

Working With Class B Address 128.10.0.0

Max # Of Subnets	Min # Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.x.y
200	8	193	129	254	128-10-193-129

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

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  
255.255.255.0

# 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	$2^{13} - 2 = 8190$
14	$2^{14} - 2 = 16382$

Working With Class B Address 128.10.0.0

Max # Of Subnets	Min # Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.x.y
120	7	119	68	510	128-10.238-68

120 Subnets					
Network ID			Subnet/Host		Host
NNNN	NNNN	NNNN	NNNN	SSSS SSSH	HHHH HHHH
1000	0000	0000	1010	110 1110	0100 0100
128		10		238	68

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

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

# 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	$2^{13} - 2 = 8190$
14	$2^{14} - 2 = 16382$

10  
230

1110 1110  
11 11  
121 64 32 84 2 = 238

1000\_0

119  
68

23  
255.255.254.0

Working With Class B Address 128.10.0.0

Max # Of Subnets	Min # Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.x.y
120	7	105	352	510	128.16.211.96

$$\begin{array}{r} 352 \\ - 256 \\ \hline 96 \end{array}$$

120 Subnets			
Network ID		Subnet/Host	Host
NNNN	NNNN	SSSS SSSH	HHHH HHHH
1000	0000	1101 0011	0110 0000
128	10	211	96

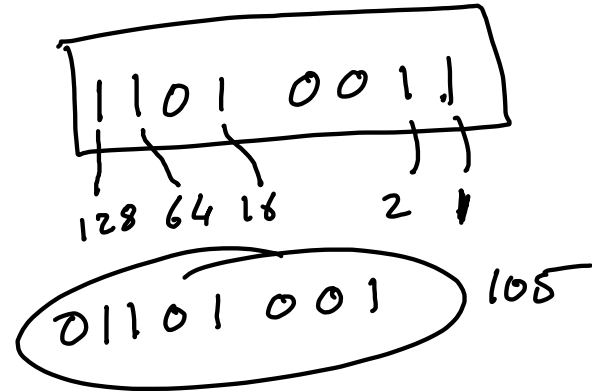
256	128	64	32	16	8	4	2	1
		1	1	0	1	0	0	1
1	0	1	1	0	0	0	0	0

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

$$\begin{array}{l} /23 \\ 255 \cdot 255 \cdot 254 \cdot 0 \end{array}$$

11010011

# 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	$2^{13} - 2 = 8190$
14	$2^{14} - 2 = 16382$



Working With Class B Address 128.10.0.0

Max # Of Subnets	Min # Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.x.y
58	6	45	98	1022	128.10.180.98

98

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

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

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

122

# 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	$2^{13} - 2 = 8190$
14	$2^{14} - 2 = 16382$

10110100

Working With Class B Address 128.10.0.0

598  
 512  
 ---  
 76  
 64  
 ---  
 13  
 8  
 ---  
 5

Max # Of Subnets	Min # Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.x.y
58	6	48	598	1022	128.10.194.77

58 Subnets							
Network ID			Subnet/Host		Host		
NNNN	NNNN	NNNN	NNNN	SSSS	SSHH	HHHH	HHHH
1000	0000	0000	1010	1100	0010	0100	1101
128		10		194		77	

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

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

122

# 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	$2^{13} - 2 = 8190$
14	$2^{14} - 2 = 16382$

Working With Class B Address 128.10.0.0

Max # Of Subnets	Min # Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.x.y
29	5	28	59	2046	128.10.224.59

29 Subnets					
Network ID			Subnet/Host		Host
NNNN	NNNN	NNNN	NNNN	SSSS	HHH
1000	0000	0000	1010	1110	0000
128		10		224	59

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

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

121

# 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	$2^{13} - 2 = 8190$
14	$2^{14} - 2 = 16382$

Working With Class B Address 128.10.0.0

1069  
1024  
-----  
45

Max # Of Subnets	Min # Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.x.y
29	5	25	1069	2046	128.10.204.45

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	1	0	0	1
1	0	0	0	0	1	0	1	1	0	1

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

121

# 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	$2^{13} - 2 = 8190$
14	$2^{14} - 2 = 16382$

1953  
 1024  
 ---  
 929  
 512  
 ---  
 417  
 256  
 ---  
 161  
 128  
 ---  
 33

Working With Class A Address 9.0.0.0

Max # Of Subnets	Min # Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.x.y
2000	11	1953	1119	8190	9.244.36.95

1119  
 1024  
 ---  
 95  
 64  
 ---  
 31

↓ 2000 Subnets

Network ID	Subnet	Subnet/Host	Host
NNNN NNNN	SSSS SSSS	SSSH HHHH	HHHH HHHH
0000 1001	1111 0100	0010 0100	0101 1111
9	244	36	95

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

Subnet Mask

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

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	$2^{13} - 2 = 8190$
14	$2^{14} - 2 = 16382$



Working With Class A Address 9.0.0.0

1949  
 1024  
 -----  
 925  
 512  
 -----  
 413  
 256  
 -----  
 157  
 128  
 -----  
 29  
 16  
 -----  
 13

Max # Of Subnets	Min # Of Bits	Subnet #	Host #	Max # Of Hosts	128.10.x.y
2000	11	1949	704	8190	9.243.162-192

704  
 512  
 -----  
 192  
 128  
 -----  
 64  
 64  
 -----  
 0

2000 Subnets			
Network ID	Subnet	Subnet/Host	Host
NNNN NNNN	SSSS SSSS	SSSH HHHH	HHHH HHHH
0000 1001	111 0611	1010 0010	1100 0000
9	243	162	192

