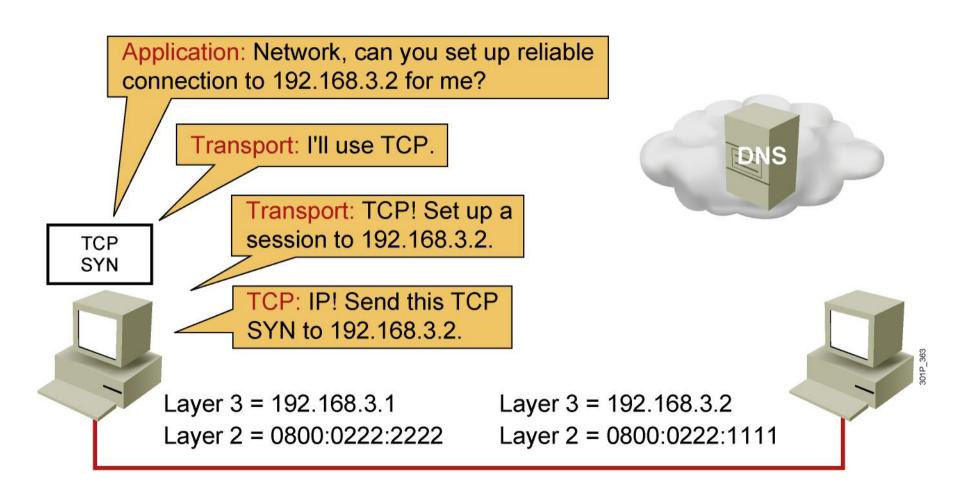
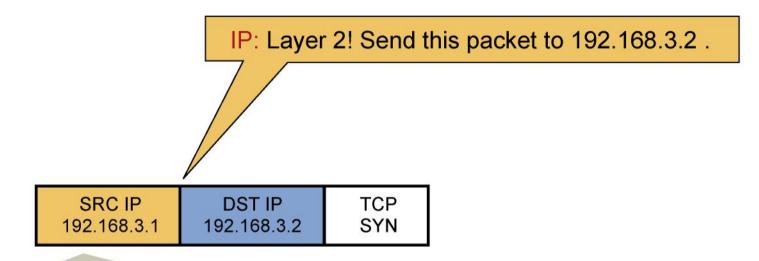
Host-to-Host Packet Delivery (1 of 22)



Host-to-Host Packet Delivery (2 of 22)



Layer 3 = 192.168.3.1

Layer 2 = 0800:0222:2222

Layer 3 = 192.168.3.2



Host-to-Host Packet Delivery (3 of 22)

Layer 2: ARP, do you have a mapping for 192.168.3.2?

ARP: Is 192.168.3.2 in my ARP table? No, I guess Layer 2 will have to put the packet in the parking lot until I do an ARP.

