

IPv6:
128 bit long,
expressed in hexadecimal colon form

no network ip
no broadcast ip

example:

2001 : 0211 : 0001 : 0000 : 0000 : 0000 : 0000 : 0001

hex bit : there are 16 bits actually.
so total 16 X 8 =128 bit

network bit and
host bit are fixed

network bit = 64 bits
host bit = 64 bits

as it is fixed, so there is no NAT, PAT

*** rules of writing

leading zeros can be omitted.

so,

2001 : 211 : 1 : 0 : 0 : 0 : 0 : 1

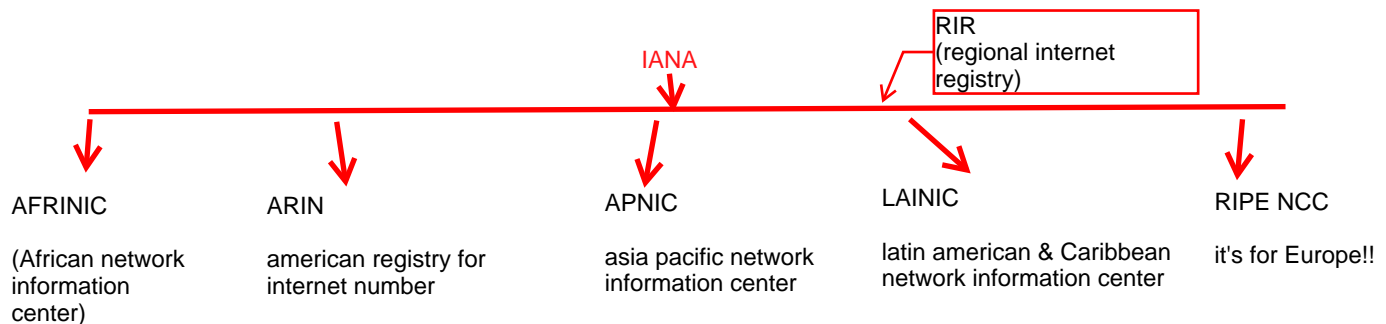
continuous zeros can be expressed as double colon (::)

so, now,

2001 : 211 : 1 :: 1

only one double colon
(::) can be used in an
IPv6 address

IANA have divided world into 5 parts. these are called RIR.



2001 : 0211 : 0001 : 0000 : 0000 : 0000 : 0000 : 0001

/3 = IANA prefix

/23 = RIR prefix

/32 = ISP prefix

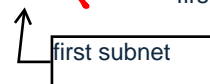
/48 = site prefix

/48 - /64 = subnet bit

IPv6 address are called global unicast address
public address of IPv4 called global unicast address.

assign first subnet's first ip

ans: 2001:211:1:0::0



do yourself:
find ip of:
4th subnet
6th ip.

do yourself:
find ip of: 3rd subnet 5th ip.

IPv6 e same LAN a communication kora jay. link local address use kore korte hoy.
link local address assign korte hoy nah . nijei protita device nije k assign kore.

link local address : FE80/10 ----> this is network bit

EUI-64 ----> extended unique identifier diye PC gulo nijer link local address create kore.

FE80/10 + mac address $\xrightarrow{\text{EUI-64}}$ link local address

suppose mac address -> A0BC - 42 AB - 526C

ai khane FFFE add korte hobe

so, now A0BC : 42 FF: FEAB : 526C

1010 0000 ...

7th bit will have to inversed, so 1010 0010 ...

rules for making EUI-64:

1. MAC address er majhe FFFE add korte hobe

2. nuton pawa address er majhe 7th bit k change kore dite hobe
so now,
A2BC : 42FF : FEAB : 526C