

Determining a Subnet Range

Problem #1

Networks	2	4	8	16	32	64	128	256	512	1,024	2,048	4,096	8,192	16,384			
Hosts	65,536	32,768	16,384	8,192	4,096	2,048	1,024	512	256	128	64	32	16	8	4		
Mask	128	192	224	240	248	252	254	255	128	192	224	240	248	252	254	255	
Borrowed	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
172.24.	<u>128</u>	<u>64</u>	<u>32</u>	<u>16</u>	<u>8</u>	<u>4</u>	<u>2</u>	<u>1</u>	<u>128</u>	<u>64</u>	<u>32</u>	<u>16</u>	<u>8</u>	<u>4</u>	<u>2</u>	<u>1</u>	

Class: _____
 Default Mask: _____
 Custom Mask: _____
 Bits Borrowed: _____
 Subnets: _____
 Total Hosts: _____
 Usable Hosts: _____

First 2 Octets Omitted to Save Space

Net	Hosts	Net	Usable	Broad
1				
2				
22				
44				
84				
127				
228				
312				
500				
750				
1080				
1500				
2300				
3600				
4090				

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Problem #1 - Answers

Networks	2	4	8	16	32	64	128	256	512	1,024	2,048	4,096	8,192	16,384		
Hosts	65,536	32,768	16,384	8,192	4,096	2,048	1,024	512	256	128	64	32	16	8	4	
Mask	128	192	224	240	248	252	254	255	128	192	224	240	248	252	254	255
Borrowed	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
172.24.	128	64	32	16	8	4	2	1	128	64	32	16	8	4	2	1

Class:	<u>B</u>
Default Mask:	<u>255.255.0.0</u>
Custom Mask:	<u>255.255.255.240</u>
Bits Borrowed:	<u>12</u>
Subnets:	<u>4096</u>
Total Hosts:	<u>16</u>
Usable Hosts:	<u>14</u>

Net	Hosts																	Net	Usable	Broad
1																		0.0	0.1 - 0.14	.0.15
2																		0.16	0.17 - 0.30	.0.31
22								1	0	1	0	1						1.80	1.81 - 1.94	1.95
44							1	0	1	0	1	1						2.176	2.177 - 2.190	2.191
84						1	0	1	0	0	1	1						5.48	5.49 - 5.62	5.63
127						1	1	1	1	1	1	0						7.224	7.225 - 7.238	7.239
228					1	1	1	0	0	0	1	1						14.48	14.49 - 14.62	14.63
312				1	0	0	1	1	0	1	1	1						19.112	19.113 - 19.126	19.127
500				1	1	1	1	1	0	0	1	1						31.48	31.49 - 31.62	31.63
750			1	0	1	1	1	0	1	1	0	1						46.208	46.209 - 46.222	46.223
1080			1	0	0	0	0	1	1	0	1	1	1					67.112	67.113 - 67.126	67.127
1500			1	0	1	1	1	0	1	1	0	1	1					93.176	93.177 - 93.190	93.191
2300	1	0	0	0	1	1	1	1	1	0	1	1						143.176	143.177 - 143.190	143.191
3600	1	1	1	0	0	0	0	0	0	1	1	1	1					224.240	224.241 - 224.254	224.255
4090	1	1	1	1	1	1	1	1	1	0	0	1						255.144	255.145 - 255.158	255.159