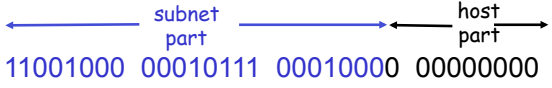
IP Authorities

- How does an ISP (or organization) get a block of addresses ?
- ICANN – Internet Corporation for Assigned Names and Numbers (www.icann.org)
  - assigns domain names (e.g., www.cocacola.com, www.ulb.ac.be, etc.)
  - manages IP-domain name translation (DNS)
  - resolves disputes
- IANA – Internet Assigned Numbers Authority (www.iana.org)
  - allocates IP addresses over continents and (supra)national regulation authorities

IP addressing: CIDR

- Historical approach: A,B,C,D classes only
  - Each subnet *had* to be implemented in one of those classes
  - Class A=/8=2^{24} = 16.600.000 adresses
  - Class B=/16=2^{16} = 65.000 adresses
  - Class C=/24=2^{8} = 256 adresses
  - Rigid, inefficient, lead to addresses depletion.
- CIDR: Classless InterDomain Routing
  - subnet portion of address of arbitrary length
  - address format: a.b.c.d/x, where x is # bits in subnet portion of address



200.23.16.0/23

Special IP addresses

- **Private networks** (not to be used on the Internet)
  - A class : 10.0.0.0/8
  - 172.16.0.0/12
  - B class: 192.168.0.0/16
- **Loopback** (allows IP networking even if no connection)
  - 127.0.0.0/8 (packet loops back inside the host)
- **Link local** (not for the outside)
  - 169.254.0.0/16 (auto config. or no DHCP)
- **Multicast** (see below)
  - 224.0.0.0/4