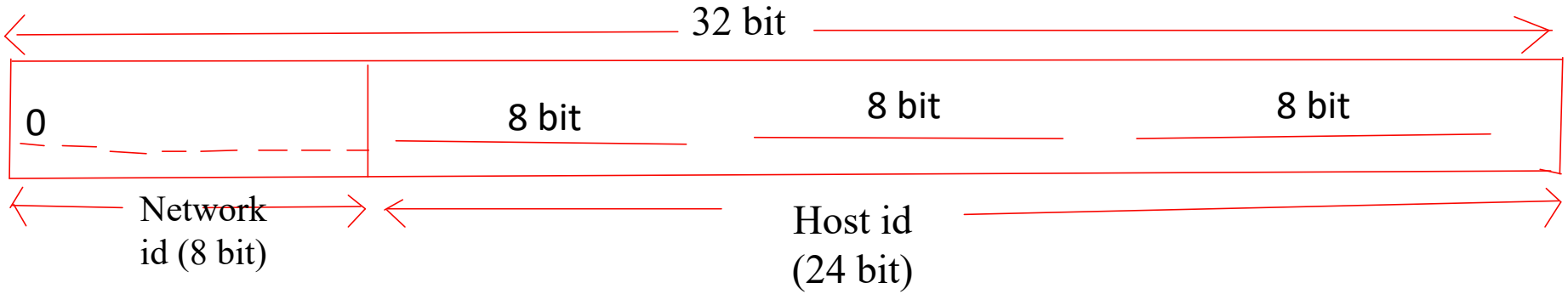
Class A addressing



In class A addressing the first bit of first octate is reserved as 0.

Total ip address possible = 2^31

0 0000000 = 0
0 0000001 = 1
.
.
.
0 1111111 = 127

- Total Network possible = 2^7
- Out of 128 the first and last address is not used.
- Because the first address indicates the particular network and the last id is used for broadcast.

- So, actual usable network possible = (2^7) -2 = 126.
- No. of host possible = (2^24) - 2
- Range : (0.0.0.0 to 127.255.255.255)

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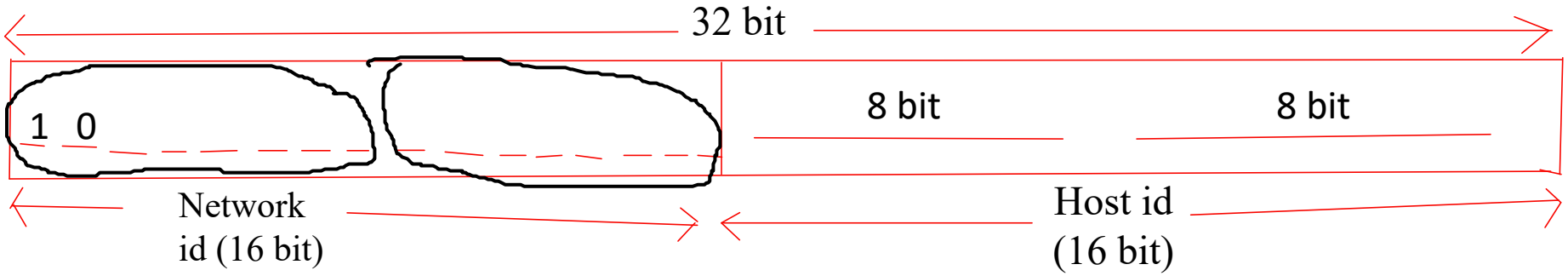
Class B addressing



In class B addressing the first two bit of first octate is reserved as 10.

Total ip address possible = 2^30

10 000000 = 128
10 000001 = 129
.
.
.
10 111111 = 191

- Total Network possible = 2^14
- So, actual usable network possible = (2^14)
- No. of host possible = (2^16) - 2
- 128.0.0.0 to 191.255.255.255 belonging to class B.
- There is another octate, so for 64 values(128 to 191) there are (0 to 255) values. Therefore total 64*256 = 2^14 networks.

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Class C addressing

In class C addressing the first three bit of first octate is reserved as 110.

Total ip address possible = 2^29

110 00000 = 192
110 00001 = 193
.
.
.
110 11111 = 223

- Total Network possible = 2^21
- No. of host possible = (2^8) - 2
- 192.0.0.0 to 223.255.255.255 belonging to class C.
- There is another two octates, so for 32 values(192 to 223) there are (0 to 255) values and another 0 to 255 values. Therefore total 32*256*256 = 2^21 networks.

- By Sayak Pal

Class D addressing

In class D addressing the first four bit of first octate is reserved as 1110.
There is no network id and host id part in class D.

Total ip address possible = 2^28

1110 0000 = 224
1110 0001 = 225
.
.
.
1110 1111 = 239

- 224.0.0.0 to 239.255.255.255 belonging to class D.

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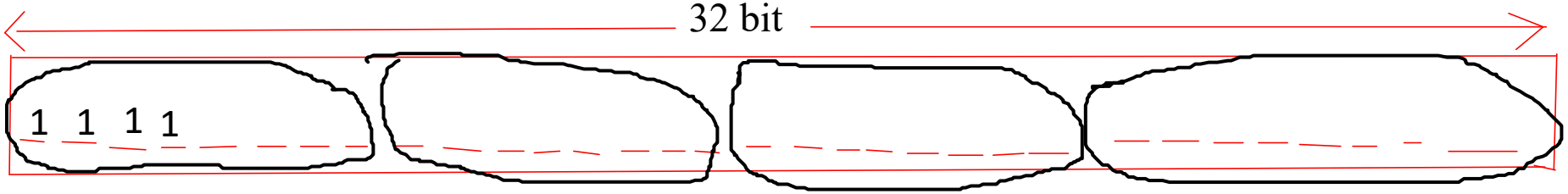
Class E addressing



In class E addressing the first four bit of first octate is reserved as 1111.
There is no network id and host id part in class E.

Total ip address possible = 2^28

1111 0000 = 240
1111 0001 = 241
.
.
.
1111 1111 = 255

- 240.0.0.0 to 255.255.255.255 belonging to class E.
- IP addresses belonging to class E are reserved for experimental and research purposes.

- By Sayak Pal