

RIPv1 and IGRP never advertise subnet mask information, since these use **FLSM** (Fixed Length Subnet Masks).

IPv4 32-bit IP Addressing (2³²)

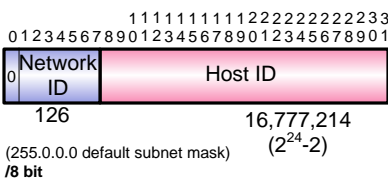
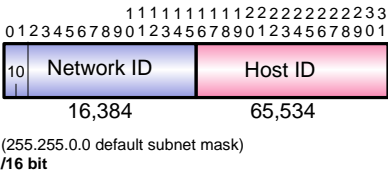
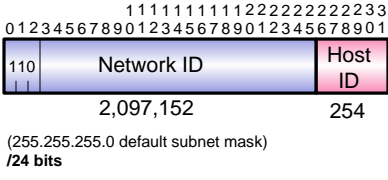
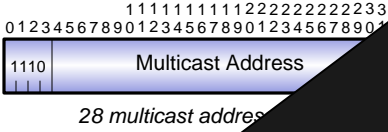

(Five address classes of IP and subnet masking routine)

Subnet masking is used to expand the number of networks due to the 32-bit limitation of IP's address field. Masking uses the Boolean (logical) **AND** comparison (**0 AND 1 / 0 = 0**).

The convention used for the documentation of Internet Protocols is to express numbers in decimal and to picture data in "big-endian" order. That is, fields are described left to right, with the most significant octet on the left and the least significant octet on the right.

255.255.255.0	1111 1111 . 1111 1111 . 1111 1111 . 0000 0000
(C subnet) /24	110n nnnn . nnnn nnnn . nnnn nnnn . hhhh hhhh
2,097,152 subnets	254 hosts
255.255.255.248	1111 1111 . 1111 1111 . 1111 1111 . 1111 1111
(5 subnet bits) /28	110n nnnn . nnnn nnnn . nnnn nnnn . nnnn nnnn
30 subnets	6 hosts

CLASSful models with FLSM

<p>Class A 0.1-126</p>	 <p>0 and 127 Reserved 0.0.0.0 - Default Route 127.h.h.h - Internal Loopback address</p> <p>10.0.0.0 - 10.255.255.255 IANA reserved for private networks</p>	<p>Example IP Subnetting</p> <table border="1"> <thead> <tr> <th>Address</th> </tr> </thead> <tbody> <tr> <td>201.222.10.1</td> </tr> <tr> <td>15.16.10.1</td> </tr> </tbody> </table>	Address	201.222.10.1	15.16.10.1
Address					
201.222.10.1					
15.16.10.1					
<p>Class B 128 -191</p>	 <p>172.16.0.0 - 172.31.255.255 IANA reserved for private networks</p>				
<p>Class C 192 -223</p>	 <p>192.168.0.0 - 192.168.255.255 IANA reserved for private networks</p>				
<p>Class D 224 -239</p>	 <p>28 multicast addresses</p>				
<p>Class E 240 -247</p>	 <p>Reserved</p>				

Copyright © ITCharts.com