Chapter 31

Next Generation: IPv6 and ICMPv6

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31.1

IPv6

31.2

IPv6 ADDRESSES

Figure 31-1

IPv6 address

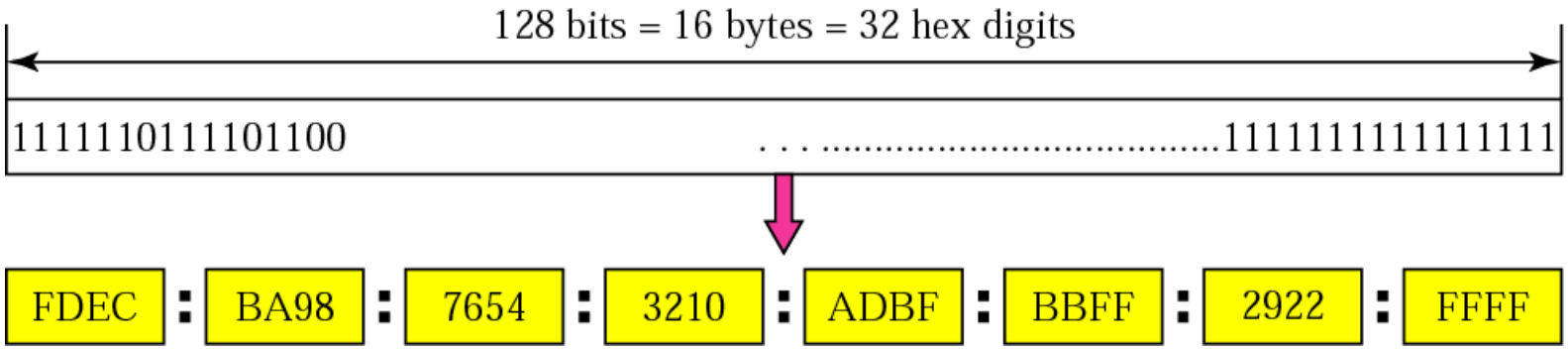


Figure 31-2

Abbreviated address

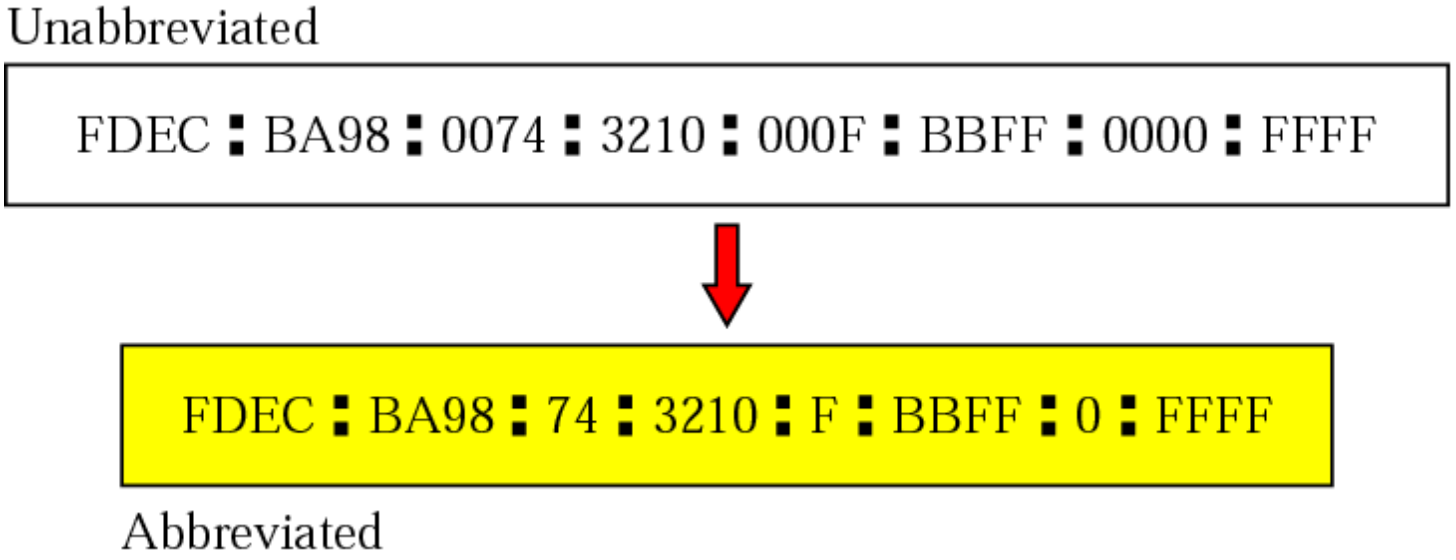


Figure 31-3

Abbreviated address with consecutive zeros

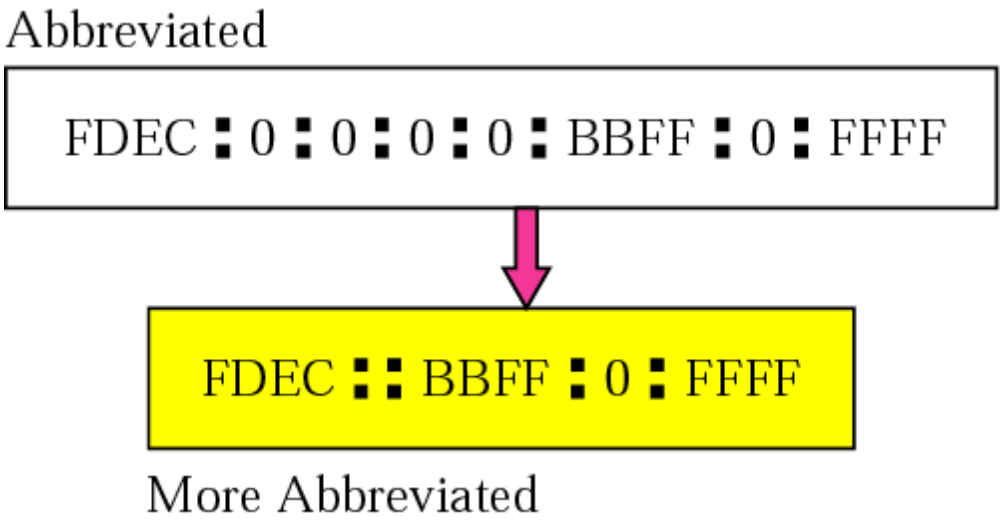


