

5/5/2020
Mar'18

IP Address Continued...

	M	T	W	T	F	S	S	M	T	W	T	F	S	S
							1	2	3	4	5	6	7	8
Feb'2018	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	26	27	28											

31
WK 13 (090-275)

Saturday

IP is a connectionless protocol. Let us see an IP address of class C:—

IP Address 192.168.100.225

Subnet Mask 255.255.255.0

Gateway 192.168.100.1

(network part) (host part)

We can have two parts of every IP Address.

Network Part and Host part.

Subnet Mask represents the class of the Network:

class A — 255.0.0.0

class B — 255.255.0.0

class C — 255.255.255.0

Apr'18

01
WK 13 (091-274)

Other two classes are used as:—

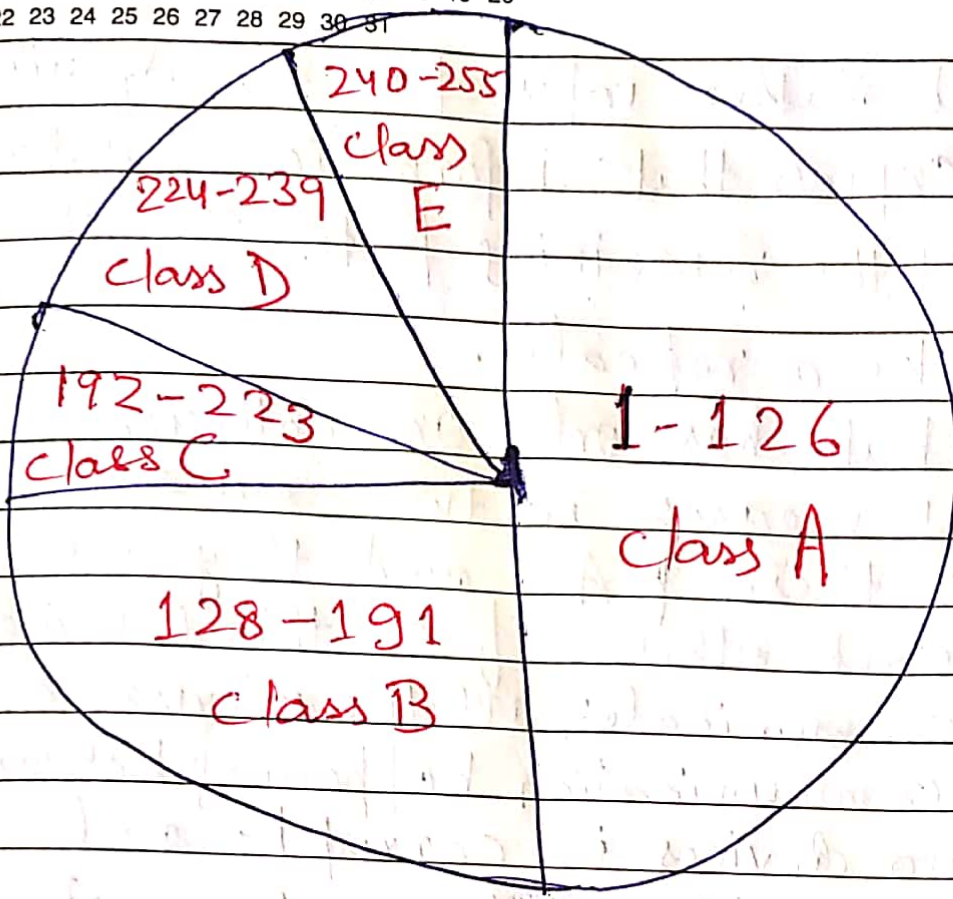
class D — Multi-cast

class E — Experimental purposes

In Networking three classes are used by CISCO — [A, B and C]. CISCO is an icon company for networking equipments.

Notes In IPv4, classes are identified by the first octet in IP Address.

127 number is used for loopback ip address



14 As we know that any local host has
15 default IP address of 127.0.0.0 provided
16 by operating system if we have not specified
any IP address.

17 Now we will discuss about some basic
networking device — HUB, Bridge, Switch,
Router

18 HUB → Hub is a popular device used in
networking while accessing internet network;
or inter network (LAN). A HUB is a
Notes non-intelligent device because it
does not have any intelligent features
in it. It doesnot have a hardware
CAM table or MAC table like a switch has.

Apr'18

03

WK 14 (093-272)

Tuesday

Mar 2018

M	T	W	T	F	S	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

A hub takes input from one of its ports and copies that information and sends out into all the remaining ports. So, it just acts like a repeater.

A hub has only one collision domain that means if two devices connected to these ports and they are talking to each other, if a third device tries to communicate, all the information, even the communication happening between the first two devices is corrupt and all the devices will have to re-transmit.

Now, there is no way that a hub can segregate these two communications. So, there is only one collision domain.

Hub has also one broadcast-domain. That means when a broadcast-message is received from any port, it will broadcast in all the ports.

Now, broadcast literally means sending notes to all the devices.

Now, the problem can happen ~~with~~ in big networks since there will be network congestion due to millions and millions devices are connected with

internet network.

Switch → Switch is an intelligent device, because it has something called ASIC (Application Specific Interpretation Circuitry). It means that, it has the feature of storing the MAC address information. Each of these ports are connected to a device. It has all the MAC address of connected devices. So, any information coming from a device for a particular device, then switch can send that information only to that particular destination without having to send out broadcasts in all the different 24 ports of the switch.

Now that effectively breaks the collision domain.

So, unlike a hub in this case, every port can have a communication with another port without colliding the traffic going from other ports.

Hence, there are many collision domains.

Apr'18

05

WK 14 (095-270)

Thursday

M T W T F S S							M T W T F S S										
							1	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	18	19	20	21	22	23	24	25				
26	27	28	29	30	31												

For example, a switch having 8 ports has 8 different collision domains, switch having 24 ports has 24 different collision domains etc.

Switch has only one Broadcast-Domain.

Bridge :- Bridges are now a days not used anywhere. Earlier it was used for connecting two types of network with each other.

Router :- Router is also an intelligent device used in computer networks. It has many collision domains and it has also many broadcast-domains.

Working of Router is receiving a broadcast traffic from one of its ports and just-drops it. It does not forward that to the other ports.

Notes A Router is the border device, that means it is a gateway device that is used to connect-

different networks.

8 So, router is an intelligent device,
 9 it has many collision domain and
 it has many broadcast domains.

10 So, Router is used in
 internet network to communicate
 11 among ~~different~~ computers located
 in different gateways that means
 12 different located networks having
 different default gateways.

13 example of router — **CISCO 1921**
 14 is a router.

15 It has a power switch but
 CISCO Switches has no power switch.
 16 Switch has lot of ports — 12, 24 etc.

17 But Router have may be a couple
 of (2 - gigabyte ports) gigabyte ports
 18 and a couple of fast ethernet
 ports (2 - ethernet ports).

Notes