**Classful IPv4 Addresses**

Class A

0.0.0.0 - 127.255.255.255

Class B

128.0.0.0 - 191.255.255.255

Class C

192.0.0.0 - 223.255.255.255

Class D

224.0.0.0 - 239.255.255.255

Class E

240.0.0.0 - 255.255.255.255

**Private IPv4 Addresses**

10.0.0.0 - 10.255.255.255

172.16.0.0 - 172.31.255.255

192.168.0.0 - 192.168.255.255

**Special IPv4 Addresses**

Local Host

127.0.0.0 - 127.255.255.255

APIPA

169.254.0.0 - 169.254.255.255

**Bogon IPv4 Addresses**

0.0.0.0/8

This network

10.0.0.0/8

Private IPv4 Address Block

100.64.0.0/10

Carrier-grade NAT

127.0.0.0/8

Loopback

127.0.53.53

Name collision occurrence

169.254.0.0/16

Link local

172.16.0.0/12

Private IPv4 Address Block

192.0.0.0/24

IETF protocol assignments

192.0.2.0/24

TEST-NET-1

192.168.0.0/16

Private IPv4 Address Block

198.18.0.0/15

Network benchmark testing

198.51.100.0/24

TEST-NET-2

203.0.113.0/24

TEST-NET-3

224.0.0.0/4

Multicast

240.0.0.0/4

Reserved

255.255.255.255/32

Limited broadcast

**CIDR**

**SUBNET MASK**

**ADDRESSES**

**WILDCARD MASK**

/32

255.255.255. 255

1

0.0.0.0

/31

255.255.255. 254

2

0.0.0.1

/30

255.255.255. 252

4

0.0.0.3

/29

255.255.255. 248

8

0.0.0.7

/28

255.255.255. 240

16

0.0.0.15

/27

255.255.255. 224

32

0.0.0.31

/26

255.255.255. 192

64

0.0.0.63

/25

255.255.255. 128

128

0.0.0.127

/24

255.255.255.0

256

0.0.0.255

/23

255.255.254.0

512

0.0.1.255

/22

255.255.252.0

1024

0.0.3.255

/21

255.255.248.0

2048

0.0.7.255

/20

255.255.240.0

4096

0.0.15.255

/19

255.255.224.0

8192

0.0.31.255

/18

255.255.192.0

16384

0.0.63.255

/17

255.255.128.0

32768

0.0.127.255

/16

255.255.0.0

65536

0.0.255.255

/15

255.254.0.0

131072

0.1.255.255

/14

255.252.0.0

262144

0.3.255.255

/13

255.248.0.0

524288

0.7.255.255

/12

255.240.0.0

1048576

0.15.255.255

/11

255.224.0.0

2097152

0.31.255.255

/10

255.192.0.0

4194304

0.63.255.255

/9

255.128.0.0

8388608

0.127.255.255

/8

255.0.0.0

16777216

0.255.255.255

/7

254.0.0.0

33554432

1 .255.255.255

/6

252.0.0.0

67108864

3 .255.255.255

/5

248.0.0.0

134217728

7 .255.255.255

/4

240.0.0.0

268435456

15. 255.255.255

/3

224.0.0.0

536870912

31. 255.255.255

/2

192.0.0.0

1073741824

63. 255.255.255

/1

128.0.0.0

2147483648

127. 255.255.255

/0

0.0.0.0

4294967296

255. 255.255.255

**IPv4 Addresses and IPv4 Subnetting**

**To determine the 8 bits Octet value, add 0s in front of the binary value.**

**For example: For Decimal 5, the Binary value is 101. 8 bits value is 00000101.**

**DEC**

**BİN**

**DEC**

**BİN**

**DEC**

**BİN**

**DEC**

**BİN**

**DEC**

**BİN**

**DEC**

**BİN**

**DEC**

**BİN**

**DEC**

**BİN**

1

1

33

100001

65

1000001

97

1100001

129

10000001

161

10100001

193

11000001

225

11100001

2

10

34

100010

66

1000010

98

1100010

130

10000010

162

10100010

194

11000010

226

11100010

3

11

35

100011

67

1000011

99

1100011

131

10000011

163

10100011

195

11000011

227

11100011

4

100

36

100100

68

1000100

100

1100100

132

10000100

164

10100100

196

11000100

228

11100100

5

101

37

100101

69

1000101

101

1100101

133

10000101

165

10100101

197

11000101

229

11100101

6

110

38

100110

70

1000110

102

1100110

134

10000110

166

10100110

198

11000110

230

11100110

7

111

39

100111

71

1000111

103

1100111

135

10000111

167

10100111

199

11000111

231

11100111

8

1000

40

101000

72

1001000

104

1101000

136

10001000

168

10101000

200

11001000

232

11101000

9

1001

41

101001

73

1001001

105

1101001

137

10001001

169

10101001

201

11001001

233

11101001

10

1010

42

101010

74

1001010

106

1101010

138

10001010

170

10101010

202

11001010

234

11101010

11

1011

43

101011

75

1001011

107

1101011

139

10001011

171

10101011

203

11001011

235

11101011

12

1100

44

101100

76

1001100

108

1101100

140

10001100

172

10101100

204

11001100

236

11101100

13

1101

45

101101

77

1001101

109

1101101

141

10001101

173

10101101

205

11001101

237

11101101

14

1110

46

101110

78

1001110

110

1101110

142

10001110

174

10101110

206

11001110

238

11101110

15

1111

47

101111

79

1001111

111

1101111

143

10001111

175

10101111

207

11001111

239

11101111

16

10000

48

110000

80

1010000

112

1110000

144

10010000

176

10110000

208

11010000

240

11110000

17

10001

49

110001

81

1010001

113

1110001

145

10010001

177

10110001

209

11010001

241

11110001

18

10010

50

110010

82

1010010

114

1110010

146

10010010

178

10110010

210

11010010

242

11110010

19

10011

51

110011

83

1010011

115

1110011

147

10010011

179

10110011

211

11010011

243

11110011

20

10100

52

110100

84

1010100

116

1110100

148

10010100

180

10110100

212

11010100

244

11110100

21

10101

53

110101

85

1010101

117

1110101

149

10010101

181

10110101

213

11010101

245

11110101

22

10110

54

110110

86

1010110

118

1110110

150

10010110

182

10110110

214

11010110

246

11110110

23

10111

55

110111

87

1010111

119

1110111

151

10010111

183

10110111

215

11010111

247

11110111

24

11000

56

111000

88

1011000

120

1111000

152

10011000

184

10111000

216

11011000

248

11111000

25

11001

57

111001

89

1011001

121

1111001

153

10011001

185

10111001

217

11011001

249

11111001

26

11010

58

111010

90

1011010

122

1111010

154

10011010

186

10111010

218

11011010

250

11111010

27

11011

59

111011

91

1011011

123

1111011

155

10011011

187

10111011

219

11011011

251

11111011

28

11100

60

111100

92

1011100

124

1111100

156

10011100

188

10111100

220

11011100

252

11111100

29

11101

61

111101

93

1011101

125

1111101

157

10011101

189

10111101

221

11011101

253

11111101

30

11110

62

111110

94

1011110

126

1111110

158

10011110

190

10111110

222

11011110

254

11111110

31

11111

63

111111

95

1011111

127

1111111

159

10011111

191

10111111

223

11011111

255

11111111

32

100000

64

1000000

96

1100000

128

10000000

160

10100000

192

11000000

224

11100000

256

**Decimal to Binary Table**