


IP ADDRESS BLOCK SIZE EQUIVALENTS

in Classful Addressing, IPv4, and IPv6

 CIDR prefixes in blue boxes are common distribution sizes.



CIDR	Classful <i>unused since 1993</i>	IPv4 <i>deployed in 1981</i>	IPv6 <i>deployed in 1999</i>
/0		2 ³² 4,294,967,296	2 ¹²⁸ 340,282,366,920,938,463,463,374,607,431,768,211,456
/1		2 ³¹ 2,147,483,648	2 ¹²⁷ 170,141,183,460,469,231,731,687,303,715,884,105,728
/2		2 ³⁰ 1,073,741,824	2 ¹²⁶ 85,070,591,730,234,615,865,843,651,857,942,052,864
/3		2 ²⁹ 536,870,912	2 ¹²⁵ 42,535,295,865,117,307,932,921,825,928,971,026,432
/4		2 ²⁸ 268,435,456	2 ¹²⁴ 21,267,647,932,558,653,966,460,912,964,485,513,216
/5		2 ²⁷ 134,217,728	2 ¹²³ 10,633,823,966,279,326,983,230,456,482,242,756,608
/6		2 ²⁶ 67,108,864	2 ¹²² 5,316,911,983,139,663,491,615,228,241,121,378,304
/7		2 ²⁵ 33,554,432	2 ¹²¹ 2,658,455,991,569,831,745,807,614,120,560,689,152
/8	A 16,777,216	2 ²⁴ 16,777,216	2 ¹²⁰ 1,329,227,995,784,915,872,903,807,060,280,344,576
/9		2 ²³ 8,388,608	2 ¹¹⁹ 664,613,997,892,457,936,451,903,530,140,172,288
/10		2 ²² 4,194,304	2 ¹¹⁸ 332,306,998,946,228,968,225,951,765,070,086,144
/11		2 ²¹ 2,097,152	2 ¹¹⁷ 166,153,499,473,114,484,112,975,882,535,043,072
/12		2 ²⁰ 1,048,576	2 ¹¹⁶ 83,076,749,736,557,242,056,487,941,267,521,536
/13		2 ¹⁹ 524,288	2 ¹¹⁵ 41,538,374,868,278,621,028,243,970,633,760,768
/14		2 ¹⁸ 262,144	2 ¹¹⁴ 20,769,187,434,139,310,514,121,985,316,880,384
/15		2 ¹⁷ 131,072	2 ¹¹³ 10,384,593,717,069,655,257,060,992,658,440,192
/16	B 65,536	2 ¹⁶ 65,536	2 ¹¹² 5,192,296,858,534,827,628,530,496,329,220,096
/17		2 ¹⁵ 32,768	2 ¹¹¹ 2,596,148,429,267,413,814,265,248,164,610,048
/18		2 ¹⁴ 16,384	2 ¹¹⁰ 1,298,074,214,633,706,907,132,624,082,305,024
/19		2 ¹³ 8,192	2 ¹⁰⁹ 649,037,107,316,853,453,566,312,041,152,512
/20		2 ¹² 4,096	2 ¹⁰⁸ 324,518,553,658,426,726,783,156,020,576,256
/21		2 ¹¹ 2,048	2 ¹⁰⁷ 162,259,276,829,213,363,391,578,010,288,128
/22		2 ¹⁰ 1,024	2 ¹⁰⁶ 81,129,638,414,606,681,695,789,005,144,064
/23		2 ⁹ 512	2 ¹⁰⁵ 40,564,819,207,303,340,847,894,502,572,032
/24	C 256	2 ⁸ 256	2 ¹⁰⁴ 20,282,409,603,651,670,423,947,251,286,016
/25		2 ⁷ 128	2 ¹⁰³ 10,141,204,801,825,835,211,973,625,643,008
/26		2 ⁶ 64	2 ¹⁰² 5,070,602,400,912,917,605,986,812,821,504
/27		2 ⁵ 32	2 ¹⁰¹ 2,535,301,200,456,458,802,993,406,410,752
/28		2 ⁴ 16	2 ¹⁰⁰ 1,267,650,600,228,229,401,496,703,205,376
/29		2 ³ 8	2 ⁹⁹ 633,825,300,114,114,700,748,351,602,688
/30		2 ² 4	2 ⁹⁸ 316,912,650,057,057,350,374,175,801,344
/31		2 ¹ 2	2 ⁹⁷ 158,456,325,028,528,675,187,087,900,672
/32		2 ⁰ 1	2 ⁹⁶ 79,228,162,514,264,337,593,543,950,336
/33			2 ⁹⁵ 39,614,081,257,132,168,796,771,975,168
/34			2 ⁹⁴ 19,807,040,628,566,084,398,385,987,584
/35			2 ⁹³ 9,903,520,314,283,042,199,192,993,792
/36			2 ⁹² 4,951,760,157,141,521,099,596,496,896
/37			2 ⁹¹ 2,475,880,078,570,760,549,798,248,448
/38			2 ⁹⁰ 1,237,940,039,285,380,274,899,124,224