Figure 31-4

CIDR address

Figure 31-5

Address structure

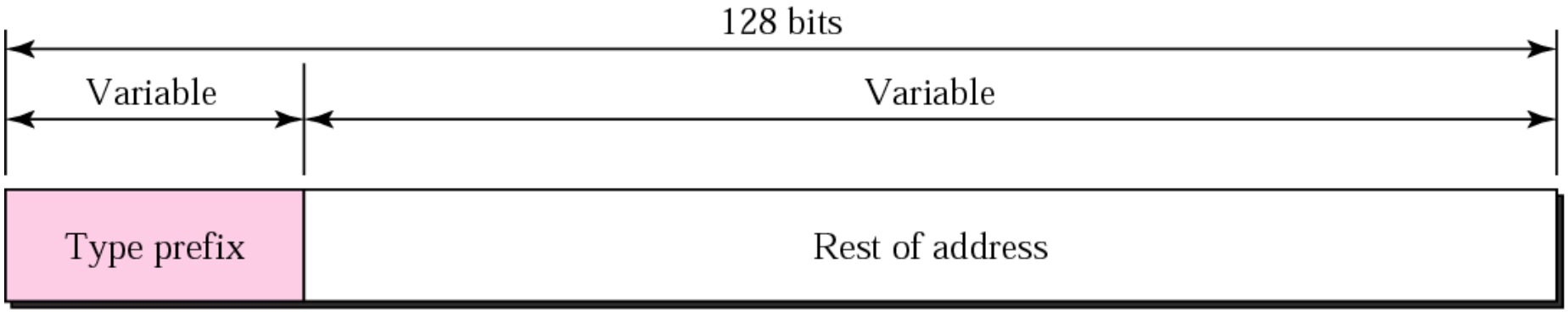


Figure 31-6

Provider-based address

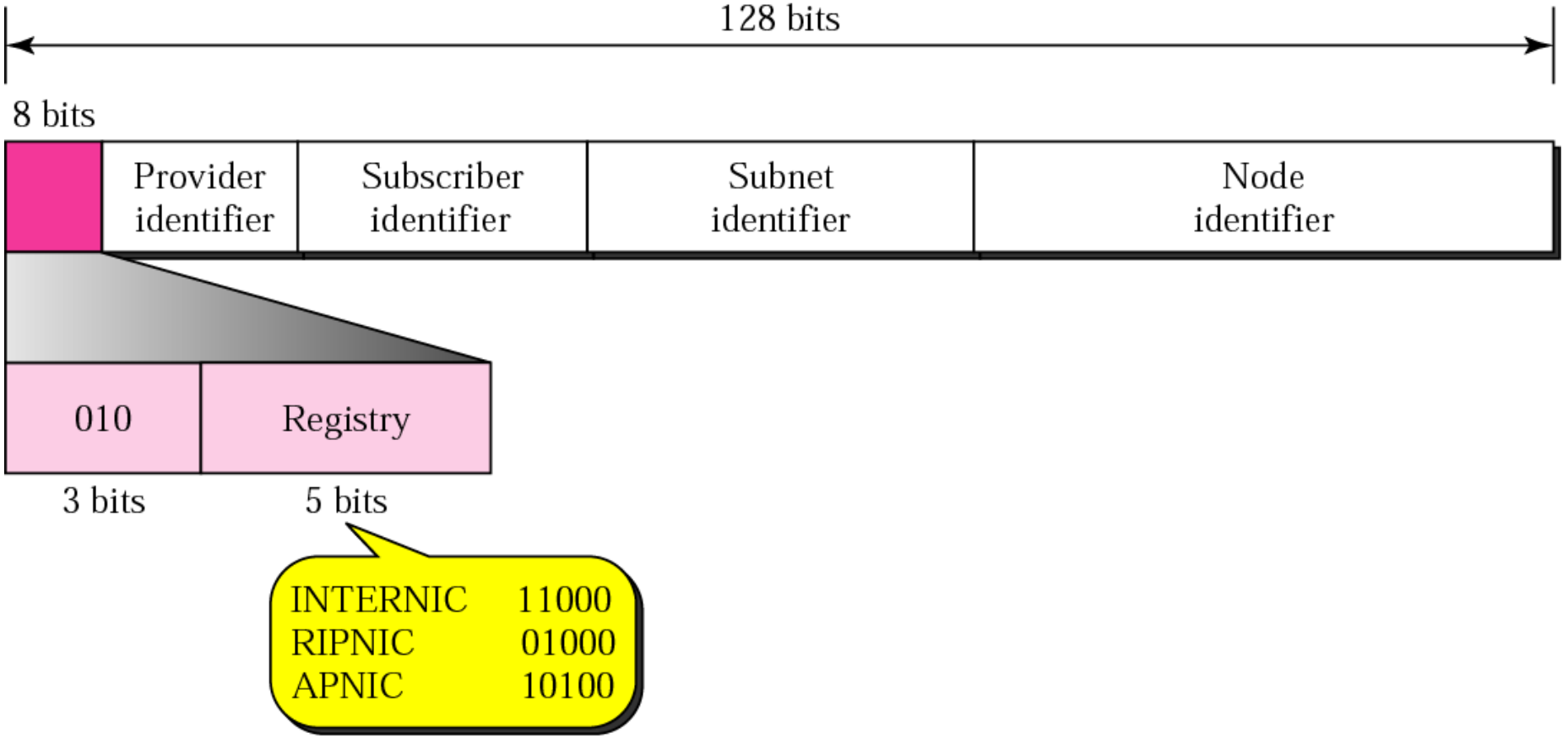


Figure 31-7

Address hierarchy

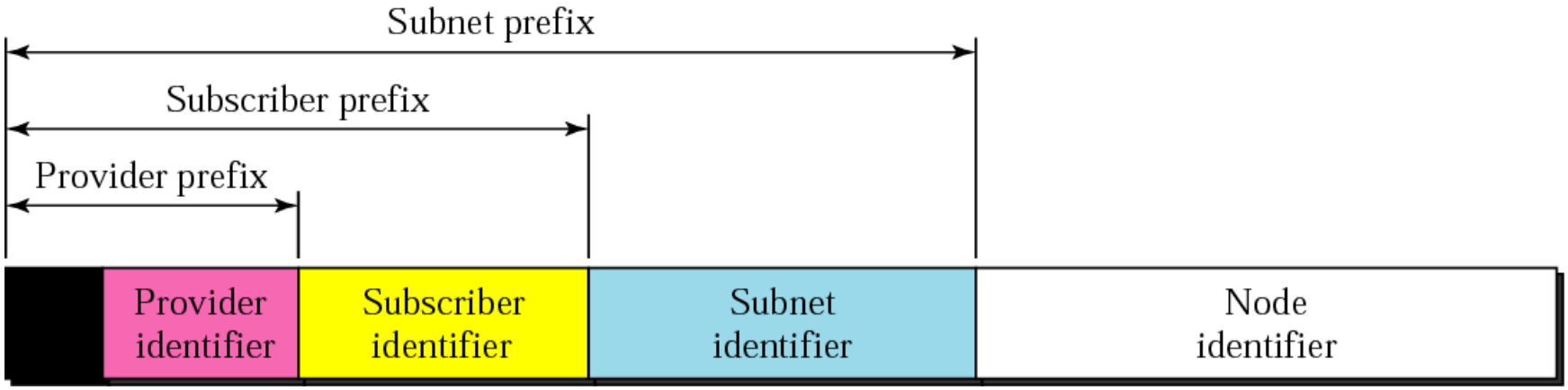


Figure 31-8

Unspecified address

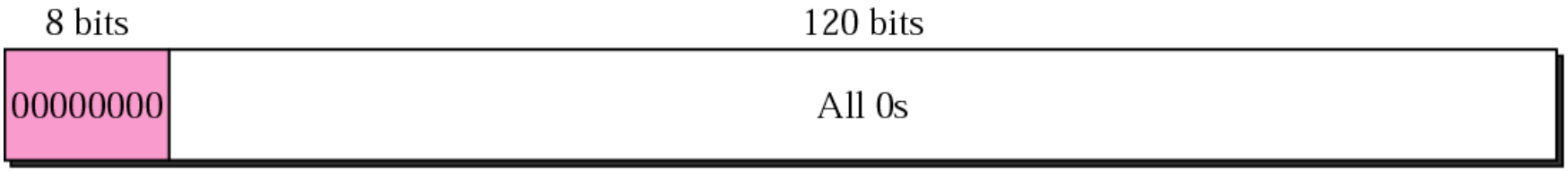


Figure 31-9

Loopback address

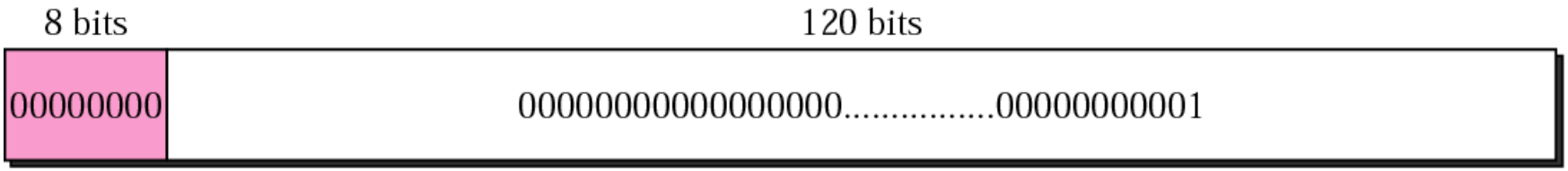


