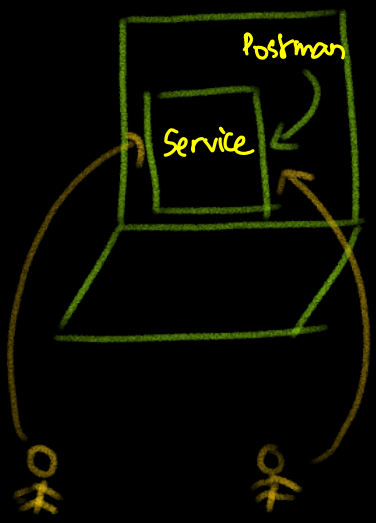
Agenda

1. Why cloud
    - -> NAT
    - -> Static IP's
    - -> Global delivery etc
2. Managed infra
3. EC2

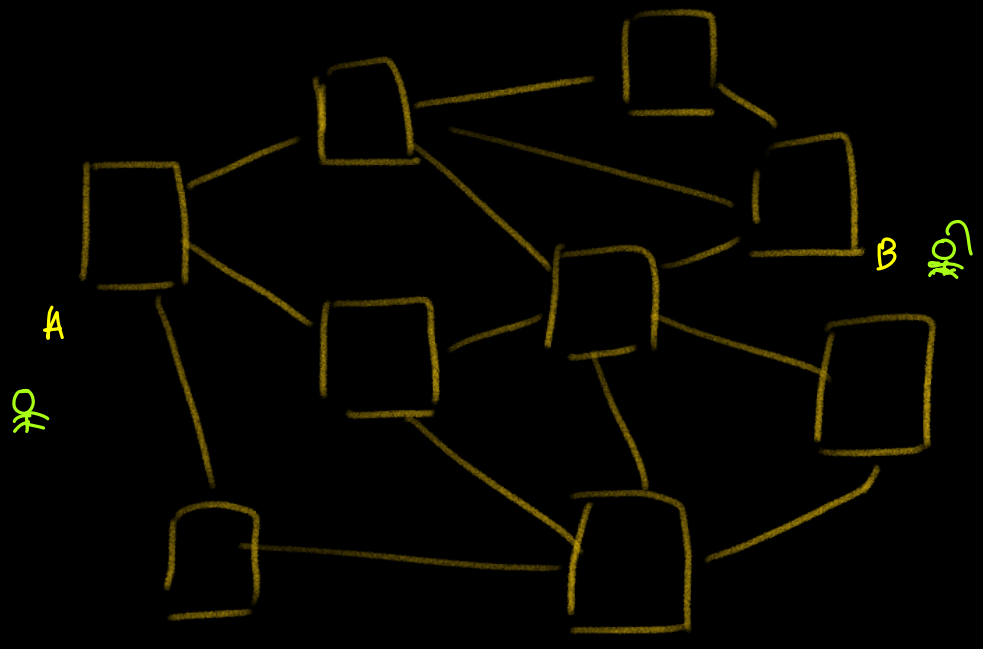


The other people cannot access the api's running on my system.

How internet works

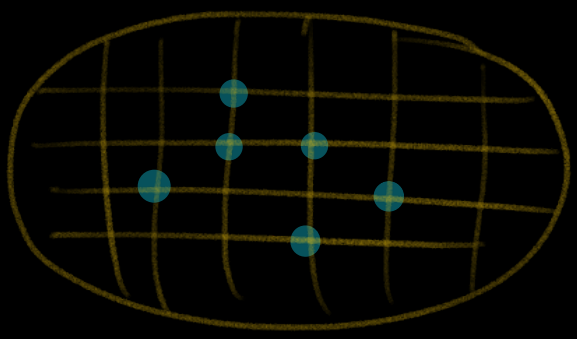
it's a network of inter connected machines.

iot devices
(tv, bulb, watch, phones)



