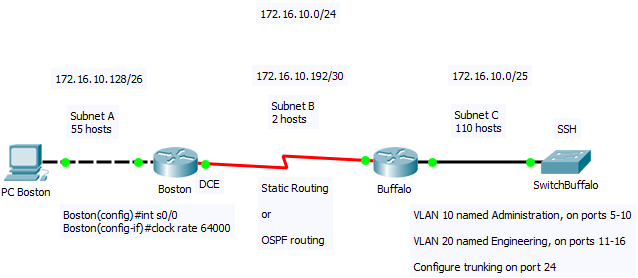
**Hands-On Skills Assessment   
CCNA Nackademin DEVOPS21**  
  
May 2022  
  
Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
**Total time for assessment: 90 minutes  
Total points = 100  
50% and over = G**

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**Assessment Objectives**  
Part 1: Develop the IPv4 Address Scheme (15 points)  
Part 2: Assign devices with IPv4 addresses (10 points)  
Instructor Sign-Off (25 points)

Part 3: Configure Device with Basic and Security Settings (15 points)  
Part 4: Configure ALL Devices with IP-Configuration. Verify IPv4 Connectivity(10 points)  
Part 5: Configure Static Routing with IPv4 (15 points)  
Instructor Sign-Off (40 points)

Part 6: Configure OSPFv2 Routing (15 points)  
Part 7: Configure VLANs on Buffalo Switch (10 points)  
Part 8: Configure SSH on the switch (10 points)  
Part 9: Factory reset on equipment (0 points)  
Instructor Sign-Off (35 points)  
Total points: 100

**Scenario**In this Skills Assessment (SA) you will configure the devices in a small network. You must configure routers and switch to support IP-connectivity. You will configure security, including SSH, on the switch in Part 8. You will test and document the network using common CLI commands.   
 **Passwords to use in the lab:**

**cisco** (for enable mode) **class** (for line console, vty and aux)

**Part 1: Develop the IPv4 Address Scheme (15 points)**  
Given an IP address and mask of 172.16.10.0/24, design an IP address scheme that satisfies the following requirements:  
  
Subnet A 55 hosts  
172.16.10.128 Subnet ID  
172.16.10.129-190 Hosts  
172.16.10.191 Broadcast  
255.255.255.192 Subnetmask  
0.0.0.63 Wildcardmask  
  
Subnet B 2 hosts  
172.16.10.192 Subnet ID  
172.16.10.193-194 Hosts  
172.16.10.195 Broadcast  
255.255.255.252 Subnetmask  
0.0.0.3 Wildcardmask  
  
Subnet C 110 hosts  
172.16.10.0 Subnet ID  
172.16.10.1-126 Hosts  
172.16.10.127 Broadcast  
255.255.255.128 Subnetmask  
0.0.0.127 Wildcardmask  
  
***Subnet A (5 points)***  
Number of subnet bits= 2  
  
New subnet mask (decimal)= 255.255.255.192  
  
Maximum usable hosts per subnet= 62  
  
**Subnet ID= 172.16.10.128**  
  
First IP Host address= 172.16.10.129

Last IP Host address= 172.16.10.190  
  
  
***Subnet B (5 points)***Number of subnet bits\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
New subnet mask (decimal)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
Maximum usable hosts per subnet\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
**Subnet ID=172.16.10.192**

First IP Host address\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
Last IP Host address\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
  
***Subnet C (5 points)***Number of subnet bits\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
New subnet mask (decimal)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
Maximum usable hosts per subnet\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
**Subnet ID=172.16.10.0**  
  
First IP Host address\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
Last IP Host address\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part 2: Assign devices with IPv4 addresses (10 points)**  
Host computers (first IP address in the subnet)  
PC Subnet A\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
PCs Default gateway\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
Routers (last IP address in the subnet for LAN)  
Router Boston Subnet A LAN interface f0/0\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Router Buffalo Subnet C LAN interface f0/0\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Router Boston Subnet B WAN interface (first IP address in the subnet for WAN) s0/0\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Router Buffalo Subnet B WAN interface (last IP address in the subnet for WAN) s0/0\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
VLAN 1 (native VLAN) for the Buffalo switch is the second available IP address for Subnet C LAN\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
  
Connect all necessary cabling.  
  
*Instructor Sign-off Part 1-2:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Points:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of 25 points*

**Part 3: Configure Device with Basic and Security Settings (15 points)**Here you should configure the routers and switch with hostnames, enable secret *password* (use **cisco**), description on links between routers (subnet B), passwords (use **class**) on console/vty/aux ports, encryption of passwords, banner motd (set Message of The Day Banner like "*authorized personnel only")*.   
Verify the running config of all devices.

**Part 4: Configure ALL Devices with IP-Configuration. Verify IPv4 Connectivity (10 points)**Configure PC (do not forget default gateway), switch and routers (all interfaces) with IP and enable interfaces so, up/up status on the interfaces will show. Verify the connectivity with ping between all nodes (PCs to default gateway) and show commands in the CLI. *Note this should only work within the networks in a configured router. Note, on the switch you should also configure the default gateway. The command is:* (config# ipdefault-gateway x.x.x.x). The x.x.x.x is the IP-address to the routers interface that is the default gateway.

**Part 5: Configure Static Routing with IPv4 (15 points)**Configure static routing on both routers. Test connectivity between both LANs.   
Verify in the routing tables that static routing is activated.

*Instructor Sign-off Part 3-5:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Points:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of 40 points*

**Part: 6 Configure OSPFv2 Routing (15 points)**Remove the static routes in both routers.  
Configure OSPF area 0 for both routers. Verify in the routing tables that OSPF routes are shown. *Tip, use the wildcard masks shown in Part 1.* **Part 7: Configure VLANs on Buffalo Switch (10 points)**Configure VLAN 10 named Administration, on ports 5-10 and VLAN 20 named Engineering, on ports 11-16. Configure trunking, on port 24.  
  
**Part 8: Configure SSH** **on the switch** **(10 points)**  
Use SSH version 2 (if supported in the Switch) (no Telnet). Test this function by using SSH with Putty, against the switch.

**Part 9: Factory reset on equipment**   
Remove the startup configuration with the erase “startup-config” command in the routers, type “reload” to restart them,   
  
Do the same for the switch except also removing the VLANs with “delete vlan.dat”. **Verify that all equipment is restored to factory reset.** *Instructor Sign-off Part 7-9:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Points:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of 35 points*

**Total points:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**