Figure 31-10

Compatible address

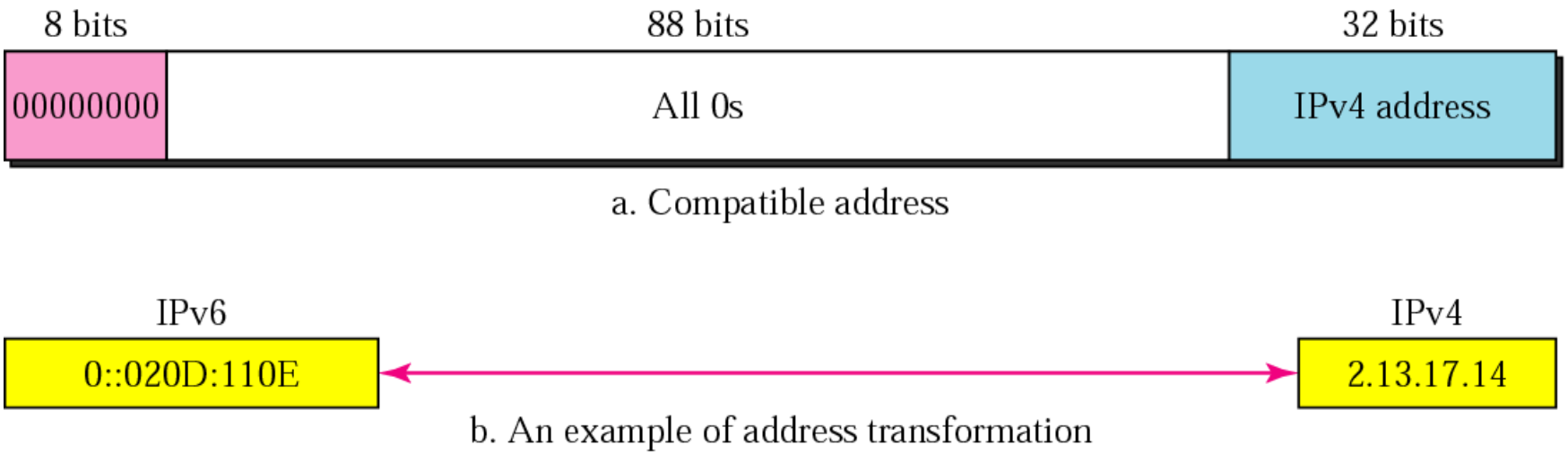


Figure 31-11

Mapped address

a. Mapped address

b. An example of address transformation

Figure 31-12

Link local address

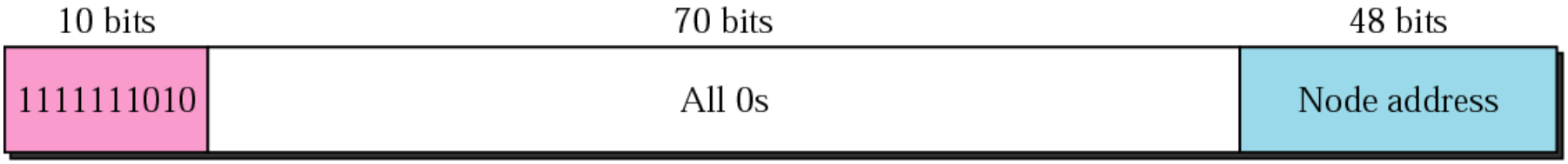


Figure 31-13

Site local address

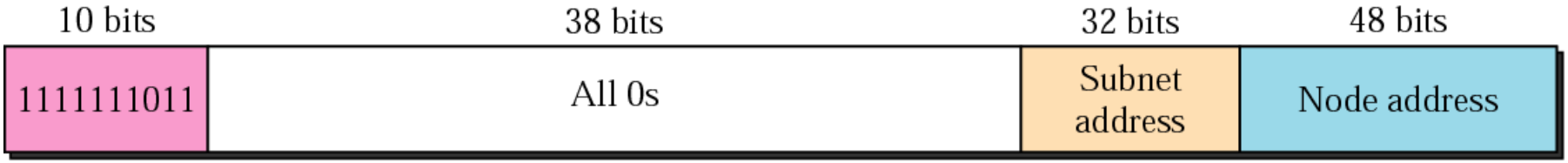
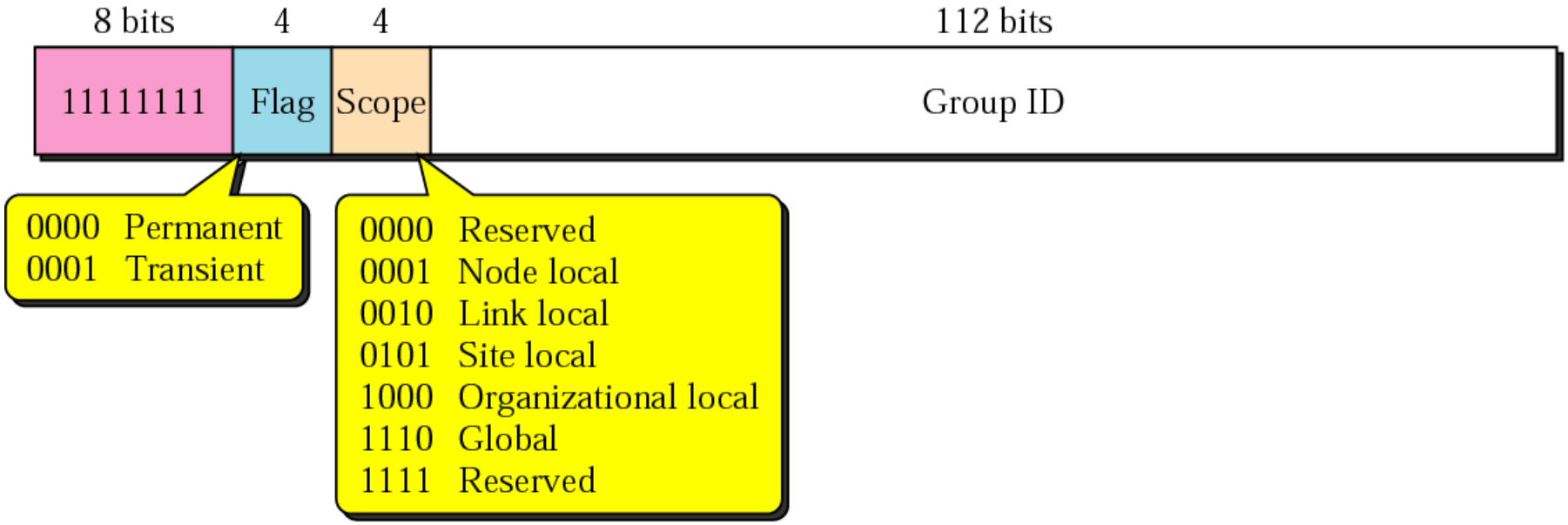


