

Working With Class B Address **128.10.0.0**

Max # Of Subnets	# Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.X.Y
200	8	193	129	254	129.10.193.129

200 Subnets			
Network ID		Subnet	Host
NNNN NNNN	NNNN NNNN	SSSS SSSS	HHHH HHHH
1000 0000	0000 1010	1100 0001	1000 0001
128	10	193	129

128	64	32	16	8	4	2	1
1	1	0	0	0	0	0	1
1	0	0	0	0	0	0	1

Subnet Mask			
Network ID		Subnet	Host
1111 1111	1111 1111	1111 1111	0000 0000
255	255	255	0

124

$$\begin{array}{r} \underline{00} \\ 01 \\ 10 \\ \underline{11} \end{array}$$

# Of Bits	Max # Of Subnets
2	$2^2 - 2 = 2$
3	$2^3 - 2 = 6$
4	$2^4 - 2 = 14$
5	$2^5 - 2 = 30$
6	$2^6 - 2 = 62$
7	$2^7 - 2 = 126$
8	$2^8 - 2 = 254$
9	$2^9 - 2 = 510$
10	$2^{10} - 2 = 1022$
11	$2^{11} - 2 = 2046$
12	$2^{12} - 2 = 4094$
13	$2^{13} - 2 = 8190$

1

A	B	$A \vee B$	$A \wedge B$
0	0	0	0
0	1	1	0
1	0	1	0
1	1	1	1

128 . 10 . 1 . 15

1000 0000	0000 1010	0000 0001	0600 1111
1111 1111	1111 1111	1111 1111	0600 0000
1000 0000	0000 1010	0000 0001	0600 0000

128 . 10 . 1 . 0

128 - 10 . 32 . 15

1000 0600	0600 1010	0010 0010	0000 1111
1111 1111	1111 1111	1110 0000	0000 0000
1000 0600	0000 1010	0610 0000	0000 0600

128

10

32

0

Working With Class B Address **128.10.0.0**

Max # Of Subnets	# Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.X.Y
120	7	119	68	510	128.10.238.68
120	7	105	352	510	128.10.211.16

120 Subnets				
Network ID		Subnet/Host		Host
NNNN NNNN	NNNN NNNN	SSSS SSSH	HHHH HHHH	
1000 0000	0000 1010	1110 1110	0166 0106	
128	10	238	68	

256	128	64	32	16	8	4	2	1
0	0	1	0	0	0	1	0	0

352
256

96

120 Subnets				
Network ID		Subnet/Host		Host
NNNN NNNN	NNNN NNNN	SSSS SSSH	HHHH HHHH	
1000 0000	0000 1010	1101 0111	0116 0000	
128	10	211	96	

256	128	64	32	16	8	4	2	1
1	0	1	1	0	0	0	0	1

Subnet Mask				
Network ID		Subnet/Host		Host
1111 1111	1111 1111	1111 1110	0000 0000	
255	255	254	0	

123

# Of Bits	Max # Of Subnets
2	$2^2 - 2 = 2$
3	$2^3 - 2 = 6$
4	$2^4 - 2 = 14$
5	$2^5 - 2 = 30$
6	$2^6 - 2 = 62$
7	$2^7 - 2 = 126$
8	$2^8 - 2 = 254$
9	$2^9 - 2 = 510$
10	$2^{10} - 2 = 1022$
11	$2^{11} - 2 = 2046$
12	$2^{12} - 2 = 4094$
13	$2^{13} - 2 = 8190$

Working With Class B Address **128.10.0.0**

Max # Of Subnets	# Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.X.Y
58	6	45	98	1022	128.10.180.98
58	6	48	598	1022	128.10.194.86

58 Subnets					
Network ID		Subnet/Host		Host	
NNNN NNNN	NNNN NNNN	SSSS SSHH	HHHH HHHH		
1000 0000	0000 1010	1011 0100	0110 0010		
128	10	180	98		

512	256	128	64	32	16	8	4	2	1
0	0	0	1	1	0	0	0	1	0

58 Subnets					
Network ID		Subnet/Host		Host	
NNNN NNNN	NNNN NNNN	SSSS SSHH	HHHH HHHH		
1000 0000	0000 1010	1100 0010	0101 0110		
128	10	194	86		

