

How Many Bits to Barrow

For each set of network and host requirements, figure out how many bits you could barrow.

Networks	2	4	8	16	32	64		
Hosts	254	126	62	30	14	6	2	
Mask	128	192	224	240	248	252	254	255
Borrowed	1	2	3	4	5	6	7	8
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Networks	Hosts	Borrow
8	28	3
31	2	5, 6
3	12	
5	29	
7	12	
15	5	

Networks	2	4	8	16	32	64	128	256	512	1024	2048	4096	8192	16384		
Hosts	65534	32766	16382	8190	4094	2046	1022	510	254	126	62	30	14	6	2	
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
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Networks	Hosts	Borrow
8,000	5	
5	4,000	
65	250	
500	65	
2,000	18	
2	448	

Networks	2	4	8	16	32	64	128	256	512	1024	2048	4096	8192	16384	32766	65534	131k	262k	524k	1.04M	2.09M	4.19M		
Hosts	16.77M	8.38M	4.19M	2.09M	1.04M	524K	262K	131K	65534	32766	16382	8190	4094	2046	1022	510	254	126	62	30	14	6	2	
Mask	128	192	224	240	248	252	254	255	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	17	18	19	20	21	22	23	24
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Networks	Hosts	Borrow
500	32k	
4k	1k	
260k	55	
2	1M	
100	55k	
2k	7k	

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Answers:

Networks	2	4	8	16	32	64		
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Mask	128	192	224	240	248	252	254	255
Borrowed	1	2	3	4	5	6	7	8
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Networks	Hosts	Borrow
8	28	3
31	2	5, 6
3	12	2, 3, 4
5	29	3
7	12	3, 4
15	5	4, 5

Networks	2	4	8	16	32	64	128	256	512	1024	2048	4096	8192	16384		
Hosts	65534	32766	16382	8190	4094	2046	1022	510	254	126	62	30	14	6	2	
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
###.###.	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Networks	Hosts	Borrow
8,000	5	13
5	4,000	3, 4
65	250	7, 8
500	65	9
2,000	18	11
2	448	1, 2, 3, 4, 5, 6, 7

Networks	2	4	8	16	32	64	128	256	512	1024	2048	4096	8192	16384	32766	65534	131k	262k	524k	1.04M	2.09M	4.19M		
Hosts	16.77M	8.38M	4.19M	2.09M	1.04M	524K	262K	131K	65534	32766	16382	8190	4094	2046	1022	510	254	126	62	30	14	6	2	
Mask	128	192	224	240	248	252	254	255	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	17	18	19	20	21	22	23	24
###.###.	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Networks	Hosts	Borrow
500	32k	9
4k	1k	12, 13, 14
260k	55	18
2	1M	1, 2, 3, 4
100	55k	7, 8
2k	7k	11