|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Class of IP Address** | **Total Number of IP Addresses** | **1st Octet Decimal Range** | **Number of Networks available** | **Hosts per network** | **Default Subnet Mask** |  |
|  | Class A | 231 | 1 – 126 | 27 – 2 | 224 – 2 | 255.0.0.0 |  |
|  | Class B | 230 | 128 – 191 | 214 | 216 – 2 | 255.255.0.0 |  |
|  | Class C | 229 | 192 – 223 | 221 | 28 – 2 | 255.255.255.0 |  |
|  | Class D | 228 | 224 – 239 | Not defined | Not defined | Not defined |  |
|  | Class E | 228 | 240 – 254 | Not defined | Not defined | Not defined |  |
|  |  |  |  |  |  |  |  |

For any given IP Address,

* If the range of first octet is [1, 126], then IP Address belongs to class A.
* If the range of first octet is [128, 191], then IP Address belongs to class B.
* If the range of first octet is [192, 223], then IP Address belongs to class C.
* If the range of first octet is [224, 239], then IP Address belongs to class D.
* If the range of first octet is [240, 254], then IP Address belongs to class E.

For any given IP Address,

IP Address of its network is obtained by setting all its Host ID part bits to 0.

For any given IP Address,

Direct Broadcast Address is obtained by setting all its Host ID part bits to 1.

* For any given IP Address, limited Broadcast Address is obtained by setting all its bits to 1.
* For any network, its limited broadcast address is always 255.255.255.255
* Class D IP Addresses are not divided into Net ID and Host ID parts.
* Class E IP Addresses are not divided into Net ID and Host ID parts.

Solved Example

Given IP Address is - 130.1.2.3

* IP Address belongs to class B
* Network IP Address = 130.1.0.0
* Direct Broadcast Address = 130.1.255.255
* Limited Broadcast Address = 255.255.255.255