Netmask	Netmask (binary)	CIDR	Notes
255.255.255.255	11111111.11111111.11111111.11111111	/32	Host (single addr)
255.255.255.254	11111111.11111111.11111111.11111110	/31	Unuseable
255.255.255.252	11111111.11111111.11111111.11111100	/30	2 useable
255.255.255.248	11111111.11111111.11111111.11111000	/29	6 useable
255.255.255.240	11111111.11111111.11111111.11110000	/28	14 useable
255.255.255.224	11111111.11111111.11111111.11100000	/27	30 useable
255.255.255.192	11111111.11111111.11111111.11000000	/26	62 useable
255.255.255.128	11111111.11111111.11111111.10000000	/25	126 useable
255.255.255.0	11111111.11111111.11111111.00000000	/24	"Class C" 254 useable
255.255.254.0	11111111.11111111.11111110.00000000	/23	2 Class C's
255.255.252.0	11111111.11111111.11111100.00000000	/22	4 Class C's
255.255.248.0	11111111.11111111.11111000.00000000	/21	8 Class C's
255.255.240.0	11111111.11111111.11110000.00000000	/20	16 Class C's
255.255.224.0	11111111.11111111.11100000.00000000	/19	32 Class C's
255.255.192.0	11111111.11111111.11000000.00000000	/18	64 Class C's
255.255.128.0	11111111.11111111.10000000.00000000	/17	128 Class C's
255.255.0.0	11111111.11111111.00000000.00000000	/16	"Class B"
255.254.0.0	11111111.11111110.00000000.00000000	/15	2 Class B's
255.252.0.0	11111111.11111100.00000000.00000000	/14	4 Class B's
255.248.0.0	11111111.11111000.00000000.00000000	/13	8 Class B's
255.240.0.0	11111111.11110000.00000000.00000000	/12	16 Class B's
255.224.0.0	11111111.11100000.00000000.00000000	/11	32 Class B's
255.192.0.0	11111111.11000000.00000000.00000000	/10	64 Class B's
255.128.0.0	11111111.10000000.00000000.00000000	/9	128 Class B's
255.0.0.0	11111111.00000000.00000000.00000000	/8	"Class A"
254.0.0.0	11111110.00000000.00000000.00000000	/7	
252.0.0.0	11111100.00000000.00000000.00000000	/6	
248.0.0.0	11111000.00000000.00000000.00000000	/5	
240.0.0.0	11110000.00000000.00000000.00000000	/4	
224.0.0.0	11100000.00000000.00000000.00000000	/3	
192.0.0.0	11000000.00000000.00000000.00000000	/2	
128.0.0.0	10000000.00000000.00000000.00000000	/1	
0.0.0.0	00000000.00000000.00000000.00000000	/0	IP space

Net Class	Addr Range	NetMask	Net Addr Bits	Host Addr Bits	Total Number of hosts	
A	0-127	255.0.0.0	8	24	16777216	(i.e. 114.0.0.0)
B	128-191	255.255.0.0	16	16	65536	(i.e. 150.0.0.0)
C	192-254	255.255.255.0	24	8	256	(i.e. 199.0.0.0)
D	224-239	(multicast)				
E	240-255	(reserved)				
F	208-215	255.255.255.240	28	4	16	
G	216/8	ARIN - North America				
G	217/8	RIPE NCC - Europe				
G	218-219/8	APNIC				
H	220-221	255.255.255.248	29	3	8	(reserved)
K	222-223	255.255.255.254	31	1	2	(reserved)

(ref: RFC1375 & http://www.iana.org/assignments/ipv4-address-space)
(http://www.iana.org/numbers.htm)

```
------------------------------------------------------------

The current list of special use prefixes:
        0.0.0.0/8
        127.0.0.0/8
        192.0.2.0/24
        10.0.0.0/8
        172.16.0.0/12
        192.168.0.0/16
        169.254.0.0/16
        all D/E space
(ref: RFC1918 http://www.rfc-editor.org/rfc/rfc1918.txt   )
(       or     ftp://ftp.isi.edu/in-notes/rfc1918.txt     )
(rfc search:   http://www.rfc-editor.org/rfcsearch.html   )
(              http://www.ietf.org/ietf/1id-abstracts.txt )
(              http://www.ietf.org/shadow.html            )


