**Basic Configuration of a Router**

*- Setup and configure the basic router using Topology in the instructor*  *demonstration for ‘Basic Router Setup’*

Hit enter until below is shown;

R1#

R1#

R1#

R1#

R1# configure terminal *or* conf t

R1(config)#hostname WYWM-Lab-1-R1

WYWM-Lab-1-R1(config)#ip domain-name wywm.local

WYWM-Lab-1-R1(config)#username Lab1 privilege 15 secret Lab1

WYWM-Lab-1-R1(config)#line con 0

WYWM-Lab-1-R1(config-line)#login local

WYWM-Lab-1-R1(config-line)#line vty 0 4

WYWM-Lab-1-R1(config-line)#login local

WYWM-Lab-1-R1(config-line)#transport input ssh

WYWM-Lab-1-R1(config-line)#exit

WYWM-Lab-1-R1(config)#service password-encryption

WYWM-Lab-1-R1(config)#crypto key generate rsa modulus 2048

WYWM-Lab-1-R1(config)#interface loopback 10

WYWM-Lab-1-R1(config-if)#ip address 10.0.0.1 255.255.255.255

WYWM-Lab-1-R1(config-if)#exit

WYWM-Lab-1-R1(config)#end

WYWM-Lab-1-R1#copy running-config startup-config

WYWM-Lab-1-R1#show ip interface brief

WYWM-Lab-1-R1#show running-config

**Setup and Configuration of Static Routes**

* Setup and configure the basic router as above for both routers but use the information given in the Topology for Static Routes

WYWM-Lab-2-1-R1#conf t

WYWM-Lab-2-1-R1(config)#interface ethernet 0/0

WYWM-Lab-2-1-R1(config-if)#ip address 172.0.0.1 255.255.255.0

WYWM-Lab-2-1-R1(config-if)#no shutdown

WYWM-Lab-2-1-R1(config-if)#exit

WYWM-Lab-2-1-R1(config)#end

WYWM-Lab-2-1-R1#copy running-config startup-config

WYWM-Lab-2-1-R1#ping 172.0.0.2

Success rate is 100 percent

WYWM-Lab-2-1-R1#conf t

WYWM-Lab-2-1-R1(config)#ip route 40.50.60.70 255.255.255.255 172.0.0.2

WYWM-Lab-2-1-R1(config)#exit

WYWM-Lab-2-1-R1#copy running-config startup-config *or* copy run start

*Do this for both routers*

WYWM-Lab-2-1-R1#ping 40.50.60.70 source loopback 100

**Setup and Configuration of OSPF**

* Setup and configure the basic router as above for both routers but use the information given in the Topology for OSPF

WYWM-Lab-3-1-R1#conf t

WYWM-Lab-3-1-R1(config)#interface ethernet 0/0

WYWM-Lab-3-1-R1(config-if)#ip address 10.8.4.1 255.255.255.0

WYWM-Lab-3-1-R1(config-if)#no shutdown

WYWM-Lab-3-1-R1(config-if)#exit

WYWM-Lab-3-1-R1(config)#exit

*Run a ping check once the above has been carried out for R2*

WYWM-Lab-3-1-R1#ping 10.8.4.2

***Method 1***

WYWM-Lab-3-1-R1#conf t

WYWM-Lab-3-1-R1(config)#interface loopback 200

WYWM-Lab-3-1-R1(config-if)#ip ospf 50 area 50

WYWM-Lab-3-1-R1(config-if)# exit

WYWM-Lab-3-1-R1(config)#inteferface ethernet 0/0

WYWM-Lab-3-1-R1(config-if)#ip ospf 50 area 50

WYWM-Lab-3-1-R1(config-if)#exit

WYWM-Lab-3-1-R1(config)#exit

WYWM-Lab-3-1-R1#

***Method 2(the video uses R2 for demonstration)***

WYWM-Lab-3-1-R2#conf t

WYWM-Lab-3-1-R2(config)#router ospf 50

WYWM-Lab-3-1-R2(config-router)#network 10.8.4.2.0 255.255.255.0

WYWM-Lab-3-1-R2(config-router)#network 10.50.1.1 255.255.255.255

WYWM-Lab-3-1-R2(config-router)#exit

WYWM-Lab-3-1-R2(config)#exit

WYWM-Lab-3-1-R1#show ip route

*Do this on both routers for verification and then save config for both routers*

WYWM-Lab-3-1-R1#copy run start

**Setup and Configuration of BGP**

* Setup and configure the basic router as above for both routers but use the information given in the Topology for BGP

