Obtaining IP Addresses

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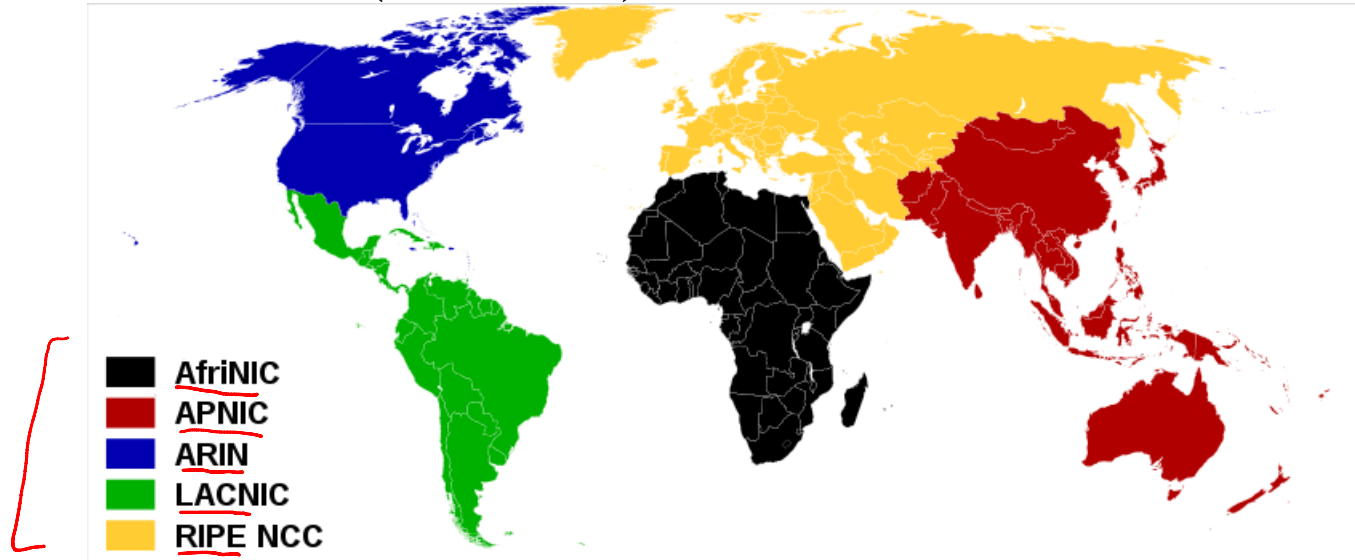
Organization

IP Prefix [_____]

- How does an organization get an address block?

- Ans: From provider Internet Service Provider (ISP)

- Indian: Reliance, Tata

- International: Sprint, AT&T

Internet Service Provider (ISP)

- How does an ISP get address blocks?

- Ans: From Regional Internet Registries (RIR) which are controlled by Internet Corporation for Assigned Names and Numbers (ICANN)

- AfriNIC
- APNIC
- ARIN
- LACNIC
- RIPE NCC

Organization

CIDR

- How does an organization get an address block?

- Ans: From provider Internet Service Provider (ISP)

ISP's Block	10000101 11000101 10000000 00000000	133.197.128.0/18
Organization 0	10000101 11000101 10000000 00000000	133.197.128.0/19
Organization 1	10000101 11000101 10100000 00000000	133.197.160.0/21
Organization 2	10000101 11000101 10101000 00000000	133.197.168.0/21
Organization 3	10000101 11000101 10110000 00000000	133.197.176.0/21
…………..	…………….	

During routing process: ISP Routers will advertize send me anything
with addresses beginning 133.197.128.0/18

Host

- Organization has an IP prefix

    – How does a host get a specific IP address?

- Address needs to be unique and location-dependent → Re-configurable address

  [IP address
    Mask
  default route
        DNS serv

- Before any communication, the host needs an IP address and default router's IP address

"Remote"

Configuration

- Manual Configuration

  - Windows: control-panel-> Network and Internet -> Network Connections -> Local Area Connection -> TCP/IPv4 -> properties

    IP address

  - Unix: ifconfig

  - Remote configuration difficult, error prone

- Automatic Configuration: Dynamic Host Configuration Protocol (DHCP)

  - Dynamically get address from a server

  - "plug-and-play"