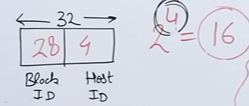
# CLASSLESS ADDRESSING

## INTRODUCTION

No classes  
Blocks of addresses are provided

## ADDRESS BLOCK RESTRICTIONS

1. The addresses in a block must be contiguous.
2. The number of addresses in a block must be a power of 2



1. The first address must be evenly divisible by the number of addresses  
   Taking above e.g. 1st address should be / 16

### MASK

Block of addresses can be defined as

x.y.z.t / n

in which x.y.z.t defines one of the addresses and /n defines the mask(no of networks bits).

### FIRST, LAST & NO. OF ADDRESSES

The first address in the block can be found by setting the **rightmost 32-n bits to 0**.

The last address in the block can be found by setting the **rightmost 32-n bits to 1**.

Total Addresses : **32-n**

## NETWORK ADDRESS

The first address is called the network address and defines the organization network.

First address is the one that is used by routers to direct the message sent to the organization from the outside.

## STRUCTURE

The n left most bits of the address x.y.z.t/n define the **network** (organization network); (**PREFIX**)

the 32- n rightmost bits define the particular **host** (computer or router) (**SUFFIX**)

The prefix is common to all addresses in network  
Suffix changes from one device to another.

## SUBNETTING