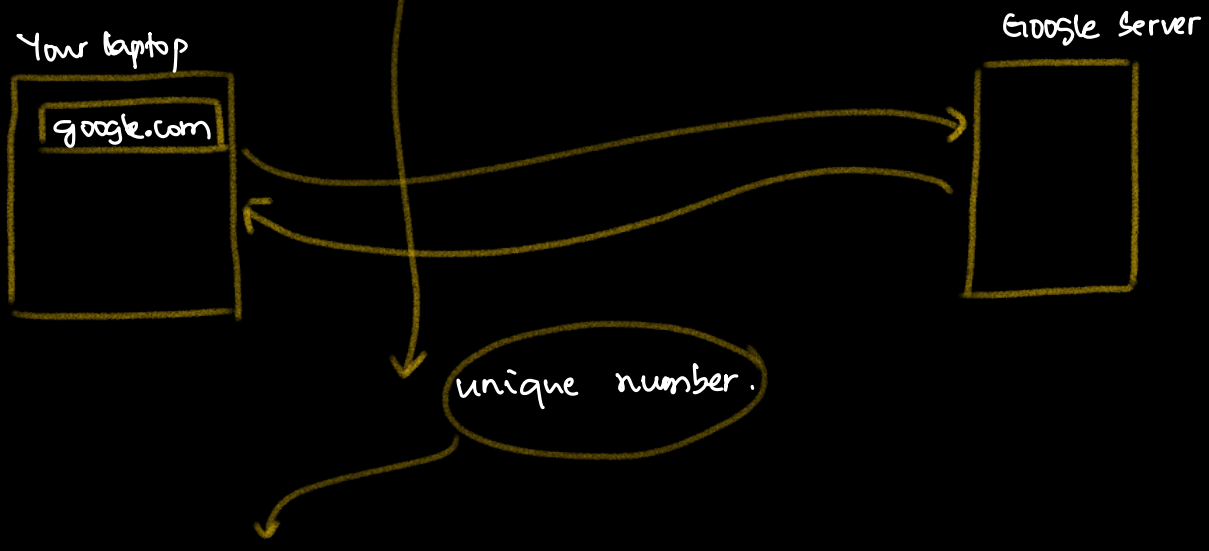
Person A should know the address of person B, to reach her.

Pin point a location exactly (latitude, longitude).



Coming back to computers, each computer on internet is having a unique address → IP address.

Unambiguosly identifies machines on internet.



It's a 32 bit number.

Ex: 192.168.103.5

[0-255]

8 bit number.

How many unique IP's we can have with 32 bit number.

256 × 256 × 256 × 256 = $(256)^4$ = 4.5 Billion machines.

Almost 10B devices connected to the internet at a parti. time.

How are we giving unique IP's for 10Billion devices?

Newer version of IPv6 uses 128 bit. (This is very huge!).

But, we cannot migrate all the machines to IPV6. Because of this we still have to solve the issue.

If I connect to the internet, I should be allocated an IP address?

Internet Service Provider assigns an IP.

ISP's first should buy the IP's.

ICANN

↳ Cells a range of IP addresses to ISP's / cloud providers Org.

↳ owner of IP addresses.

121. 101. X. Y → Amazon

101. 102. 103. K → Airtel

101. K. 102. 3 → Jio

These service providers distribute the IP's to their customers.

Problem

Airtel owns 20 IP addresses

It has 100 customers.

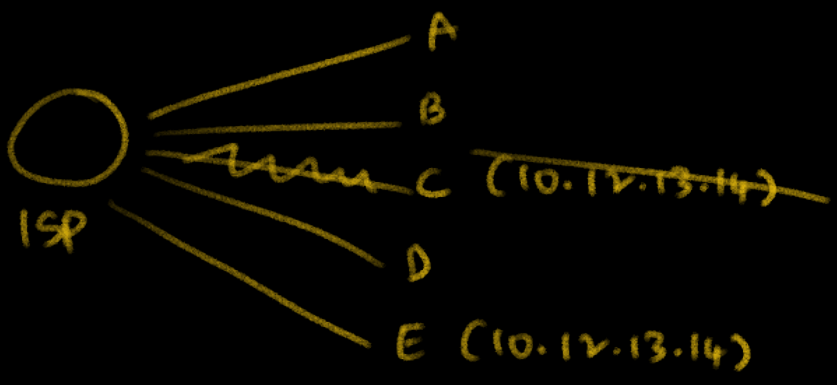
How to manage?.

will all the 100 customers be always connected to internet?-

Not necessarily.

Soln: Airtel doesn't allocate static IP but assign the IP's dynamica -lly.

If you reconnect to internet, your IP can change.



What if everyone is connected to the internet at the same time.