SRC IP 192.168.3.1

DST IP 192.168.3.2 TCP SYN



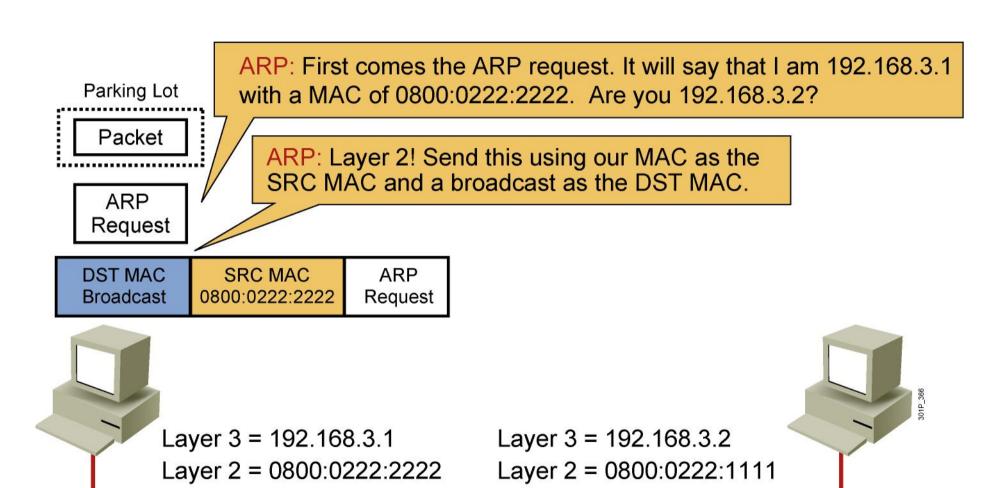
Layer 3 = 192.168.3.1

Layer 2 = 0800:0222:2222

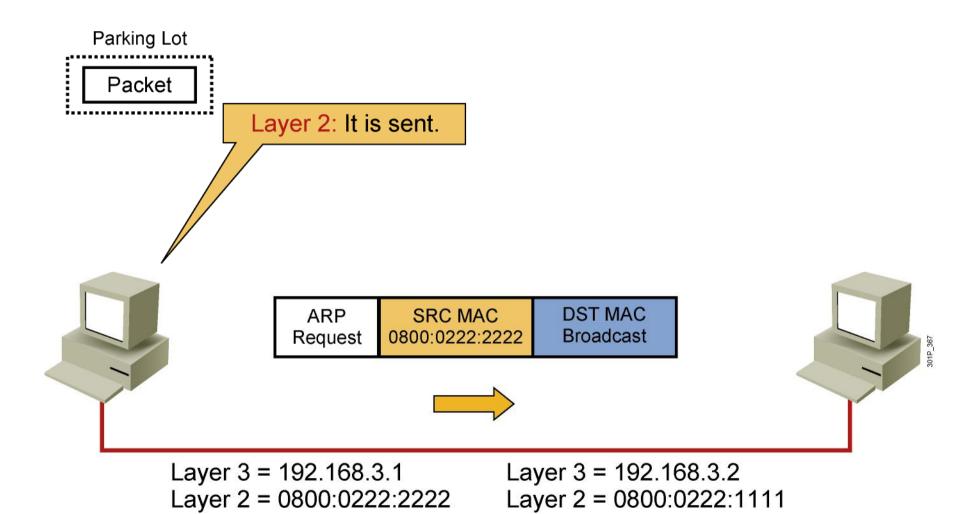
Layer 3 = 192.168.3.2



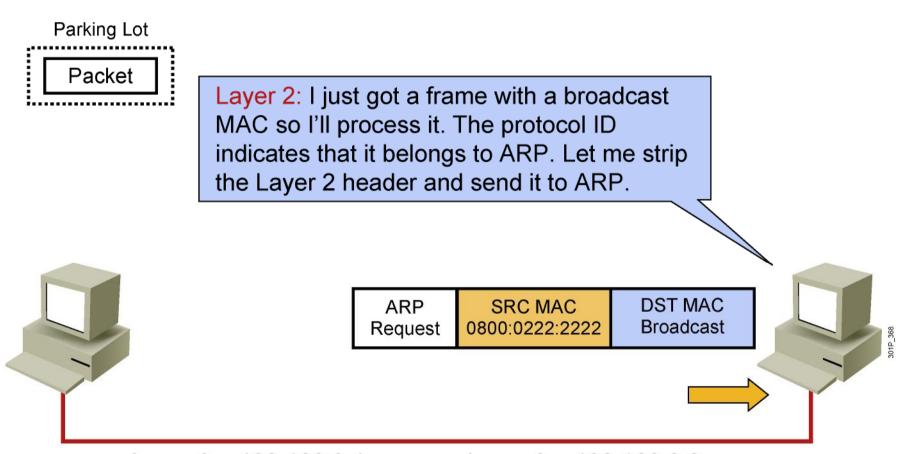
Host-to-Host Packet Delivery (4 of 22)



Host-to-Host Packet Delivery (5 of 22)



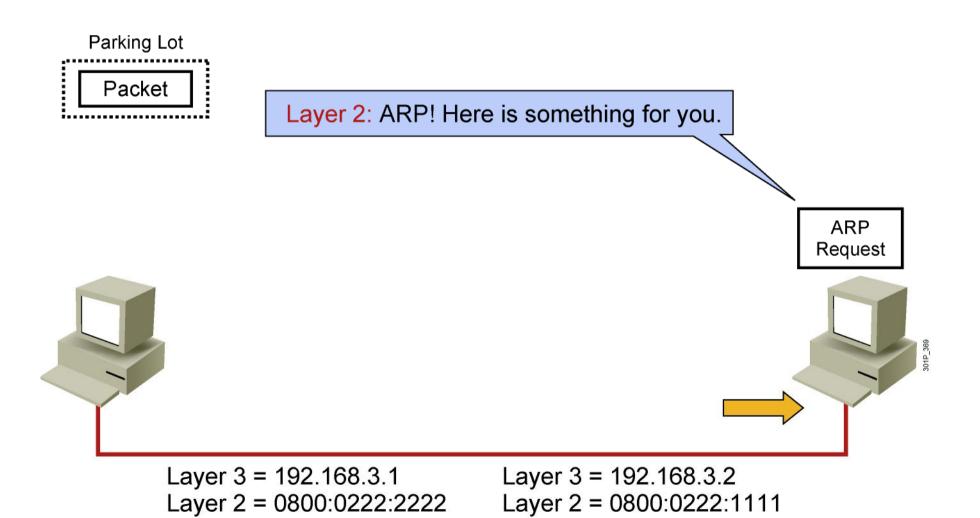
Host-to-Host Packet Delivery (6 of 22)