512	256	128	64	32	16	8	4	2	1
1	0	0	1	0	1	0	0	0	0

Subnet Mask					
Network ID		Subnet/Host		Host	
1111 1111	1111 1111	1111 1100	0000 0000		
255	255	252	0		

✓ 22

598
512

86
64

22
16

6

# Of Bits	Max # Of Subnets
2	$2^2 - 2 = 2$
3	$2^3 - 2 = 6$
4	$2^4 - 2 = 14$
5	$2^5 - 2 = 30$
6	$2^6 - 2 = 62$
7	$2^7 - 2 = 126$
8	$2^8 - 2 = 254$
9	$2^9 - 2 = 510$
10	$2^{10} - 2 = 1022$
11	$2^{11} - 2 = 2046$
12	$2^{12} - 2 = 4094$
13	$2^{13} - 2 = 8190$

Working With Class B Address **128.10.0.0**

Max # Of Subnets	# Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.X.Y
29	5	28	59	2046	128.10.224.59
29	5	25	1069	2046	129.10.204.45

29 Subnets			
Network ID		Subnet/Host	Host
NNNN NNNN	NNNN NNNN	SSSH HHHH	HHHH HHHH
1000 0000	0000 1010	1110 0000	0011 1011
128	10	224	59

1024	512	256	128	64	32	16	8	4	2	1
0	0	0	0	0	1	1	1	0	1	1

29 Subnets			
Network ID		Subnet/Host	Host
NNNN NNNN	NNNN NNNN	SSSS SHHH	HHHH HHHH
1000 0000	0000 1010	1100 1100	0010 1101
128	10	204	45

1024	512	256	128	64	32	16	8	4	2	1
1	0	0	0	0	1	0	1	0	0	1

Subnet Mask			
ID Network	Subnet/Host	Host	
1111 1111	1111 1000	0000 0000	
255	248	0	

(2)

1069
1024

45
32

13

# Of Bits	Max # Of Subnets
2	$2^2 - 2 = 2$
3	$2^3 - 2 = 6$
4	$2^4 - 2 = 14$
5	$2^5 - 2 = 30$
6	$2^6 - 2 = 62$
7	$2^7 - 2 = 126$
8	$2^8 - 2 = 254$
9	$2^9 - 2 = 510$
10	$2^{10} - 2 = 1022$
11	$2^{11} - 2 = 2046$
12	$2^{12} - 2 = 4094$
13	$2^{13} - 2 = 8190$

Working With Class A Address **9.0.0.0**

Max # Of Subnets	# Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.X.Y
2000	11	1953	1119	8190	9.246.86.95
2000	11	1949	704	8190	9.243.162.192

704
512
192

1949
1024
925
512
413
256
157
128
29
16
13

2000 Subnets			
Network ID	Subnet	Subnet/Host	Host
NNNN NNNN	SSSS SSSS	SSSH HHHH	HHHH HHHH
0000 1001	1111 0100	0016 0100	0101 1111
9	244	36	95

4096	2048	1024	512	256	128	64	32	16	8	4	2	1
0	0	1	1	1	1	0	1	0	0	0	0	1

2000 Subnets			
Network ID	Subnet	Subnet/Host	Host
NNNN NNNN	SSSS SSSS	SSSH HHHH	HHHH HHHH
0000 1001	1111 0011	1010 0010	1100 0000
9	243	162	192

4096	2048	1024	512	256	128	64	32	16	8	4	2	1
0	0	0	1	1	1	0	0	1	1	1	0	0

Subnet Mask			
Network ID	Subnet	Subnet/Host	Host
1111 1111	1111 1111	1110 0000	0000 0000
255	255	224	0

119

# Of Bits	Max # Of Subnets
2	$2^2 - 2 = 2$
3	$2^3 - 2 = 6$
4	$2^4 - 2 = 14$
5	$2^5 - 2 = 30$
6	$2^6 - 2 = 62$
7	$2^7 - 2 = 126$
8	$2^8 - 2 = 254$
9	$2^9 - 2 = 510$
10	$2^{10} - 2 = 1022$
11	$2^{11} - 2 = 2046$
12	$2^{12} - 2 = 4094$
13	$2^{13} - 2 = 8190$