Figure 31-14

Multicast address



31.3

IPv6 PACKET FORMAT

Figure 31-15

IPv6 datagram

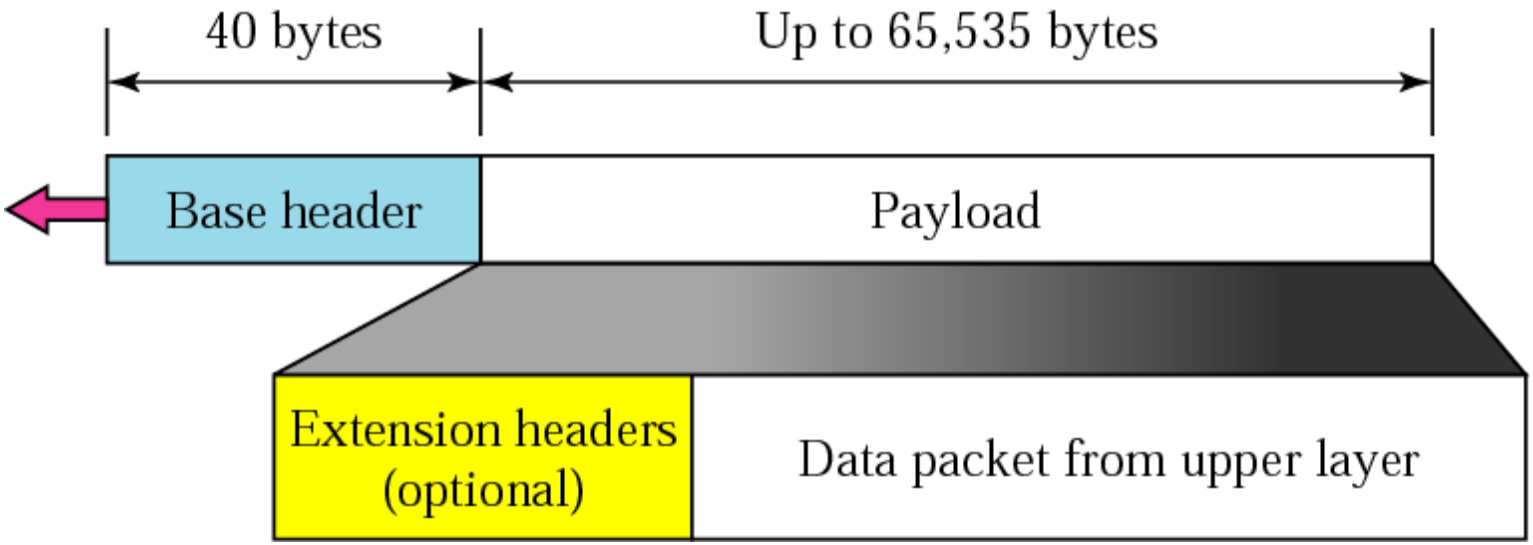


Figure 31-16

Format of an IPv6 datagram

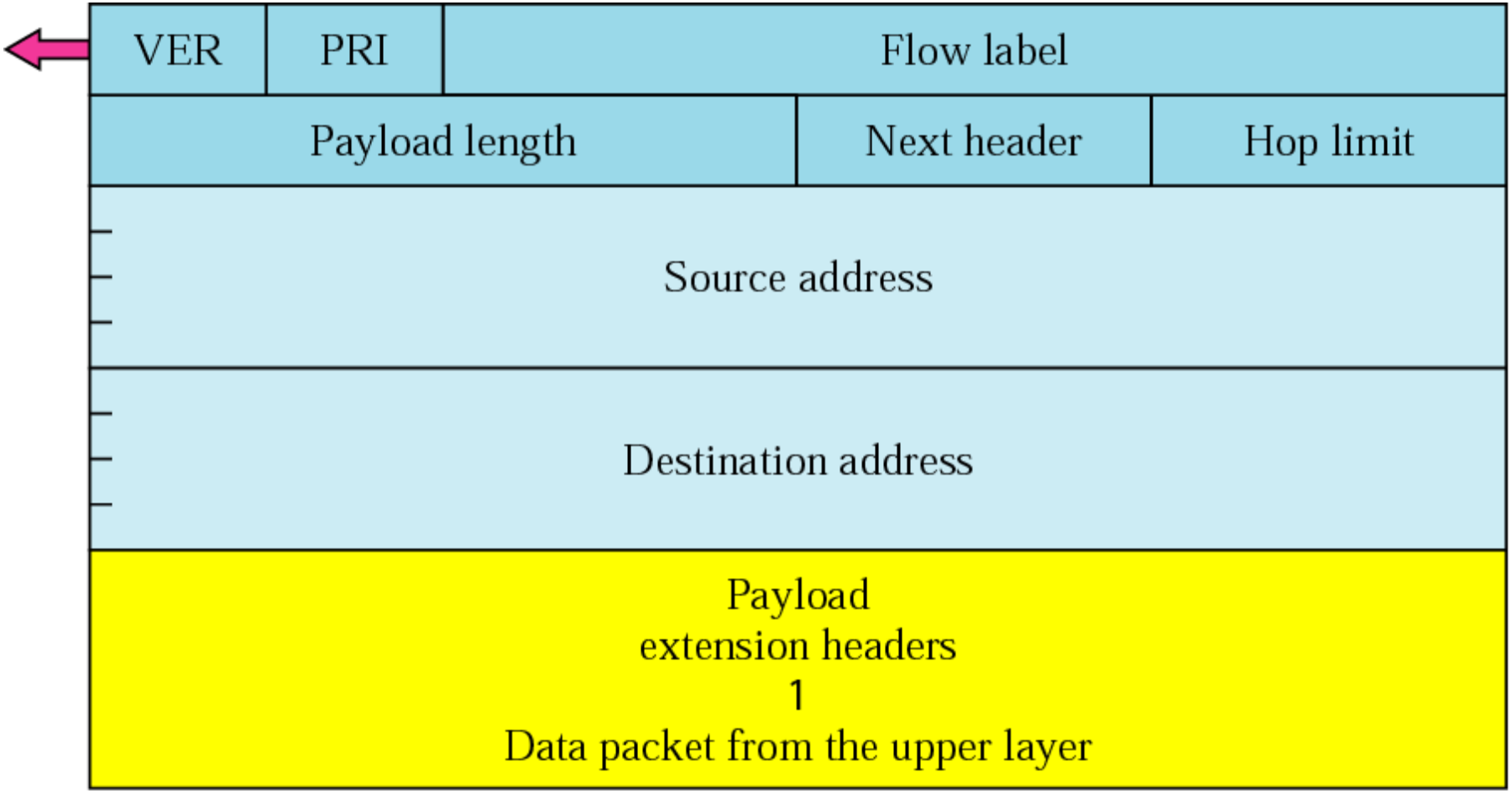