WYWM-Lab-4-1-R1#conf t

WYWM-Lab-4-1-R1(config)#interface ethernet 0/0

WYWM-Lab-4-1-R1(config-if)#ip address 192.168.0.1 255.255.255.0

WYWM-Lab-4-1-R1(config-if)#no shutdown

WYWM-Lab-4-1-R1(config-if)#exit

WYWM-Lab-4-1-R1(config)#exit

WYWM-Lab-4-1-R1# copy run start

WYWM-Lab-4-1-R1#conf t

WYWM-Lab-4-1-R1(config)#router bgp 3000

WYWM-Lab-4-1-R1(config-router)#neighbor 192.168.0.2 remote-as 3500

WYWM-Lab-4-1-R1(config-router)#network 10.1.1.1 mask 255.255.255.255

WYWM-Lab-4-1-R1(config-router)#network 192.168.0.0 mask 255.255.255.0

WYWM-Lab-4-1-R1(config-router)#exit

WYWM-Lab-4-1-R1(config)#exit

*Now configure BGP for R2, once configured carry out the following on both routers*

WYWM-Lab-4-1-R1#show ip route

WYWM-Lab-4-1-R1#ping 10.2.2.2 source loopback 200

WYWM-Lab-4-1-R1# copy run start

**Setup and Configuration of GRE Tunnels**

* Setup and configure the basic router as above for both routers but use the information given in the Topology for GRE Tunnels

WYWM-Lab-5-1-R1#conf t

WYWM-Lab-5-1-R1(config)#interface ethernet 0/0

WYWM-Lab-5-1-R1(config-if)#ip address 172.16.128.1 255.255.255.0

WYWM-Lab-5-1-R1(config-if)#no shutdown

WYWM-Lab-5-1-R1(config-if)#exit

WYWM-Lab-5-1-R1(config)#exit

WYWM-Lab-5-1-R1#ping 172.16.128.2

WYWM-Lab-5-1-R1#conf t

WYWM-Lab-5-1-R1(config)#ip route 30.30.30.30 255.255.255.255 172.16.128.2

WYWM-Lab-5-1-R1(config)#exit

WYWM-Lab-5-1-R1#ping 30.30.30.30 source loopback 44

*Do this on both routers for verification*

WYWM-Lab-5-1-R1#conf t

WYWM-Lab-5-1-R1(config)#interface tunnel 400

WYWM-Lab-5-1-R1(config-if)#ip address 192.10.0.1

WYWM-Lab-5-1-R1(config-if)#tunnel source 20.20.20.20

WYWM-Lab-5-1-R1(config-if)#tunnel destination 30.30.30.30

WYWM-Lab-5-1-R1(config-if)#exit

WYWM-Lab-5-1-R1(config)#exit

*Do this on both routers*

WYWM-Lab-5-1-R1#show interface tunnel 400

WYWM-Lab-5-1-R1#show tunnel interface tunnel 400

**IP Access Control Lists**

* Setup and configure the basic router as above for both routers but use the information given in the Topology for IP Access Control Lists. Follow from below when you are about to start configuring the Loop Back Address as we are also adding OSPF

WYWM-Lab-6-1-R1#conf t

WYWM-Lab-6-1-R1(config)#interface loopback 10

WYWM-Lab-6-1-R1(config-if)#ip address 1.1.1.1 255.255.255.255

WYWM-Lab-6-1-R1(config-if)#ip ospf 50 area 50

WYWM-Lab-6-1-R1(config-if)#exit

WYWM-Lab-6-1-R1(config)#interface ethernet 0/0

WYWM-Lab-6-1-R1(config-if)#ip address172.10.20.1 255.255.255.0

WYWM-Lab-6-1-R1(config-if)#no shutdown

WYWM-Lab-6-1-R1(config-if)#ip ospf 50 area 50

WYWM-Lab-6-1-R1(config-if)#exit

WYWM-Lab-6-1-R1(config)#do ping 2.2.2.2 source loopback 10

***Below*** ***is for the extended access control list***

WYWM-Lab-6-1-R1(config)#ip access-list extended ICMPBLOCK

WYWM-Lab-6-1-R1(config-ext-nacl)#deny icmp 2.2.2.2 0.0.0.0 1.1.1.1 0.0.0.0

WYWM-Lab-6-1-R1(config-ext-nacl)#permit ip any any

WYWM-Lab-6-1-R1(config-ext-nacl)#exit

WYWM-Lab-6-1-R1(config)#interface ethernet 0/0

WYWM-Lab-6-1-R1(config-if)#ip access-group ICMPBLOCK inbound

WYWM-Lab-6-1-R1(config-if)#exit

WYWM-Lab-6-1-R1(config)#

***Below is for the standard access control list***

WYWM-Lab-6-1-R2#conf t

WYWM-Lab-6-1-R2(config)#ip access-list standard 10

WYWM-Lab-6-1-R2(config-std-nacl)#deny 1.1.1.1 0.0.0.0

WYWM-Lab-6-1-R2(config-std-nacl)#permit any

WYWM-Lab-6-1-R2(config-std-nacl)#exit

WYWM-Lab-6-1-R2(config)#interface ethernet 0/0

WYWM-Lab-6-1-R2(config-if)# ip access-group 10 inbound

WYWM-Lab-6-1-R2(config-if)#exit

WYWM-Lab-6-1-R2(config)#