CIDR	Classful <i>unused since 1993</i>	IPv4 <i>deployed in 1981</i>	IPv6 <i>deployed in 1999</i>	
/39			2 ^{^89}	618,970,019,642,690,137,449,562,112
/40			2 ^{^88}	309,485,009,821,345,068,724,781,056
/41			2 ^{^87}	154,742,504,910,672,534,362,390,528
/42			2 ^{^86}	77,371,252,455,336,267,181,195,264
/43			2 ^{^85}	38,685,626,227,668,133,590,597,632
/44			2 ^{^84}	19,342,813,113,834,066,795,298,816
/45			2 ^{^83}	9,671,406,556,917,033,397,649,408
/46			2 ^{^82}	4,835,703,278,458,516,698,824,704
/47			2 ^{^81}	2,417,851,639,229,258,349,412,352
/48			2 ^{^80}	1,208,925,819,614,629,174,706,176
/49			2 ^{^79}	604,462,909,807,314,587,353,088
/50			2 ^{^78}	302,231,454,903,657,293,676,544
/51			2 ^{^77}	151,115,727,451,828,646,838,772
/52			2 ^{^76}	75,557,863,725,914,323,419,136
/53			2 ^{^75}	37,778,931,862,957,161,709,568
/54			2 ^{^74}	18,889,465,931,478,580,854,784
/55			2 ^{^73}	9,444,732,965,739,290,427,392
/56			2 ^{^72}	4,722,366,482,869,645,213,696
/57			2 ^{^71}	2,361,183,241,434,822,606,848
/58			2 ^{^70}	1,180,591,620,717,411,303,424
/59			2 ^{^69}	590,295,810,358,705,651,712
/60			2 ^{^68}	295,147,905,179,352,825,856
/61			2 ^{^67}	147,573,952,589,676,412,928
/62			2 ^{^66}	73,786,976,294,838,206,464
/63			2 ^{^65}	36,893,488,147,419,103,232
/64			2 ^{^64}	18,446,744,073,709,551,616
/65			2 ^{^63}	9,223,372,036,854,775,808
/66			2 ^{^62}	4,611,686,018,427,387,904
/67			2 ^{^61}	2,305,843,009,213,693,952
/68			2 ^{^60}	1,152,921,504,606,846,976
/69			2 ^{^59}	576,460,752,303,423,488
/70			2 ^{^58}	288,230,376,151,711,744
/71			2 ^{^57}	144,115,188,075,855,872
/72			2 ^{^56}	72,057,594,037,927,936
/73			2 ^{^55}	36,028,797,018,963,968
/74			2 ^{^54}	18,014,398,509,481,984
/75			2 ^{^53}	9,007,199,254,740,992
/76			2 ^{^52}	4,503,599,627,370,496
/77			2 ^{^51}	2,251,799,813,685,248
/78			2 ^{^50}	1,125,899,906,842,624
/79			2 ^{^49}	562,949,953,421,312
/80			2 ^{^48}	281,474,976,710,656
/81			2 ^{^47}	140,737,488,355,328
/82			2 ^{^46}	70,368,744,177,664
/83			2 ^{^45}	35,184,372,088,832
/84			2 ^{^44}	17,592,186,044,416

