
CHAPTER 4

IP Addresses: Classful Addressing

4.1 MULTIPLE-CHOICE QUESTIONS

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|-------|-------|-------|-------|-------|
| 1. a | 3. b | 5. a | 7. b | 9. c |
| 11. a | 13. a | 15. c | 17. d | 19. c |

4.2 EXERCISES

- 21.
- a. 256
 - b. 65536
 - c. 1.845×10^{19}
23. $3^{10} = 59,049$
- 25.
- a. 0x72220208
 - b. 0x810E0608
 - c. 0xD022360C
 - d. 0xEE220201
 - e. 0xF1220208
- 27.
- a. 2
 - b. 4
 - c. 6
- 29.
- a. Class C
 - b. Class D
 - c. Class A

- d. Class B
 - e. Class E
- 31.
- a. netid: 114 hostid: 34.2.8
 - b. netid: 19 hostid: 34.21.5
 - c. netid: 23 hostid: 67.12.1
 - d. This is actually a loopback address; we cannot separate netid and hostid.
- 33.
- a. netid: 192.8.56 hostid: 2
 - b. netid: 220.34.8 hostid: 9
 - c. netid: 208.34.54 hostid: 12
 - d. netid: 205.23.67 hostid: 8
35. 130.5.34.12 does not belong because it has a network address of 130.5.0.0. The other 3 have a network address of 130.4.0.0
37. This message must travel through a router because it is moving from network 128.23.0.0 to network 14.0.0.0.
39. This message does not travel through a router because it is staying within network 128.23.0.0.
41. This message does not travel through a router because it is staying within network 195.23.67.0.
43. This message does not travel through a router because it is staying within network 9.0.0.0.
45. Class E
47. Class A
49. Class A
51. Source address: 140.15.8.20
Destination address: 140.15.255.255
53. Source address: 108.67.18.70
Destination address: 255.255.255.255
55. Source address: 202.7.8.27
Destination address: 255.255.255.255
57. Source address: 185.42.56.88
Destination address: 127.X.Y.Z (where X, Y, and Z can be anything)
59. Source address: 123.27.19.24
Destination address: 0.67.89.56
61. Source address: 215.14.14.9
Destination address: 0.0.0.22
63. Source address: 0.0.0.0
Destination address: 255.255.255.255