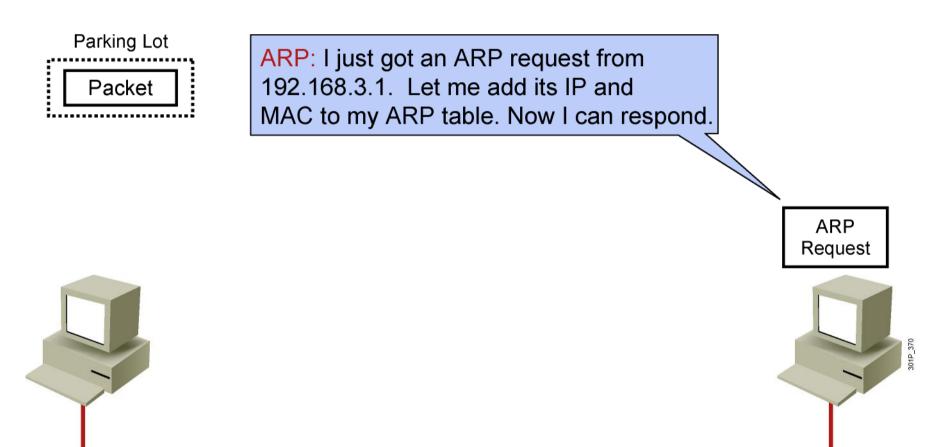
Layer 3 = 192.168.3.1 Layer 2 = 0800:0222:2222

Layer 3 = 192.168.3.2

Host-to-Host Packet Delivery (7 of 22)



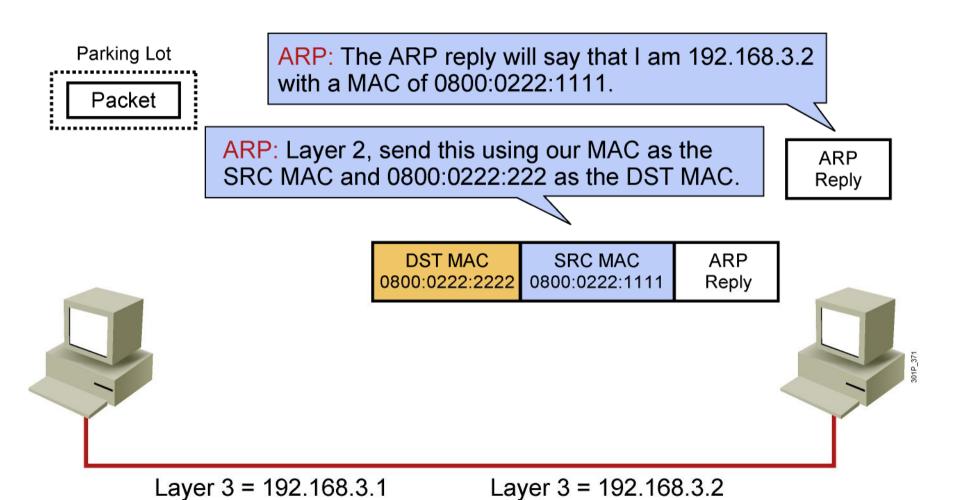
Host-to-Host Packet Delivery (8 of 22)



