IPv6 Cheat Sheet

inc. Addresses + Subnetting (CIDR)
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https://www.privex.io/

PRIVEX

An IPv6 address is a 128-bit address made up of hexadecimal characters

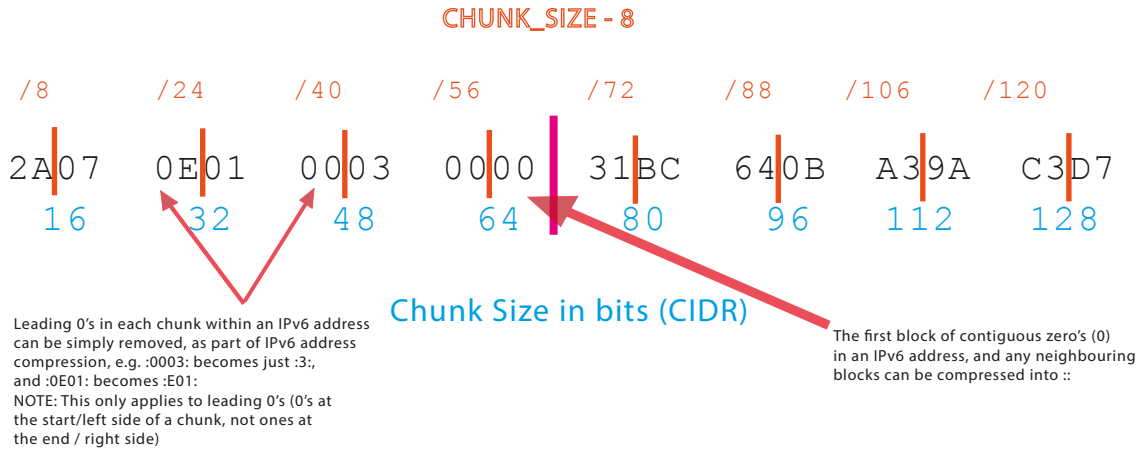
1 character (0-F) represents 4 bits (a nibble) binary: 0000 (0) to 1111 (F)
2 characters (00-FF) represents 8 bits (a byte) binary: 0000 0000 (00) to 1111 1111 (FF)

IPv6 addresses are made up of 8 "chunks" or "blocks"
1 chunk contains 4 hex characters equivalent to 16 bits per chunk

`2^X / 2^Y` = Number of X sized subnets in Y CIDR
Example: **`2^64 / 2^48 = 65,536`** (num of /64's in 1x /48)

Example IPv6 Address: ***`2a07:e01:3::31bc:640b:a39a:c3d7`***

CHUNK_SIZE - 8 = CIDR to use up to half the chunk as subnet



CIDR Bits	# of /64's	# of /56's	# of /48's	Address Range
64	1	0	0	2A07:ABCD:1234:ABCD:0000:0000:0000:0000 2A07:ABCD:1234:ABCD:FFFF:FFFF:FFFF:FFFF
60	16	0	0	2A07:ABCD:1234:ABC0:0000:0000:0000:0000 2A07:ABCD:1234:ABCF:FFFF:FFFF:FFFF:FFFF
56	256	1	0	2A07:ABCD:1234:AB00:0000:0000:0000:0000 2A07:ABCD:1234:ABFF:FFFF:FFFF:FFFF:FFFF
52	4,096	16	0	2A07:ABCD:1234:A000:0000:0000:0000:0000 2A07:ABCD:1234:AFFF:FFFF:FFFF:FFFF:FFFF
48	65,536	256	1	2A07:ABCD:1234:0000:0000:0000:0000:0000 2A07:ABCD:1234:FFFF:FFFF:FFFF:FFFF:FFFF
44	1 MIL	4096	16	2A07:ABCD:1230:0000:0000:0000:0000:0000 2A07:ABCD:123F:FFFF:FFFF:FFFF:FFFF:FFFF
40	16 MIL	65,536	256	2A07:ABCD:1200:0000:0000:0000:0000:0000 2A07:ABCD:12FF:FFFF:FFFF:FFFF:FFFF:FFFF
36	268 MIL	1 MIL	4,096	2A07:ABCD:1000:0000:0000:0000:0000:0000 2A07:ABCD:1FFF:FFFF:FFFF:FFFF:FFFF:FFFF
32	4.2 BIL	16 MIL	65,536	2A07:ABCD:0000:0000:0000:0000:0000:0000 2A07:ABCD:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
28	68.7 BIL	268 MIL	1 MIL	2A07:ABC0:0000:0000:0000:0000:0000:0000 2A07:ABCF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
24	1 TRIL	4.2 BIL	16 MIL	2A07:AB00:0000:0000:0000:0000:0000:0000 2A07:ABFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
20	17.5 TRIL	68.7 BIL	268 MIL	2A07:A000:0000:0000:0000:0000:0000:0000 2A07:AFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
16	281 TRIL	1 TRIL	4.2 BIL	2A07:0000:0000:0000:0000:0000:0000:0000 2A07:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
12	68.7 BIL	17.5 TRIL	68.7 BIL	2A00:0000:0000:0000:0000:0000:0000:0000 2A0F:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
8	72 QDRL	281 TRIL	1 TRIL	2A00:0000:0000:0000:0000:0000:0000:0000 2A0F:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF

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