NAT : Network Address Translator

Airtel has got only 4 IP address, (A, B, C, D) It creates a group for each of these.

Can have value anywhere blw 0.0.0.0 to

255.255.255.255

whatismyipaddress.com. → phone
→ laptop.

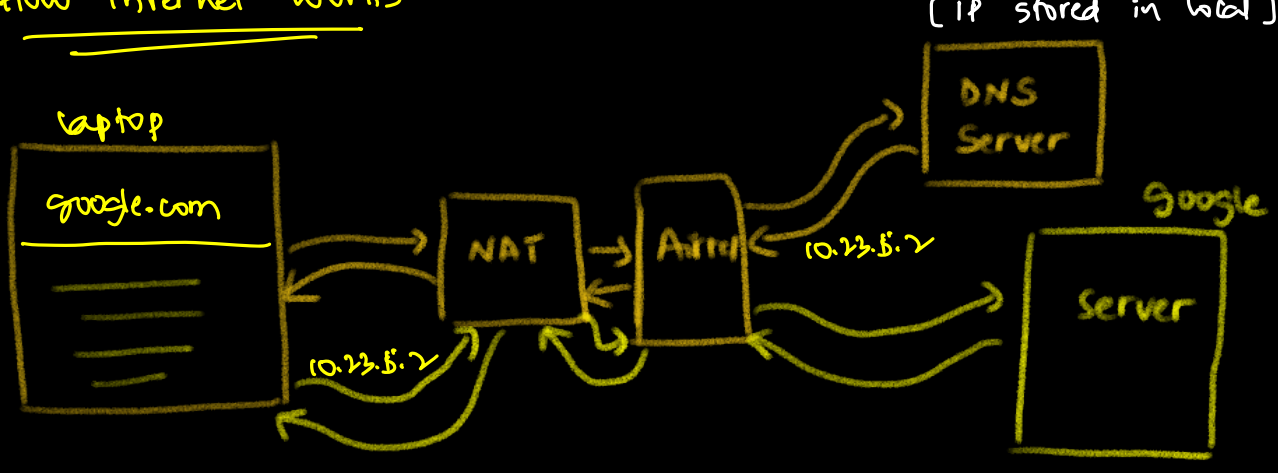
Take aways

* Our ISP's don't give us public IP addresses, they put us under NAT.
* If I've to allow other people to use my system, I need a public IP.

DNS → Domain name server.

phone contact book → (name, contact).
(name, ipaddress).

How internet works



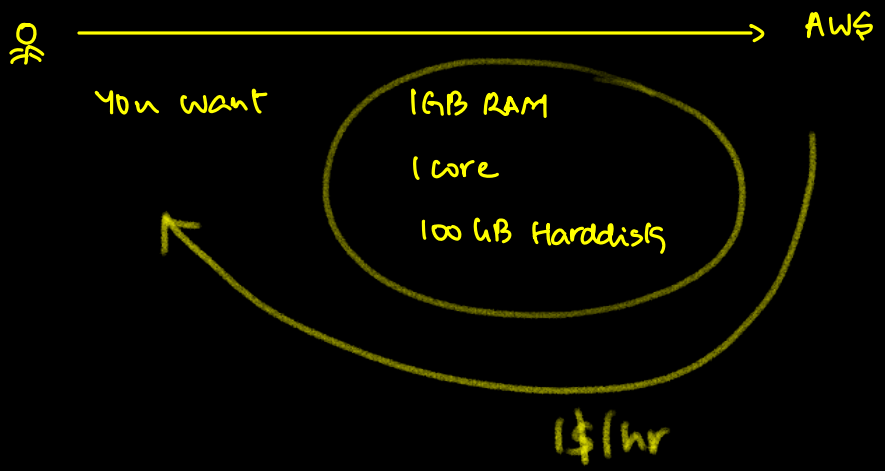
Some more issues if we host a website in our system.

1. Electricity
2. ISP's can be down
3. Experience of people who are using your website won't be same across the globe.
4. Not efficient use of resources.

Cloud Providers

single concept-

Instead of you having to buy machines to host your services, we already have a lot of machines and you can rent them.



Cloud providers

Amazon → AWS ← 1 year free tier

Microsoft → Azure ← $150 free credits

Google → GCP

Oracle → OCI

IBM →

VMWare →

Alibaba →

Huewei →