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IN NETWORK TOPOLOGY (in given pkt file)

- HARDWARE –
    - Router used – 5
    - Switch used – 5
    - Server used – 1
    - Pc used – 32 (8 pc under each switch except 1st switch)
- WHY WE USE PT-ROUTER?
    - This router of cisco contains 10 slots and has separate modules with a naming convention beginning with PT. Switches. A switch, also called a multiport bridge, connects more than two end devices together. Each switch port is a collision domain
- WHY WE USE 2960 SWITCH?
    - Lowering the total cost of ownership and simplifying network operation are primary reasons for using the Cisco 2960 switches
- IP ADDRESS USED FOR ROUTERS
    - For 1st router – 10.0.0.1
    - For 2nd router – 10.0.0.2, 11.0.0.2
    - For 3rd router – 11.0.0.4, 12.0.0.4
    - For 4th router – 12.0.0.2, 14.0.0.2
    - For 5th router – 14.0.0.4
- IP SUBNETTED NETWORK FOR EACH LOCATION
    - We can write /16 in binary as 11111111.11111111. 00000000.00000000. Here, number of 1s is 16 and we use this value to denote the subnet mask as /16. In Class B network, we will have 16 Network bits (1s) and 16 host bits (0s) and using subnetting we will extend the network portion from 172.16.0.0/16 till 172.16.0.0/30. For /24 mask we will get 256 subnets, each with 254 hosts, each subnet has block size of 1. Below is list of all 256 subnets: 1 st Subnet = 172.16.1.0/24, 2nd = 172.16.2.0/24, 3rd = 172.16.3.0/24, 4 th = 172.16.4.0/24 ,5th = 172.16.5.0/24 As the classful behaviour ultimately led to a great loss of IP address so I decided to use classless kind of subnet mask.
- NETWORK DESIGN STRATEGY
    - DHCP POOL – In this topology I configured the DHCP pool called isoeh which contains distributable addresses from the network. The pool provides a default gateway also. DHCP minimizes configuration errors caused by manual IP address configuration, such as typographical errors, or address conflicts caused by the assignment of an IP address to more than one computer at the same time.
    - NAT PAT - This is a special type of Dynamic NAT where theoretically 65536 Private IP address can be associated with a single Public IP address dynamically by the NAT agent as and when required. So, it is the most economical solution at only 1 public IP dress is sufficient to connect an entire LAN to the Interne