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

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

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	$2^{13} - 2 = 8190$
14	$2^{14} - 2 = 16382$

1



IP 148.213.187.211  
 SNM 255.255.252.0 /22

- a) Network #: 38,601
- b) Subnet #: 46
- c) Host #: 979

148                      213                      187                      211

	1	0	0	1	0	1	0	0	,	1	0	1	0	1	0	1	,	1	0	1	1	1	0	1	1	1	,	1	1	0	1	0	0	1	1
SNM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0					
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	S	S	H	H	H	H	H	H	H	H	H						
	32	16	8	4	2	1		32	16	8	4	2	1	32	16	8	4	2	1	512	256	128	64	32	16	8	4	2	1						
	1	0	0	1	0	1	0	0	1	1	0	1	0	1	0	1	1	0	1	1	1	0	1	1	1	1	0	1	0	0	1	1			

IP 189.205.222.195

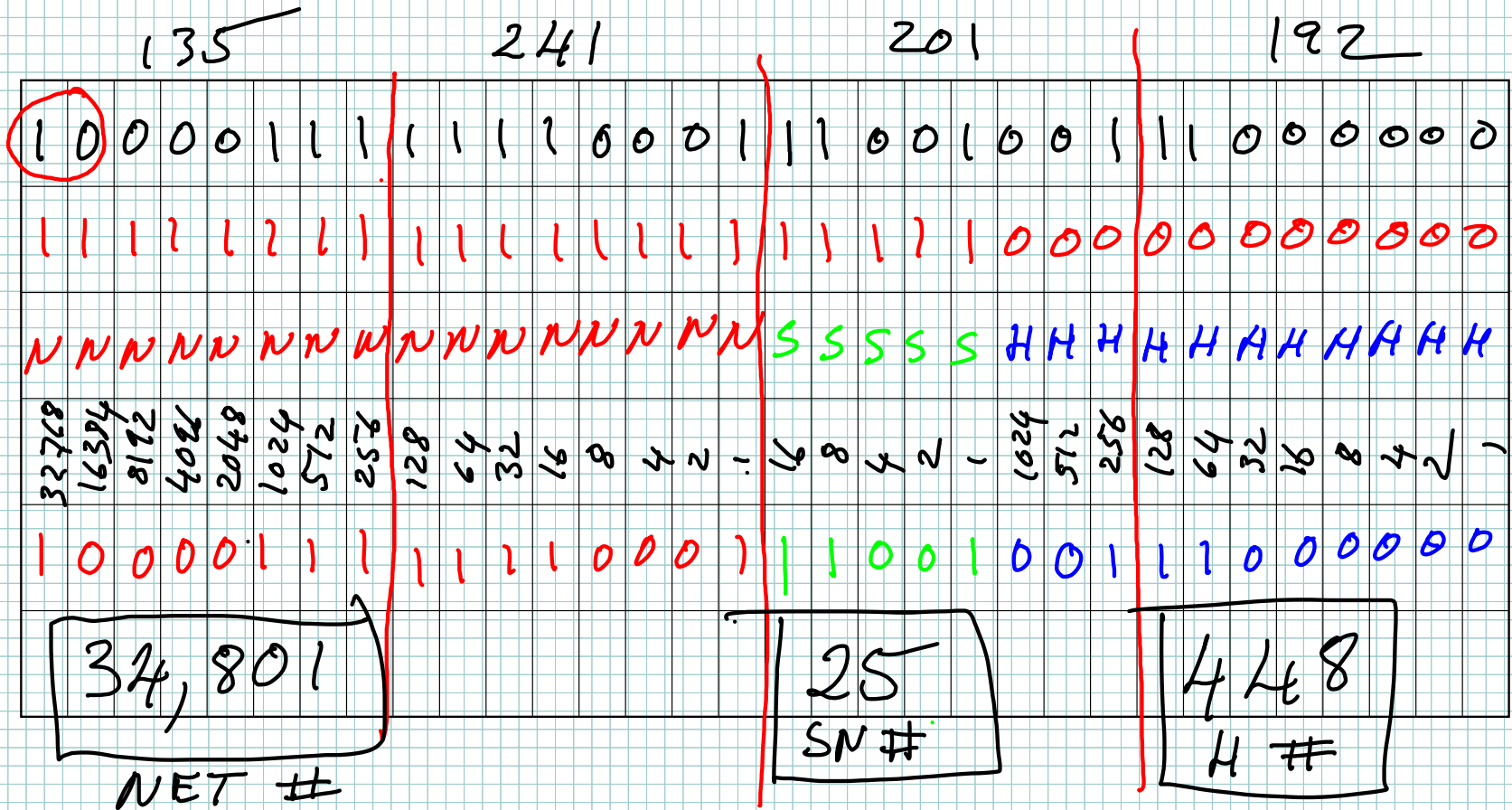
SNM 255.255.255.128

- a) Network #: 48,589
- b) Subnet #: 445
- c) Host #: 69

	189								205								222								195								
	1	0	1	1	1	0	1	1	1	0	0	1	1	0	1	1	1	0	1	1	1	1	0	1	1	0	0	0	0	1	1		
SNM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	S	S	S	S	S	S	S	S	S	S	S	S	S	S		
	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	8	4	2	1	
	32	16	8	4	2	1	256	128	64	32	16	8	4	2	1	256	128	64	32	16	8	4	2	1	256	128	64	32	16	8	4	2	1
	1	0	1	1	1	0	1	1	1	0	0	1	1	0	1	1	1	0	1	1	1	1	0	1	1	0	0	0	0	1	1		

IP 135.241.201.192

SNM 255.255.248.0



IP 96.233.199.239

SNM 255.255.240.0

