**BKACAD**  
CCNA RS version 5.0  
**Openlab-CCNA1**

**A.    Scenarior: Implement network for Company BKACAD with 2 SITEs connect to the INTERNET. The company uses both IPv4 and IPv6 for the network, detail as follow:**

**-       SITE1-LAN2 use only IPv4 address.**

**-       SITE1-LAN1 use both IPv4 and IPv6 address (dual stack).**

**-       Wan link use both IPv4 and IPv6 address (dual stack).**

**- SITE2-LAN3 use only IPv6 address**

**-       Note: DNSv4 assign only IPv4 address, and DNSv6 assign only IPv6 address.**

**B.    The tasks are performed by following parameters:**

 1. **IP Address planning:**

|  |  |  |
| --- | --- | --- |
| **LAN** | **IPv4 Address : 188.88.128.0/20** | **IPv6 Address** |
| LAN1 | 100 hosts | 2001::/64 |
| LAN2 | 200 hosts |  |
| Loopback3 | 127 hosts |  |
| LAN4 | 250 hosts |  |
| WAN1 | 2 hosts | 2000:DB1::/64 |
| WAN2 | 2 hosts | 2000:DB2::/64 |
| LAN 3 |  | 2002::/64 |
| Internet | 200.1.1.0/24 | 2003::/64 |

**2.Assign IP address, subnet mask, default gateway to the networking devices.**

**a.**     All routers and server are assigned IP address manually as following rule:

Router interface : +1

DHCP : +2

WEB,MAIL : +3

DNS: +4

TFTP : +5, PC1 : +11, PC2 : +12.

Note:  PC5, PC6, PC7, PC8 : assigned IP address by DHCP server.

             PC3, PC4: assigned IP address auto-config.

*Ex: In the subnetwork: 192.168.1.128/25. (there are DHCP, PC5)*

*Router's interface : 192.168.1.129           (128+1).*

*DHCP server :192.168.1.130       (128+2).*

*PC4 client : 192.168.1.142                    (128+14)*

**3.** **Basic router configuration:**

Overall requirements: all network segments in the network diagram can connect to each other (example: ping and tranceroute work for to reach all devices and PCs); users can telnet to get access to router CLI.

a)          **Router name, MOTD banner and descriptions**

|  |  |  |  |
| --- | --- | --- | --- |
| Device | Hostname | Banner motd | Description |
| Router SITE1 | SITE1 | #This is BKACAD-SITE1-GATEWAY# |  |
| Router SITE2 | SITE2 | #This is BKACAD-SITE2-GATEWAY# |  |
| SITE1-f0/0 |  |  | Connect to LAN1 |
| SITE1-f0/1 |  |  | Connect to LAN2 |
| SITE1-s0/0/0 |  |  | Connect to Internet |
| SITE2-f0/0 |  |  | Connect to LAN3 |
| SITE2-f0/1 |  |  | Connect to LAN4 |
| SITE2-s0/0/0 |  |  | Connect to Internet |

b)    **Password**:

+The console are protected by clear text password (Unencrypted), password= cisco@console”

 +All VTY lines (0 – 4) are protected by clear text password (Unencrypted), password= ”cisco@vty”

+Set the secret password to enter privileged mode, password= “cisco@enable”.

*c) On Site2 :*

*int f0/0*

*ipv6 nd other-config-flag*

*ipv6 dhcp server DNSv6*

**4.**     **Configuring the SERVERS:**

**a.**     DHCP server:

**DHCP for LAN2 :**

- PoolName: serverPool

- Start IP address: **+10.**

- Maximum number of user: **100**

**DHCP for LAN 4 :**

- PoolName: serverPool

- Start IP address: **+50**

- Maximum number of user: **150**

**b.**    Enable TFTP server. Backup routers’ configuration with the file name: **R1-confg, R2-confg.**

**c.**     MAIL:

**Mail server:**

   Domain name: bkacad.com.

Add username/password: pc1/cisco and pc3/cisco

**PC1 Mail client:**

  Name: PC1

  Mail address: pc1@bkacad.com

 Incoming and outgoing mail server: bkacad.com

  User pc1, pass cisco

**PC3 Mail client:**

  Name: PC3

  Mail address: pc3@bkacad.com

  Incoming and outgoing mail server:bkacad.com

  User pc3, pass cisco

**5.**     **Test.**

-       From PCs, check connectivity with web server bkacad.com;cisco.com

-       From PC1, Note: send mail from PC1 to PC3 and check the result.