Figure 31-17

Extension header format

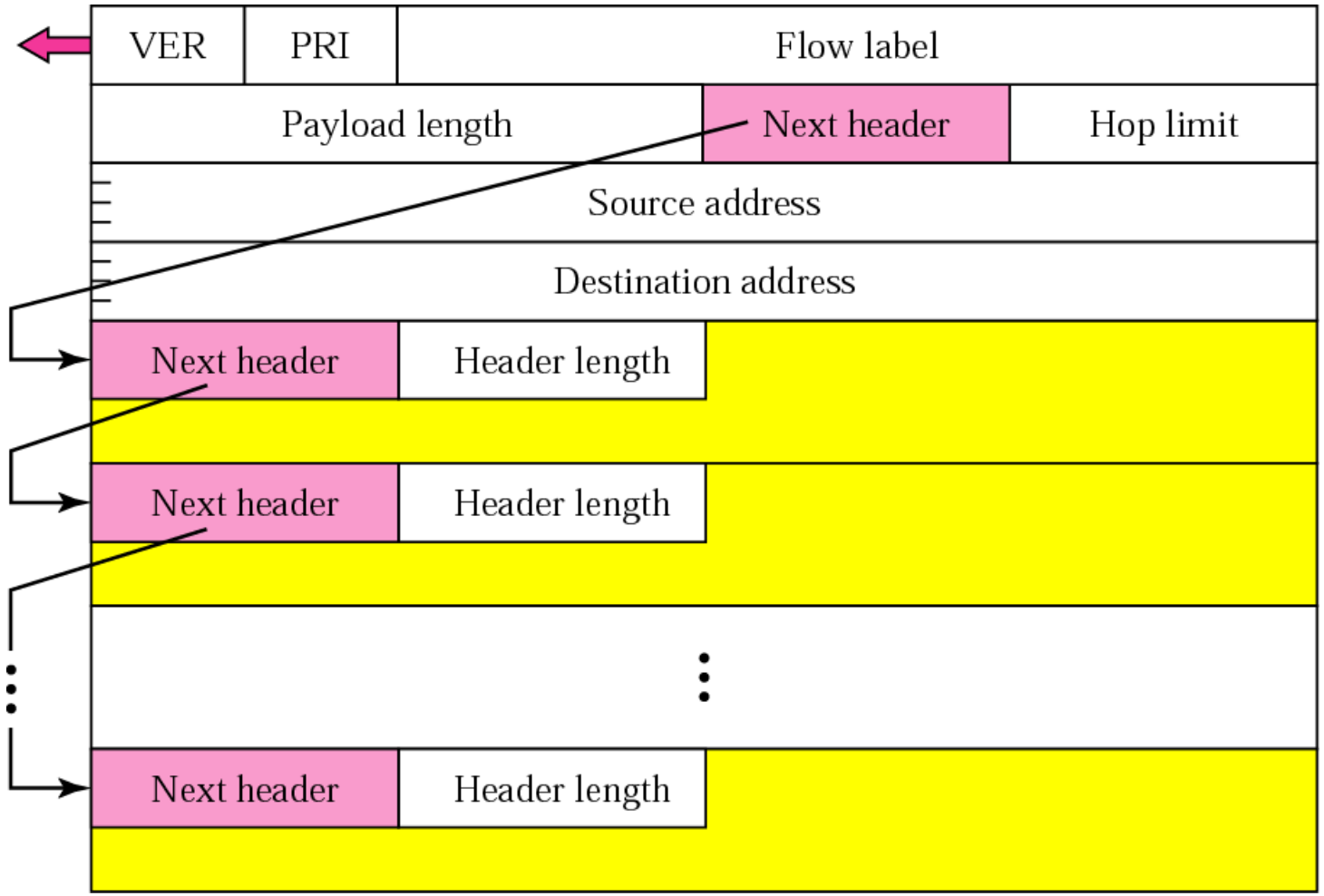


Figure 31-18

Extension header types

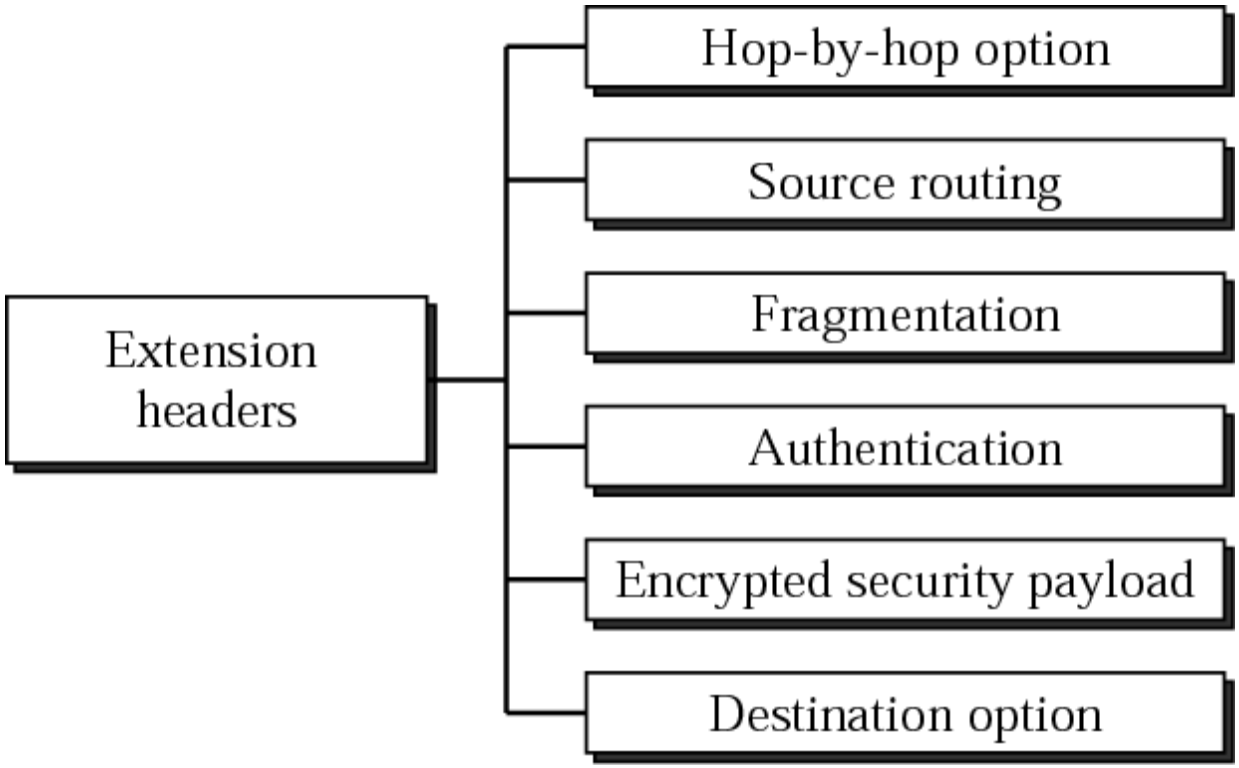


Figure 31-29

