


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

CIDR	Classful <i>unused since 1993</i>	IPv4 <i>deployed in 1981</i>	IPv6 <i>deployed in 1999</i>	
/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
/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