Layer 3 = 192.168.3.1 Layer 2 = 0800:0222:2222 Layer 3 = 192.168.3.2

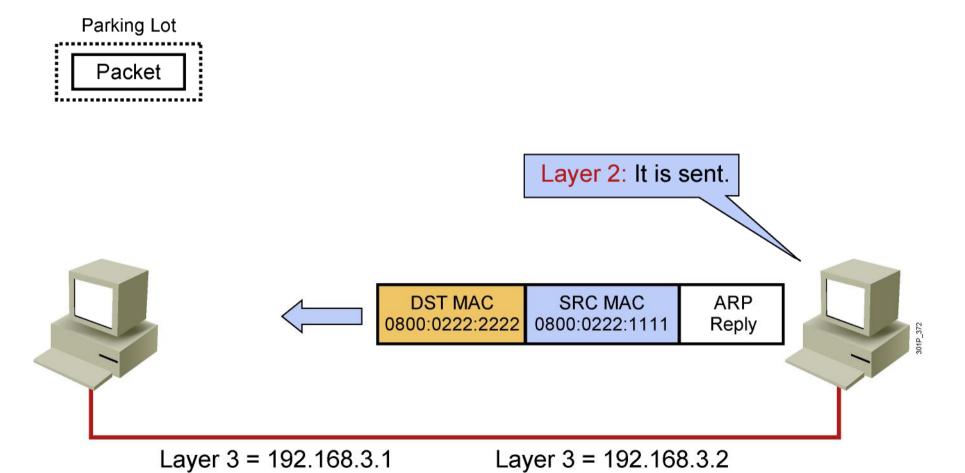
Host-to-Host Packet Delivery (9 of 22)

Layer 2 = 0800:0222:2222



Host-to-Host Packet Delivery (10 of 22)

Layer 2 = 0800:0222:2222



Host-to-Host Packet Delivery (11 of 22)



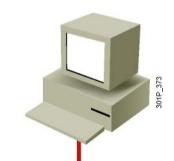
Packet

Layer 2: I just got a frame with my MAC so I'll process it. The protocol ID indicates that it belongs to ARP. Let me strip the Layer 2 header and send it to ARP.



DST MAC 0800:0222:2222 0

SRC MAC 0800:0222:1111 ARP Reply

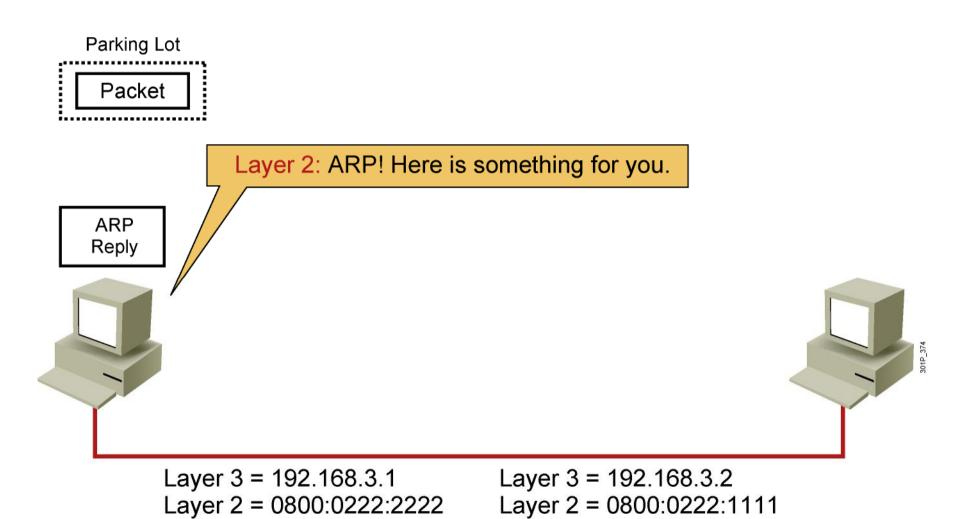


Layer 3 = 192.168.3.1

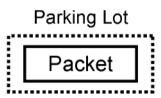
Layer 2 = 0800:0222:2222

Layer 3 = 192.168.3.2

Host-to-Host Packet Delivery (12 of 22)



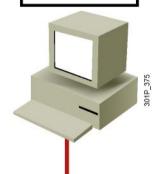
Host-to-Host Packet Delivery (13 of 22)



ARP: I just got an ARP reply from 192.168.3.2. Let me add its IP and MAC to my ARP table.

ARP: Layer 2! I have 192.168.3.2 mapped to 0800:0222:1111.