Encrypted security payload

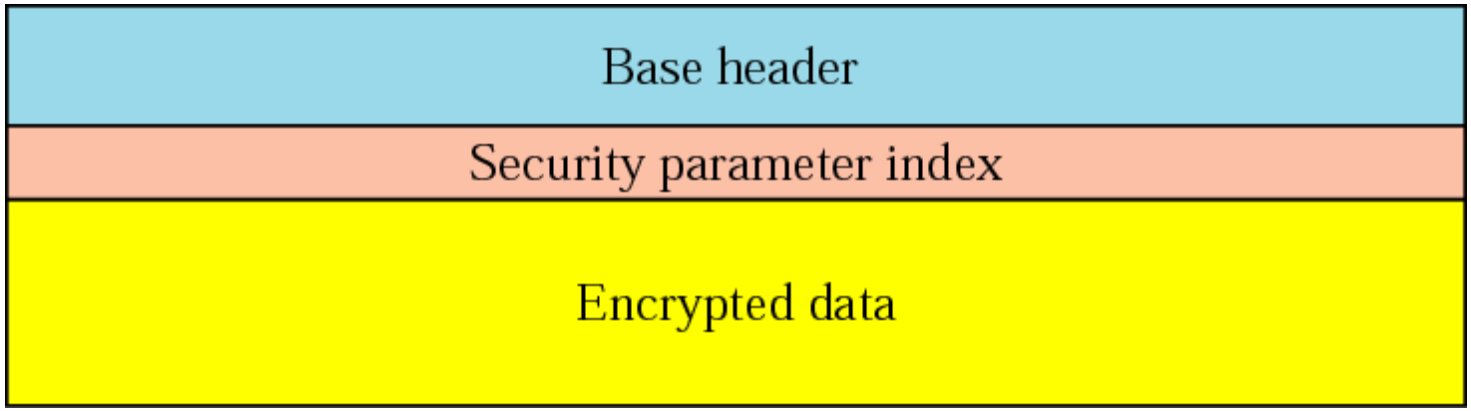


Figure 31-30

Transport mode encryption

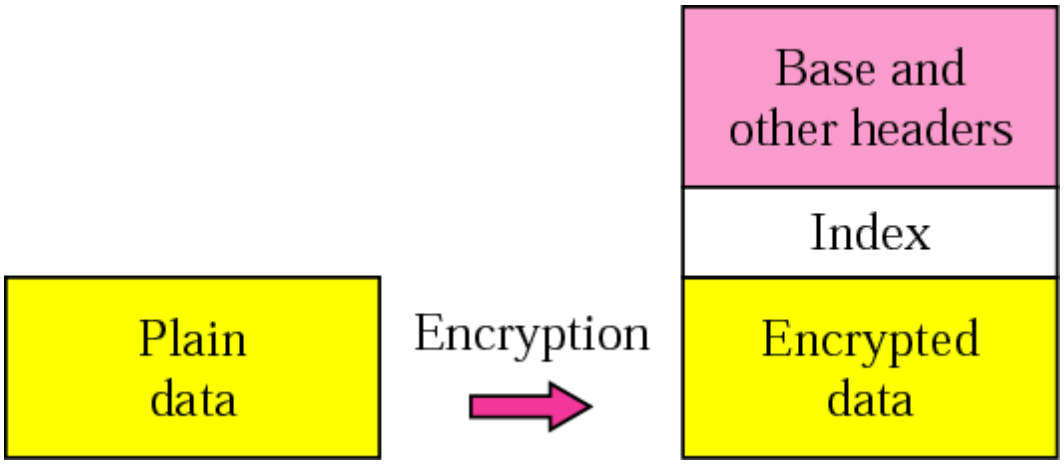
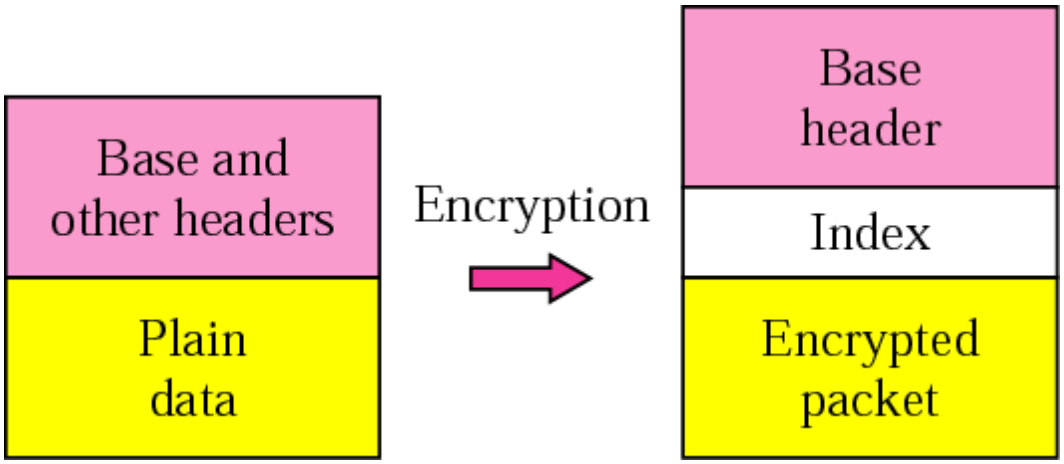