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/85			2 ⁴³	8,796,093,022,208
/86			2 ⁴²	4,398,046,511,104
/87			2 ⁴¹	2,199,023,255,552
/88			2 ⁴⁰	1,099,511,627,776
/89			2 ³⁹	549,755,813,888
/90			2 ³⁸	274,877,906,944
/91			2 ³⁷	137,438,953,472
/92			2 ³⁶	68,719,476,736
/93			2 ³⁵	34,359,738,368
/94			2 ³⁴	17,179,869,184
/95			2 ³³	8,589,934,592
/96			2 ³²	4,294,967,296
/97			2 ³¹	2,147,483,648
/98			2 ³⁰	1,073,741,824
/99			2 ²⁹	536,870,912
/100			2 ²⁸	268,435,456
/101			2 ²⁷	134,217,728
/102			2 ²⁶	67,108,864
/103			2 ²⁵	33,554,432
/104			2 ²⁴	16,777,216
/105			2 ²³	8,388,608
/106			2 ²²	4,194,304
/107			2 ²¹	2,097,152
/108			2 ²⁰	1,048,576
/109			2 ¹⁹	524,288
/110			2 ¹⁸	262,144
/111			2 ¹⁷	131,072
/112			2 ¹⁶	65,536
/113			2 ¹⁵	32,768
/114			2 ¹⁴	16,384
/115			2 ¹³	8,192
/116			2 ¹²	4,096
/117			2 ¹¹	2,048
/118			2 ¹⁰	1,024
/119			2 ⁹	512
/120			2 ⁸	256
/121			2 ⁷	128
/122			2 ⁶	64
/123			2 ⁵	32
/124			2 ⁴	16
/125			2 ³	8
/126			2 ²	4
/127			2 ¹	2
/128			2 ⁰	1

IPv6 CIDR PREFIX EQUIVALENTS

IPv6 Prefix	# of /48s	# of /56s	# of /64s
16	4,294,967,296	1,099,511,627,776	281,474,976,710,656
17	2,147,483,648	549,755,813,888	140,737,488,355,328
18	1,073,741,824	274,877,906,944	70,368,744,177,664
19	536,870,912	137,438,953,472	35,184,372,088,832
20	268,435,456	68,719,476,736	17,592,186,044,416
21	134,217,728	34,359,738,368	8,796,093,022,208
22	67,108,864	17,179,869,184	4,398,046,511,104
23	33,554,432	8,589,934,592	2,199,023,255,552
24	16,777,216	4,294,967,296	1,099,511,627,776
25	8,388,608	2,147,483,648	549,755,813,888
26	4,194,304	1,073,741,824	274,877,906,944
27	2,097,152	536,870,912	137,438,953,472
28	1,048,576	268,435,456	68,719,476,736
29	524,288	134,217,728	34,359,738,368
30	262,144	67,108,864	17,179,869,184
31	131,072	33,554,432	8,589,934,592
32	65,536	16,777,216	4,294,967,296
33	32,768	8,388,608	2,147,483,648
34	16,384	4,194,304	1,073,741,824
35	8,192	2,097,152	536,870,912
36	4,096	1,048,576	268,435,456
37	2,048	524,288	134,217,728
38	1,024	262,144	67,108,864
39	512	131,072	33,554,432
40	256	65,536	16,777,216
41	128	32,768	8,388,608
42	64	16,384	4,194,304
43	32	8,192	2,097,152
44	16	4,096	1,048,576
45	8	2,048	524,288
46	4	1,024	262,144
47	2	512	131,072
48	1	256	65,536
49		128	32,768
50		64	16,384
51		32	8,192
52		16	4,096
53		8	2,048
54		4	1,024
55		2	512
56		1	256
57			128
58			64
59			32
60			16
61			8
62			4
63			2
64			1