CCNA Network Commands

Device	Mode	Command	Action	Configuration	Notes	Layer
--------------- Switch						
Switch	Conf	**interface FastEthernet 0/14**	Moves to interface configuration mode.	Switch Setup		
Switch	Conf	**interface GigabitEthernet 0/1**	Moves to configuration mode for a range of interfaces.	Switch Setup		
Switch	Conf	**interface range fastethernet 0/14 - 24**	Moves to configuration mode for a range of interfaces.	Switch Setup		
Switch	Conf	**interface range gigabitethernet 0/1 - 4**	Moves to configuration mode for a range of interfaces.	Switch Setup		
Switch	Conf	**interface range fa 0/1 - 4 , 7 - 10**	Moves to configuration mode for a range of interfaces.	Switch Setup		
Switch	Conf	**interface range fa 0/8 - 9 , gi 0/1 - 2**	Moves to configuration mode for a range of interfaces.	Switch Setup		
Switch	int	**speed 10**	Sets the port speed on the interface.	Switch Setup		
Switch	int	**speed auto**	Sets the port speed on the interface.	Switch Setup		
Switch	int	**duplex half**	Sets the duplex mode on the interface.	Switch Setup		
Switch	int	**duplex full**	Sets the duplex mode on the interface.	Switch Setup		
Switch	int	**duplex auto**	Sets the duplex mode on the interface.	Switch Setup		
Switch	int	**no shutdown**	Enables or disables the interface.	Switch Setup		
Switch	int	**shutdown**	Enables or disables the interface.	Switch Setup		
Switch	int	**show interface status**	Shows the interface status of all ports.	Switch Setup		
Switch	int	**show ip interface brief**	Shows the line and protocol status of all ports.	Switch Setup		
Switch	#	**show mac address-table**	displays the mac address table		displays known mac addresses	
Switch > VLANs - VLANs operate at layer 2, but their utility comes into play when integrated with a layer 3 solution.						Layer 2
Switch	#	**show vlan**	Shows a list of VLANs on the system and ports	VLAN	VLANs operate at layer 2, but their utility comes into play when integrated with a layer 3 solution.	
Switch	#	**show vlan id 10**	Shows information for a specific VLAN.	VLAN	Replace 10 with vlan id	
Switch	#	**show vlan brief**	Shows a list of VLANs on the system and ports	VLAN		
Switch	Conf	**vlan 10**	Create vlan, number is irrelevant	VLAN		
Switch	int	**name Sales**	This name is displayed when you show vlans	VLAN		
Switch	int	**interface f0/1** **switchport access vlan 10**	This assigns workstation to VLAN 10	VLAN	This assigns workstation to VLAN 10: * f0/1 - select workstation port * and 10 is number of VLAN you want to assign to it.	
Switch	int	**interface range f0/2 - 3** **switchport access vlan 11**	This assigns range of workstations to VLAN 11	VLAN		

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Switch	int	**switchport access vlan [1-4094]**	Assigns ports to the VLAN.	VLAN	If you assign a port to a VLAN that does not exist, the VLAN is created automatically.	
Switch	int	**no vlan [1-4094]**	Deletes a VLAN.	VLAN	When you delete a VLAN, all ports assigned to the deleted VLAN remain associated with it and are, therefore, inactive. After a VLAN is deleted, you must reassign its ports to an appropriate VLAN.	
Switch	int	**switchport priority extend cos [0-7]**	Sets the priority for VoIP traffic	VLAN		
Switch > VLAN > Trunks						
Switch	int	**switchport mode trunk**	to configure a switch interface as a trunk	VLAN > Trunk	ex. > int f0/24 > switchport mode trunk	
Switch	Conf	**switchport trunk allowed vlan remove 11**	Remove VLAN 11 from trunk	VLAN > Trunk		
Switch	#	**show int trunk**	show trunks	VLAN > Trunk	Show VLAN will not show the trunks, must use this command to see them	
Switch	#	**show interface fa0/1 trunk**	show trunks	VLAN > Trunk	Show VLAN will not show the trunks, must use this command to see them	
Switch	#	**switchport trunk encapsulation dot1q**	sets trunking protocol	VLAN > Trunk	Sets the trunking protocol or allows the trunking protocol to be negotiated.	
Switch	#	**switchport trunk encapsulation isl**	sets trunking protocol	VLAN > Trunk	Sets the trunking protocol or allows the trunking protocol to be negotiated.	
Switch	#	**switchport trunk encapsulation negotiate**	sets trunking protocol	VLAN > Trunk	Sets the trunking protocol or allows the trunking protocol to be negotiated.	
Switch	#	**switchport trunk native vlan [vlan_id]**		VLAN > Trunk	Configures the VLAN that is sending and receiving untagged traffic on the trunk port when the interface is in 802.1 Q trunking mode.	
Switch	#	**switchport mode access**	disables trunking config	VLAN > Trunk	Disables trunking configuration on the port. The port is set to the access mode unconditionally and operates as a non-trunking, single VLAN interface that sends and receives un-tagged frames.	
Switch > VLAN > Spanning Trees						STP = Layer 2 network protocol
Switch	#	**show mac address-table**	displays the mac address table		displays known mac addresses	
Switch	#	**show spanning-tree**	see if spanning-tree is running and how to get to dif locations	VLAN > STP		
Switch	#	**show spanning-tree vlan [1-4094] root**	Shows information about the root bridge for a specific VLAN	VLAN > STP	nformation shown includes: The root bridge ID, including the priority number and the MAC address. The cost to the root bridge from the local switch. The local port that is the root port.	

