Faculty of Computing

[Computer Communications & Network]

Lab No 6 Tasks

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Task 1: Write the IP address 222.1.1.20 mask 255.255.255.192 in CIDR.

Answer:

<mark>Its the IP Address of Class C.</mark>

Now the Subnet Mask: 255.255.255.192

From 1st 3 Octet all bits are reserved for network which is 24 and from 192, 2 is reserved for network and 6 for host.

24+2 = 26

<mark>**CIDR: 222.1.1.20/26**</mark>

Task 2: Write is the IP address 135.1.1.25 mask 255.255. 248.0 in CIDR notation.

Answer:

<mark>It's the IP Address of Class B.</mark>

Now the Subnet Mask: 255.255.248.0

From 1st 2 Octet all bits are reserved for network which is 16 and from 248, 5 is reserved for network and 3 for host.

16+5 = 21

<mark>**CIDR: 135.1.1.25/21**</mark>

Task 3: You have been allocated a class C network address of 201.1.1.0 how may hosts can you have?

<mark>**Answer:**</mark>

For class C the default subnet mask is 255.255.255.0. The first 2 Octets are reserved of network and 1 is reversed for host.

1 Octet for host = 1 Byte = 8 Bit

<mark>**Formula: $2^n-2 = 2^8-2= 254$**</mark>

So, there are 254 hosts for this Class C network.

Task 4: You have been allocated a class A network address of 21.0.0.0. You need create at least 10 networks and each network will support a maximum of 100 hosts. Would the following two subnet masks Work.

255.255.0.0 and or 255.255.255.0

Answer:

Yes, the both subnet mask will work.

For 1st Subnet mask 255.255.0.0

The 1st Octet is reserved for network.

Now 1 Octet for Subnet = 1 byte = 8 bit

$2^n = 2^8 = $ 256 Networks

For Host 2 Octet are reserved = 2 Byte = 16 bits

$2^n-2 = 2^{16}-2 = $ 65534 Host

For 2nd Subnet mask 255.255.255.0

The 1st Octet is reserved for network.

Now 2 Octet for Subnet = 2 byte = 16 bit

$2^n = 2^{16} = $ 65536 Networks

For Host 1 Octet are reserved = 1 Byte = 8 bits

$2^n-2 = 2^8-2 = $ 254 Host

So, both subnet mask provided networks more than 10 and also host more than 100.

Task 5: You have been allocated a Class B network address of 129.1.0.0. You have sub netted it using the subnet mask 255.255.255.0 How many networks can you Have and how many hosts can you place on each network?

Answer:

255.255.255.0 from this subnet mask the first two are reserved now from the 3rd Octet

1 Octet for subnet = 1 Byte = 8 bit

$2^n = 2^8 = $ **256 Networks**

For Host there is 1 Octet reserved

1 Octet of Host = 1 Byte = 8 bits

$2^n-2 = 2^8-2 = $ **254 Host**