Tables Useful in the Course

IPv4 Address Classes

Class	First Octet Values	Purpose
A	1 – 126	Unicast (large networks)
B	128 – 191	Unicast (medium-sized networks)
C	192 – 223	Unicast (small networks)
D	224 – 239	Multicast
E	240 – 255	Reserved (formerly experimental)

* First Octet of 0 or 127: Reserved for Special Uses

Powers of 2

Power	Decimal	Power	Decimal	Power	Decimal
2^0	1	2^8	256	2^{16}	65,536
2^1	2	2^9	512	2^{17}	131,072
2^2	4	2^{10}	1024	2^{18}	262,144
2^3	8	2^{11}	2048	2^{19}	524,288
2^4	16	2^{12}	4096	2^{20}	1,048,576
2^5	32	2^{13}	8192	2^{21}	2,097,152
2^6	64	2^{14}	16,384	2^{22}	4,194,304
2^7	128	2^{15}	32,768	2^{23}	8,388,608

Private IPv4 Networks

Class of Networks	Private IP Networks	Number of Networks
A	10.0.0.0	1
B	172.16.0.0 through 171.31.0.0	16
C	192.168.0.0 through 192.168.255.0	256

The Nine DDN Octet Values

Decimal Value	Binary	Number of Binary 1's
0	00000000	0
128	10000000	1
192	11000000	2
224	11100000	3
240	11110000	4
248	11111000	5
252	11111100	6
254	11111110	7
255	11111111	8

Speed Goals and Learning Stages

Subnetting Processes	Book Speed Goals	Your Speed Goal	Your Current Speed	Your Current Stage
Find Classful Network Facts *	10			
Convert Mask Formats *	10			
Find Subnet Facts	30			
Interpret Design w/ Mask	15			
Choose One Mask	15			
Find All Subnet IDs *	45			

* Excludes the time required to write all the answers on paper.

Binary-to-Decimal Conversion Chart: Decimal 0 -127

Decimal	Binary	Decimal	Binary	Decimal	Binary	Decimal	Binary
0	00000000	32	00100000	64	01000000	96	01100000
1	00000001	33	00100001	65	01000001	97	01100001
2	00000010	34	00100010	66	01000010	98	01100010
3	00000011	35	00100011	67	01000011	99	01100011
4	00000100	36	00100100	68	01000100	100	01100100
5	00000101	37	00100101	69	01000101	101	01100101
6	00000110	38	00100110	70	01000110	102	01100110
7	00000111	39	00100111	71	01000111	103	01100111
8	00001000	40	00101000	72	01001000	104	01101000
9	00001001	41	00101001	73	01001001	105	01101001
10	00001010	42	00101010	74	01001010	106	01101010
11	00001011	43	00101011	75	01001011	107	01101011
12	00001100	44	00101100	76	01001100	108	01101100
13	00001101	45	00101101	77	01001101	109	01101101
14	00001110	46	00101110	78	01001110	110	01101110
15	00001111	47	00101111	79	01001111	111	01101111
16	00010000	48	00110000	80	01010000	112	01110000
17	00010001	49	00110001	81	01010001	113	01110001
18	00010010	50	00110010	82	01010010	114	01110010
19	00010011	51	00110011	83	01010011	115	01110011
20	00010100	52	00110100	84	01010100	116	01110100
21	00010101	53	00110101	85	01010101	117	01110101
22	00010110	54	00110110	86	01010110	118	01110110
23	00010111	55	00110111	87	01010111	119	01110111
24	00011000	56	00111000	88	01011000	120	01111000
25	00011001	57	00111001	89	01011001	121	01111001
26	00011010	58	00111010	90	01011010	122	01111010
27	00011011	59	00111011	91	01011011	123	01111011
28	00011100	60	00111100	92	01011100	124	01111100
29	00011101	61	00111101	93	01011101	125	01111101
30	00011110	62	00111110	94	01011110	126	01111110
31	00011111	63	00111111	95	01011111	127	01111111

Binary-to-Decimal Conversion Chart: Decimal 128 - 255

Decimal	Binary	Decimal	Binary	Decimal	Binary	Decimal	Binary
128	10000000	160	10100000	192	11000000	224	11100000
129	10000001	161	10100001	193	11000001	225	11100001
130	10000010	162	10100010	194	11000010	226	11100010
131	10000011	163	10100011	195	11000011	227	11100011
132	10000100	164	10100100	196	11000100	228	11100100
133	10000101	165	10100101	197	11000101	229	11100101
134	10000110	166	10100110	198	11000110	230	11100110
135	10000111	167	10100111	199	11000111	231	11100111
136	10001000	168	10101000	200	11001000	232	11101000
137	10001001	169	10101001	201	11001001	233	11101001
138	10001010	170	10101010	202	11001010	234	11101010
139	10001011	171	10101011	203	11001011	235	11101011
140	10001100	172	10101100	204	11001100	236	11101100
141	10001101	173	10101101	205	11001101	237	11101101
142	10001110	174	10101110	206	11001110	238	11101110
143	10001111	175	10101111	207	11001111	239	11101111
144	10010000	176	10110000	208	11010000	240	11110000
145	10010001	177	10110001	209	11010001	241	11110001
146	10010010	178	10110010	210	11010010	242	11110010
147	10010011	179	10110011	211	11010011	243	11110011
148	10010100	180	10110100	212	11010100	244	11110100
149	10010101	181	10110101	213	11010101	245	11110101
150	10010110	182	10110110	214	11010110	246	11110110
151	10010111	183	10110111	215	11010111	247	11110111
152	10011000	184	10111000	216	11011000	248	11111000
153	10011001	185	10111001	217	11011001	249	11111001
154	10011010	186	10111010	218	11011010	250	11111010
155	10011011	187	10111011	219	11011011	251	11111011
156	10011100	188	10111100	220	11011100	252	11111100
157	10011101	189	10111101	221	11011101	253	11111101
158	10011110	190	10111110	222	11011110	254	11111110
159	10011111	191	10111111	223	11011111	255	11111111

Links

Cisco's Certification Portal:
https://www.cisco.com/c/en/us/training-events/training-certifications/overview.html

Cisco CCNA Routing and Switching Page
https://www.cisco.com/c/en/us/training-events/training-certifications/certifications/associate/ccna-routing-switching.html

Cisco Learning Network (CLN)
https://learningnetwork.cisco.com

The Cisco Learning Network (CLN) is the best learning community to use when learning for CCNA.

Wendell's CCENT Skills Blog
https://blog.certskills.com/ccent

A Blog about the exam preparation and the technology in the ICND1 exam... which happens to be the same technology topics as half of the CCNA Routing and Switching exam.

Wendell's CCNA Skills Blog
https://blog.certskills.com/ccna

A Blog about the exam preparation and the technology in the ICND2 exam... which happens to be the same technology topics as half of the CCNA Routing and Switching exam.