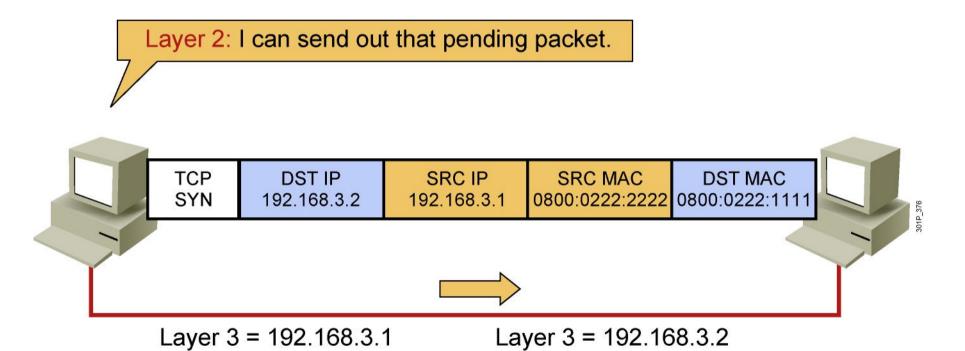
Layer 3 = 192.168.3.1

Layer 2 = 0800:0222:2222

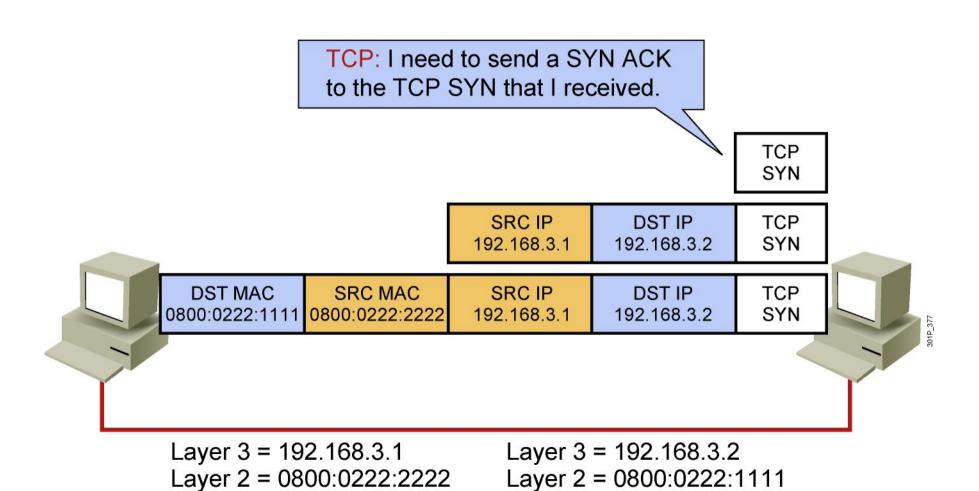
Layer 3 = 192.168.3.2

Host-to-Host Packet Delivery (14 of 22)

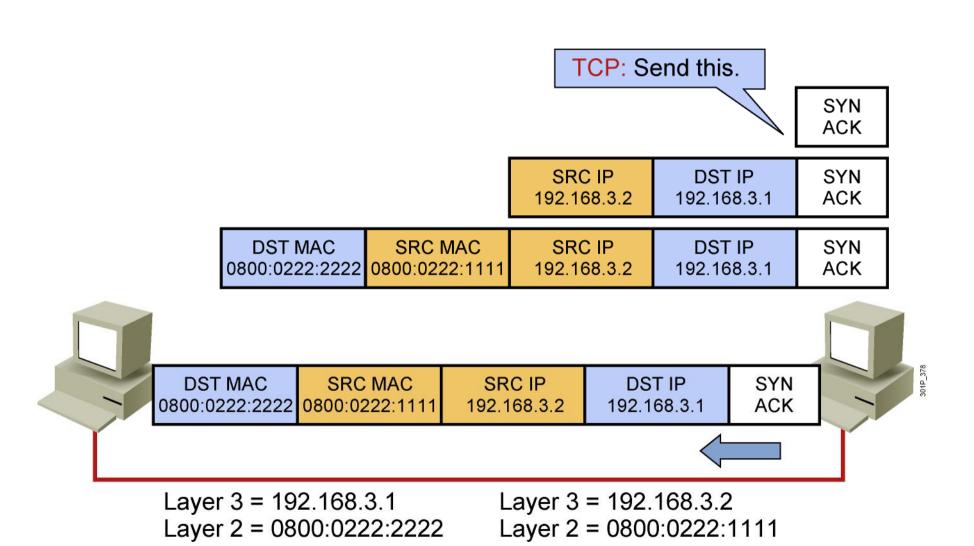
Layer 2 = 0800:0222:2222



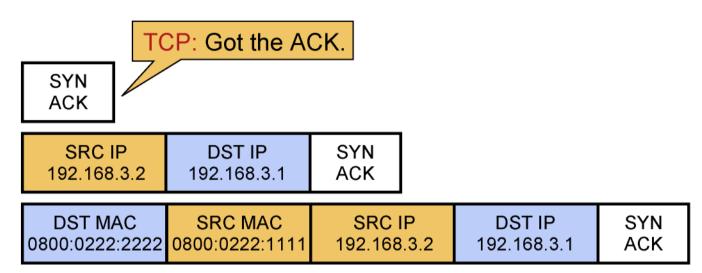
Host-to-Host Packet Delivery (15 of 22)

