Network Configuration Documentation

1. Network Plan

a. Introduction:

This network setup involves creating subnets for three departments: Product Development, Marketing, and IT & Admin. The routers will route traffic between subnets and handle ADSL internet connectivity, while switches will connect PCs to the routers.

b. Devices Used:

- Routers: 2 x Cisco 1841

- Switches: 3 x Cisco 2960

- TACACS+ Server

- PCs: Each connected to respective departmental switches.

c. Topology Overview:

    Router 1 -------- Router 2

   / | |

Switch 1 (PD) Switch 2 (MK) Switch 3 (IT & Admin)

2. IP Addressing Scheme

- Product Development (PD): 12.5.0.0/24

- Marketing (MK): 12.5.1.0/25

- IT & Admin (IT): 12.5.1.128/26

- Router-to-Router Link: 192.168.1.0/30

Detailed IP Addresses:

1. Product Development Gateway: 12.5.0.1

  Usable IPs: 12.5.0.2 - 12.5.0.254

2. Marketing Gateway: 12.5.1.1

  Usable IPs: 12.5.1.2 - 12.5.1.126

3. IT & Admin Gateway: 12.5.1.129

  Usable IPs: 12.5.1.130 - 12.5.1.190

4. Router 1 Serial: 192.168.1.1

  Router 2 Serial: 192.168.1.2

3. Router Configuration

Router 1 (ADSL Gateway):

- GigabitEthernet0/0 (PD):

  ip address 12.5.0.1 255.255.255.0

- GigabitEthernet0/1 (MK):

  ip address 12.5.1.1 255.255.255.128

- Serial0/0/0 (Link):

  ip address 192.168.1.1 255.255.255.252

  clock rate 64000

Router 2 (IT & Admin):

- GigabitEthernet0/0 (IT):

  ip address 12.5.1.129 255.255.255.192

- Serial0/0/0 (Link):

  ip address 192.168.1.2 255.255.255.252

Routing:

Router 1:

  ip route 12.5.1.128 255.255.255.192 192.168.1.2

Router 2:

  ip route 12.5.0.0 255.255.255.0 192.168.1.1

4. Switch Configuration

Switch 1 (PD):

- VLAN 1:

  ip address 12.5.0.10 255.255.255.0

- Default Gateway: 12.5.0.1

Switch 2 (MK):

- VLAN 1:

  ip address 12.5.1.10 255.255.255.128

- Default Gateway: 12.5.1.1

5. TACACS+ Configuration

TACACS+ Server:

- IP: 12.5.0.50

- Key: mytacacskey

Router 1:

  aaa new-model

  tacacs-server host 12.5.0.50 key mytacacskey

aaa authentication login default group tacacs+ local

Router 2 (Same as Router 1)

6. ACL Configuration

ACL to block Product Development and Marketing from accessing IT & Admin:

Router 1:

access-list 100 deny ip 12.5.0.0 0.0.0.255 12.5.1.128 0.0.0.63

access-list 100 permit ip any any