Figure 31-31

Tunnel-mode encryption



31.5

TRANSITION FROM IPv4 TO IPv6

Figure 31-48

Three transition strategies

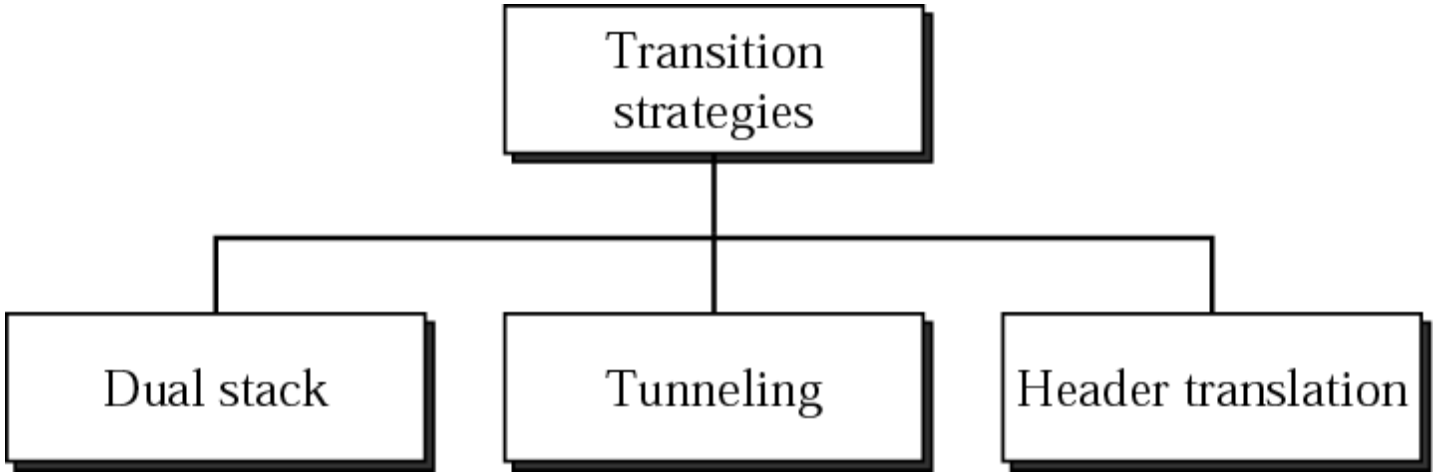


Figure 31-49

Dual stack

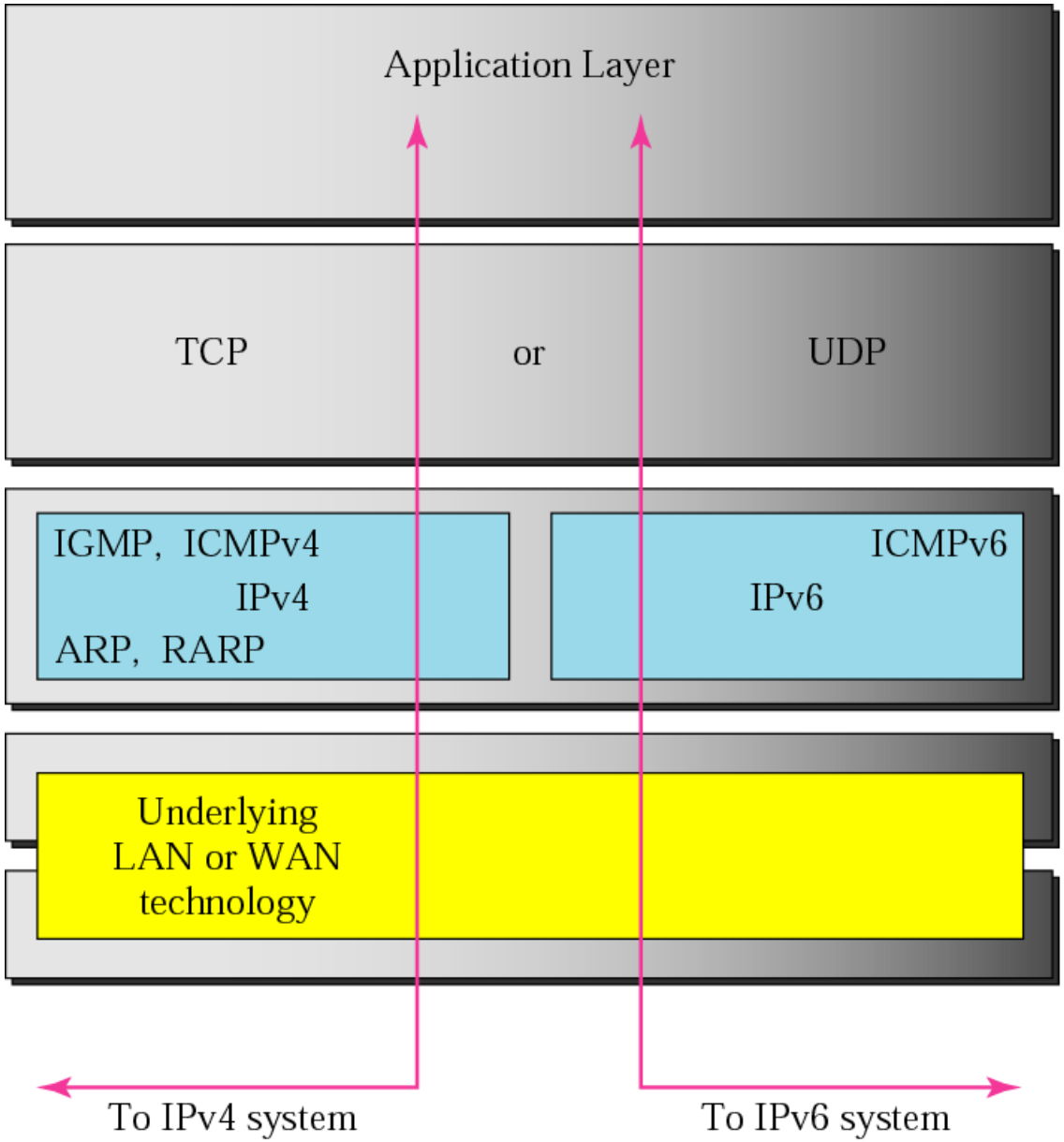


