
| Router# copy run start | Save our settings. Copies running file to start-up file | |
| Router# show run | Shows us our current running configuration, useful for troubleshooting | |
| Router# show ip route | Shows us our current routing table, useful for troubleshooting | |
| Router# show ip interface brief | Shows the status of each of our interfaces, useful for troubleshooting | |
| Router# ? | Shows all available commands, useful if you’re not sure of command | |
| Router# c? | Shows all commands starting with c, useful if you’re not sure of command | |
| Router# clock ? | Shows all options for the clock command, useful if you’re not sure of command | |
| Router# configure terminal | Changes us into the global configuration mode where we can make changes to current router settings. Prompt will change to *Router(config)#* to show us we are in global configuration mode | |
| Router# exit | Exits out of a particular command level | |
| **Global Configuration level commands** | | |
| Router(config)# hostname LAB\_1 | | Changes the hostname, will cause our prompt to change to the new host name i.e. LAB\_1(config)# |
| Router(config)# banner motd #display this message# | | Displays a message of the day banner when the router starts up |
| Router(config)#enable password topsecret | | Sets the enable password to “topsecret”. This means anyone try to get into privileged mode (enable mode) will be asked for a password |
| Router(config)#enable secret topsecret | | Sets the enable password to “topsecret”. Similar to last command, but this version stored the password encrypted, the other way doesn’t. So this method is more secure |
| Router(config)#service password-encryption | | Will encrypt all passwords that where being stored as plaintext. So adds so encryption |
| Router(config)#line vty 0 4 | | Goes into line vty mode. This lets us change settings that effect **remote access** to the router. 0 4 means 5 connections, 0,1,2,3,4 |
| Router(config)#line con 0 | | Goes into line mode. Lets us change settings effecting the console line, so all local management **access to console port.** |
| Router(config)#line aux 0 | | Goes into AUX mode. Lets us change settings for anyone trying to connect remotely through a **modem to the AUX port**. |
| Router(config)#interface fa0/0 | | Goes into interface mode, allowing us change some settings for fa0/0 |
| Router(config)#interface s0/0 | | Goes into interface mode, allowing us change some settings for s0/0 |
| Router(config)#interface lo1 | | Goes into interface mode, allowing us change some settings for loopback 1 |
| Router(config)#router rip  Router(config)#router OSPF 1  Router(config)#router EIGRP 1 | | Enters the routing protocol config mode |
| **Line Con configuration level commands** | | |
| Router(config-line)# | | Prompt changes to let us know we are in one of the line modes. |
| Router(config-line)# password topsecret | | Sets the password for the console port. Anyone trying to access router through this port will need this password  **Same for line vty and line aux modes** |
| Router(config-line)#login | | We need to use the login command with the password command before it kicks in and takes effect.  **Same for line vty and line aux modes** |
| Router(config-line)#logging synchronous | | Stops the status messages that keep popping up from effecting what we’re tying in at the command line. Worth setting up because it can be a pain putting up with the status messages all the time |
| **Interface configuration level commands** | | |
| Router(config-if)# | | Prompt changes to show us that we’re in one of the interface configuration modes. |
| Router(config-if)# ip address 192.168.100.1 255.255.255.0 | | Sets the ip address and mask on this interface  **Same for serial, loopback and Ethernet ports** |
| **If after you enter the ip address command you get a error message “Bad Mask” then you have more than likely used the network or broadcast IP address instead of the host IP address.**  **If after you enter the ip address command you get an error message “overlapping” then you have more than likely set one of your mask wrong on either this interface or one that you have already configured** | | |
| Router(config-if)# no shutdown | | Will bring the interface up, we need to do this on all interfaces we’re using to make them active  **Same for serial and Ethernet ports, loopbacks are always up by default no need for this command on loopbacks** |
| Router(config-if)# clock rate 64000 | | Sets the clock rate to 64000 on the DCE end of a serial connection. If in doubt set clock rate on both ends of serial link to be sure.  **The “Router#sh controllers” command can be used to see if your serial is the DCE or DTE end** |
| **Router RIP configuration level commands** | | |
| Router(config-route)#network 192.168.2.0 | | You should enter one network statement for each directly connected network.  **Remember to use the network address not the host address** |
| Router(config-route)#version 2 | | Set router to use version 2 (Classful) supports vlsm, RIP version 1 doesn’t support vlsm |
| Router(config-route)#no auto summary | | Should be entered if your using rip version two to avoid any problems |
| **Router OSPF configuration level commands** | | |
| Router(config-route)#network 192.168.1.0 0.0.0.255 area 0 | | Again one network statement for each connected network.  **Remember to use wildcard mask and to include the area 0 bit at the end.** |
| **Creating VLANs** | | |
| Switch# vlan database  Switch(vlan)# vlan 10 name Campus  Switch(vlan)# exit  Switch# config t  Switch(config)# vlan 10  Switch(config-vlan)# name Campus  Switch(config-vlan)# exit | | Where we create vlans depends on the version of the switch we’re using.  Older switches will use the vlan database method shown first on the left, while newer witches will create vlan at the config level. |
| **Management VLANs** | | |
| Switch(vlan)# int vlan 99  Switch(vlan)# ip address x.x.x.x m.m.m.m  Switch(vlan)# ip default-gateway x.x.x.x  **We set the virtual interface and IP address in the same local as we create the vlans, so two methods exist, for older switches and newer switches. Like above.** | | We first create a virtual interface (vlan 99). Then we apply an IP address and the default gateway address.  **Remember you must disable the default vlan 1 virtual interface first.**  **Switch(vlan)# int vlan 1**  **Switch(vlan)# shutdown** |
| **Trunk Ports** | | |
| Switch(config)# int fa0/1  Switch(config-if)# switchport trunk encapsulation dot1q  Switch(config-if)# switchport mode trunk | | This sets port 1 as a trunk port and uses DOT1Q encapsulation.  **Some of the newer switches only support DOT1Q and not the older Cisco ISL. On these switches there is no encapsulation command and no need to set it.** |
| **Access Ports** | | |
| Switch(config)# int fa0/2  Switch(config-if)# switchport mode access  Switch(config-if)# switchport access vlan 10 | | Set port 2 as an access port, then add it to VLAN 10 |
| **VTP modes** | | |
| Switch(vlan)# vtp client  Switch(vlan)# vtp domain ITB | | Set VTP mode, (SERVER, CLIENT, TRANSPARENT), and adds the VTP domain.  **Again depending on version of switch this needs to be set in the vlan database mode or config mode depending on how old your switch is.** |
| **Inter-vlan Routing** | | |
| Router# config t  Router(config)# int fa0/0  Router(config-if)# no shutdown  Router(config-if)# int fa0/0.1  Router(config-subif)#encapsulation dot1q 10  Router(config-subif)#ip address x.x.x.x m.m.m.m | | We need to create a sub-interface for each vlan that exists (including management vlan)  Remember to add the vlan number at the end of the encapsulation command.  This IP will be the default gateway for devices on this vlan  **Some routers insist you enter the encapsulation first before it will allow you enter an IP address get into the habit of setting it first always.** |
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