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Switch	#	**show spanning-tree vlan [1-4094] bridge**	Shows spanning tree configuration information about the local switch for the specified VLAN.	VLAN > STP	Information includes the local bridge ID, including the priority and MAC address.	
Switch	Conf	**spanning-tree mode {pvst|rapid-pvst|mst}**	Sets the spanning tree mode.	VLAN > STP	PVST+ and Rapid PVST+ are the same except that Rapid PVST+ uses a rapid convergence based on the 802.1 w standard. To provide rapid convergence, Rapid PVST+ deletes learned MAC address entries on a per-port basis after receiving a topology change.	
Switch	Conf	**spanning-tree vlan [1-4094] root primary**	Forces the switch to be the root of the spanning tree.	VLAN > STP		
Switch	Conf	**spanning-tree vlan [1-4094] cost [1 - 200000000]**	Sets the cost manually.	VLAN > STP	The cost range value depends on the path-cost calculation method For the short method the range is 1 to 65536. For the long method the range is from 1 to 200000000.	
Switch	Conf	**spanning-tree vlan [1-4094] priority [0-61440]**	Sets the bridge priority number manually	VLAN > STP	The priority value ranges between 0 and 61440. Each switch has the default priority of 32768. Priority values are set in increments of 4096. If you enter another number, your value will be rounded to the closest increment of 4096, or you will be prompted to enter a valid value. The switch with the lowest priority number becomes the root bridge.	
Switch	int	**spanning-tree portfast**	Enables PortFast on the interface	VLAN > STP	For edge-type interface. When the PortFast feature is enabled, the interface changes directly from a blocking state to a forwarding state without making the intermediate spanning-tree state changes.	
Switch	Conf	**spanning-tree uplinkfast**	Enables UplinkFast	VLAN > STP	Enables UplinkFast to accelerate the choice of a new root port when a link or switch fails or when the spanning tree reconfigures itself.	
Switch	Conf	**no spanning-tree vlan [1-4094]**	Disables spanning tree on the selected VLAN.	VLAN > STP		
-------------- Routers						
Router	int	**clock rate**	Sets the clock rate on the DCE serial interface.	Serial	The rate should be set in bits per second (bps). In the back-to-back router lab configuration, if the clock rate command is not issued on the DCE, clocking is not provided and the interface status between the two routers will not change to up.	

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Router	int	**ip address [address] [mask]**	Assigns an IP address and subnet mask to the interface	Serial	int s0/0/0 ip address 192.168.2.17 255.255.255.252	
Router	int	**encapsulation ppp** **encapsulation frame-relay**	Modifies the router encapsulation method	Serial	Encapsulation method should match for both routers	
Router	#	**sh interfaces**	Displays all interface configurations including serial connection encapsulation and bandwidth	Interfaces		
Router	#	**sh ip int brief**	Displays consolidated message about each IP	IP	This includes its IP address, line and protocol status, and how the address was configured (DHCP or Manual).	
Router	#	**sh run**	Displays clock rate and bandwidth of a serial configuration	Serial		
Router	#	**sh controllers [serial interface]**	Displays the serial interface configuration	Serial	> sh controllers in s0/0/0 Includes the type of serial cable and which end of the cable is connected to the device, DCE or DTE.	
Router	int	**int ser 0/1/0** **ip address 192.168.1.229 255.255.255.0** **no shutdown**	Configure IP and activate	Serial	configures the IP address 192.168.1.229 with a mask of 255.255.255.0 for the first serial interface on the router and activates the interface	
Router	int	**ip nat inside**	Configure NAT to specify which interface is on the internal side	Interfaces		
Router	int	**ip nat outside**	Configure NAT to specify which interface is on the external side	Interfaces		
Router	int	**show ip nat translations**	Display NAT Table			