Martians: (updates at: www.iana.org/assignments/ipv4-address-space )
 no ip source-route
 access-list 100 deny   ip host 0.0.0.0 any
  deny ip 0.0.0.0         0.255.255.255  any log  ! antispoof
  deny ip 0.0.0.0 0.255.255.255  0.0.0.0 255.255.255.255 ! antispoof
  deny ip any             255.255.255.128 0.0.0.127 ! antispoof
  deny ip host            0.0.0.0        any log  ! antispoof
  deny ip host            [router intf]  [router intf] ! antispoof
  deny ip xxx.xxx.xxx.0   0.0.0.255      any log  ! lan area
  deny ip 0/8             0.255.255.255  any log  ! IANA - Reserved
  deny ip 1/8             0.255.255.255  any log  ! IANA - Reserved
  deny ip 2/8             0.255.255.255  any log  ! IANA - Reserved
  deny ip 5/8             0.255.255.255  any log  ! IANA - Reserved
  deny ip 7/8             0.255.255.255  any log  ! IANA - Reserved
  deny ip 10.0.0.0        0.255.255.255  any log  ! IANA - Private Use
  deny ip 23/8            0.255.255.255  any log  ! IANA - Reserved
  deny ip 27/8            0.255.255.255  any log  ! IANA - Reserved
  deny ip 31/8            0.255.255.255  any log  ! IANA - Reserved
  deny ip 36-37/8         0.255.255.255  any log  ! IANA - Reserved
  deny ip 39/8            0.255.255.255  any log  ! IANA - Reserved
  deny ip 41-42/8         0.255.255.255  any log  ! IANA - Reserved
  deny ip 50/8            0.255.255.255  any log  ! IANA - Reserved
  deny ip 58-60/8         0.255.255.255  any log  ! IANA - Reserved
  deny ip 69-79/8         0.255.255.255  any log  ! IANA - Reserved
  deny ip 82-95/8         0.255.255.255  any log  ! IANA - Reserved
  deny ip 96-126/8        0.255.255.255  any log  ! IANA - Reserved
  deny ip 127/8           0.255.255.255  any log  ! IANA - Reserved
  deny ip 169.254.0.0     0.0.255.255    any log  ! link-local network
  deny ip 172.16.0.0      0.15.255.255   any log  ! reserved
  deny ip 192.168.0.0     0.0.255.255    any log  ! reserved
  deny ip 192.0.2.0       0.0.0.255      any log  ! test network
  deny ip 197/8           0.255.255.255  any log  ! IANA - Reserved
  deny ip 220/8           0.255.255.255  any log  ! IANA - Reserved
  deny ip 222-223/8       0.255.255.255  any log  ! IANA - Reserved
  deny ip 224.0.0.0       31.255.255.255 any log  ! multicast
  deny ip 224.0.0.0       15.255.255.255 any log  ! unless MBGP-learned
routes
  deny ip 224-239/8       0.255.255.255  any log  ! IANA - Multicast
  deny ip 240-255/8       0.255.255.255  any log  ! IANA - Reserved
```

```
filtered source addresses
  0/8                 ! broadcast
  10/8                ! RFC 1918 private
  127/8               ! loopback
  169.254.0/16        ! link local
  172.16.0.0/12       ! RFC 1918 private
  192.0.2.0/24        ! TEST-NET
  192.168.0/16        ! RFC 1918 private
  224.0.0.0/4         ! class D multicast
  240.0.0.0/5         ! class E reserved
  248.0.0.0/5         ! reserved
  255.255.255.255/32  ! broadcast

ARIN administrated blocks: (http://www.arin.net/regserv/IPStats.html)
   24.0.0.0/8 (portions of)
   63.0.0.0/8
   64.0.0.0/8
   65.0.0.0/8
   66.0.0.0/8
  196.0.0.0/8
  198.0.0.0/8
  199.0.0.0/8
  200.0.0.0/8
  204.0.0.0/8
  205.0.0.0/8
  206.0.0.0/8
  207.0.0.0/8
  208.0.0.0/8
  209.0.0.0/8
  216.0.0.0/8
