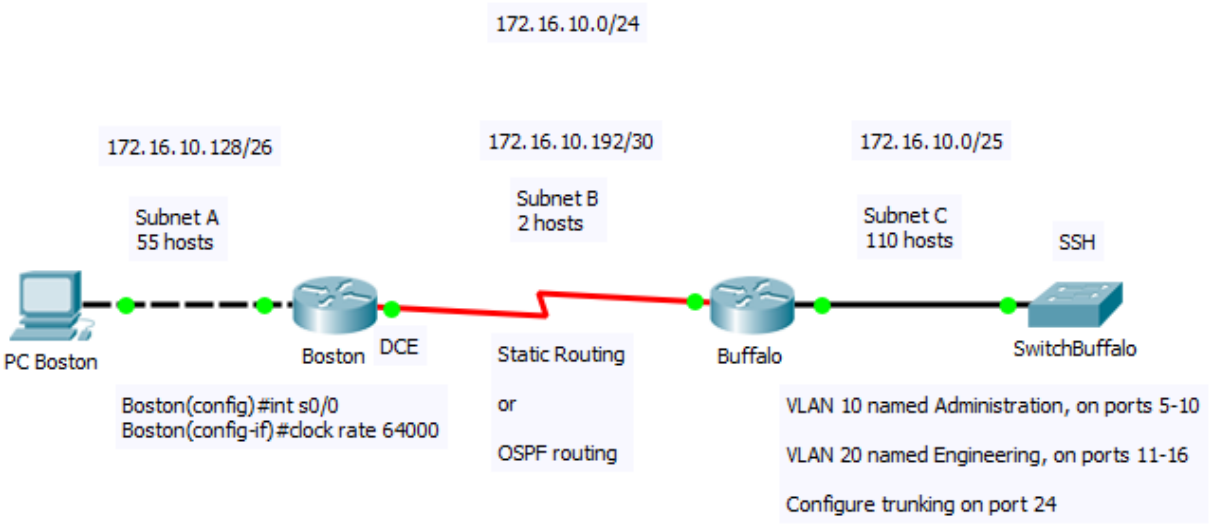
Hands-On Skills Assessment
CCNA Nackademin DEVOPS21

May 2022

Name:_____

Total time for assessment: 90 minutes
Total points = 100
50% and over = G



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# ip default-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:_____