Figure 31-50

Automatic tunneling

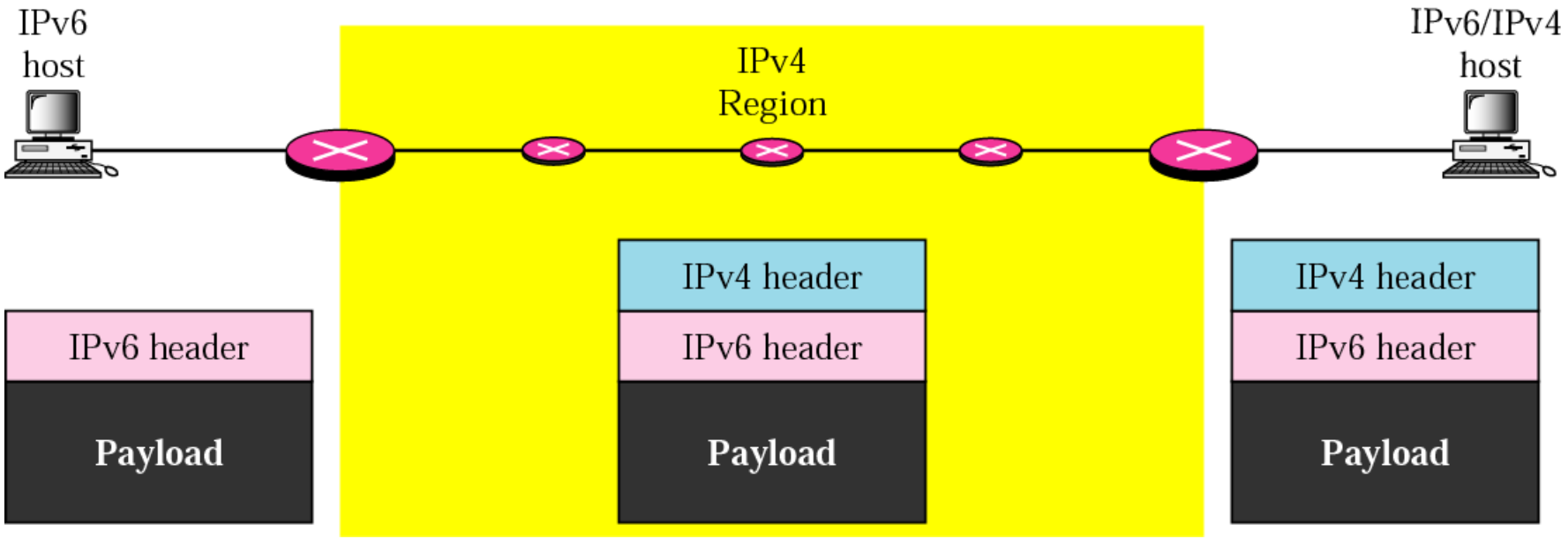


Figure 31-51

Configured tunneling

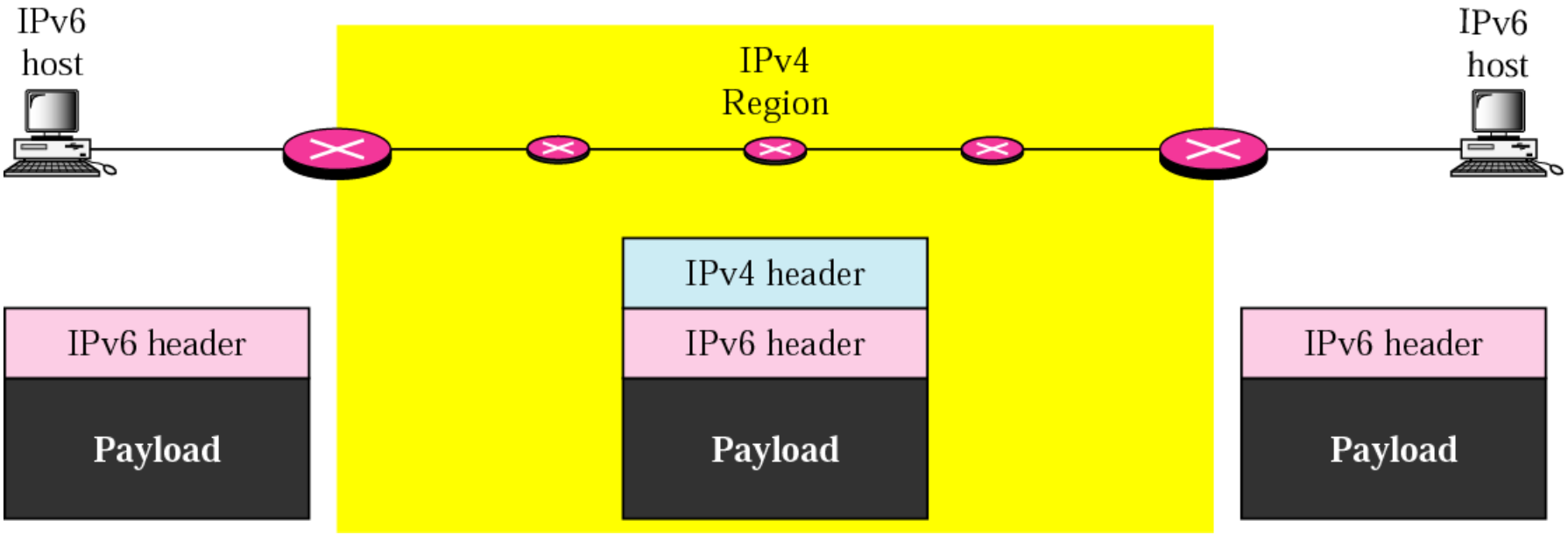


Figure 31-52

Header translation