------------------------------------------------------------

well known ports: (rfc1700.txt)
 www.iana.org/assignments/port-numbers

protocol numbers:
 www.iana.org/assignments/protocol-numbers
 www.iana.org/numbers.htm

ICMP(Types/Codes)
 Testing Destination Reachability & Status
  (0/0)  Echo-Reply
  (8/0)  Echo
 Unreachable Destinations
  (3/0)  Network Unreachable
  (3/1)  Host Unreachable
  (3/2)  Protocol Unreachable
  (3/3)  Port Unreachable
  (3/4)  Fragmentaion Needed and DF set (Pkt too big)
  (3/5)  Source Route Failed
  (3/6)  Network Unknown
  (3/7)  Host Unknown
  (3/9)  DOD Net Prohibited
  (3/10) DOD Host Prohibited
  (3/11) Net TOS Unreachable
  (3/12) Host TOS Unreachable
```

```
  (3/13) Administratively Prohibited
  (3/14) Host Precedence Unreachable
  (3/15) Precedence Unreachable
 Flow Control
  (4/0)  Source-Quench [RFC 1016]
 Route Change Requests from Gateways
  (5/0)  Redirect Datagrams for the Net
  (5/1)  Redirect Datagrams for the Host
  (5/2)  Redirect Datagrams for the TOS and Net
  (5/3)  Redirect Datagrams for the TOS and Host
 Router
  (6/-)  Alternate-Address
  (9/0)  Router-Advertisement
  (10/0) Router-Solicitation
 Detecting Circular or Excessively Long Routes
  (11/0) Time to Live Count Exceeded
  (11/1) Fragment Reassembly Time Exceeded
 Reporting Incorrect Datagram Headers
  (12/0) Parameter-Problem
  (12/1) Option Missing
  (12/2) No Room for Option
 Clock Synchronization and Transit Time Estimation
  (13/0) Timestamp-Request
  (14/0) Timestamp-Reply
 Obtaining a Network Address (RARP Alternative)
  (15/0) Information-Request
  (16/0) Information-Reply
 Obtaining a Subnet Mask [RFC 950]
  (17/0) Address Mask-Request
  (18/0) Address Mask-Reply
 Other
  (30/0) Traceroute
  (31/0) Conversion-Error
  (32/0) Mobile-Redirect

Ref: [RFC 792] [RFC 896] [RFC 950] [RFC 1016]

www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/sw_5_3/cofigide/qos.htm#
19774



Decimal system Prefix's
              Factor               Exponent  Prefix
-----------------------------------------------------
 1 000 000 000 000 000 000 000 000...10^24....yotta
     1 000 000 000 000 000 000 000...10^21....zetta
         1 000 000 000 000 000 000...10^18....exa
             1 000 000 000 000 000...10^15....peta
                 1 000 000 000 000...10^12....tera
                     1 000 000 000...10^9.....giga
                         1 000 000...10^6.....mega
                             1 000...10^3.....kilo
                               100...10^2.....hecto
                                10...10^1.....deka
                               0.1...10^-1....deci
                              0.01...10^-2....centi
```

```
                            0.001...10^-3....milli
                        0.000 001...10^-6....micro
                    0.000 000 001...10^-9....nano
                0.000 000 000 001...10^-12...pico
            0.000 000 000 000 001...10^-15...femto
        0.000 000 000 000 000 001...10^-18...atto
    0.000 000 000 000 000 000 001...10^-21...zepto
0.000 000 000 000 000 000 000 001...10^-24...yocto
-------------------------------------------------

Convert Fahrenheit <> Celsius:
 Celsius = (Fahrenheit - 32) / 1.8
 Fahrenheit = (Celsius * 1.8) + 32
```