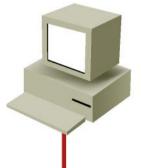


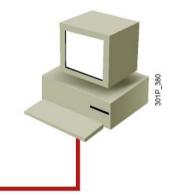
Host-to-Host Packet Delivery (16 of 22)



Host-to-Host Packet Delivery (17 of 22)







Layer 3 = 192.168.3.1

Layer 2 = 0800:0222:2222

Layer 3 = 192.168.3.2

Host-to-Host Packet Delivery (18 of 22)

TCP: I need to let the other end know I got the SYN ACK to complete the session establishment.

TCP ACK

 SRC IP
 DST IP
 TCP

 192.168.3.1
 192.168.3.2
 ACK

DST MAC	SRC MAC	SRC IP	DST IP	TCP
0800:0222:1111	0800:0222:2222	192.168.3.1	192.168.3.2	ACK

TCP DST IP SRC IP SRC MAC 0800:0222:2222 0800:0222:1111

Layer 3 = 192.168.3.1

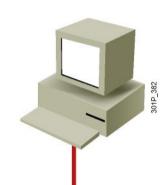
Layer 2 = 0800:0222:2222

Layer 3 = 192.168.3.2

Host-to-Host Packet Delivery (19 of 22)

Layer 4: OK, Application, I have your session set up.

Application: OK, I'll send you some data.

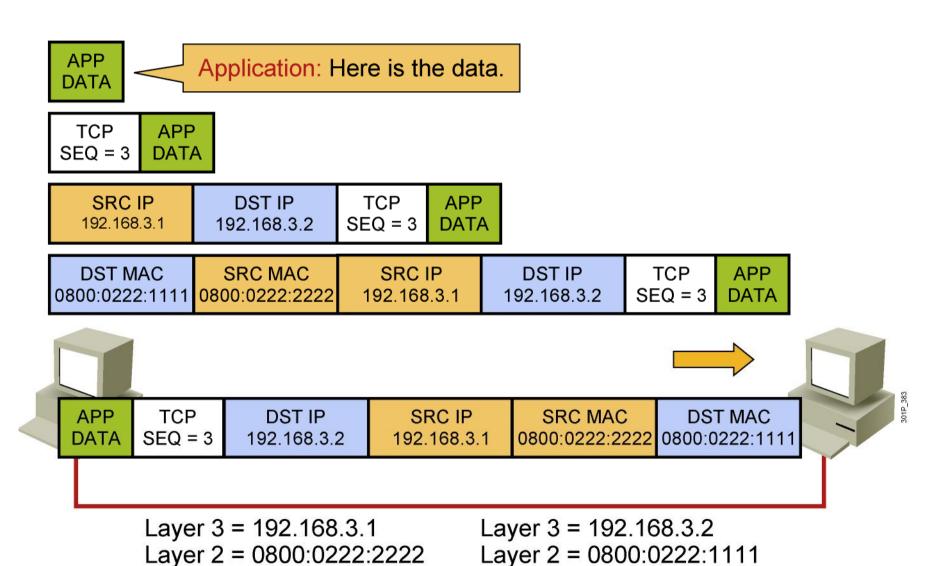


Layer 3 = 192.168.3.1

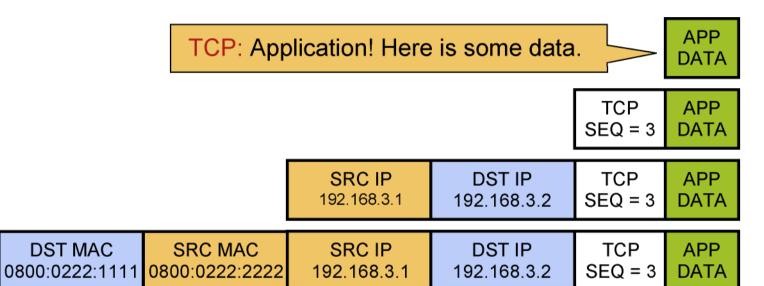
Layer 2 = 0800:0222:2222

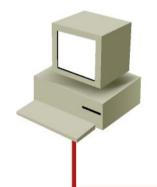
Layer 3 = 192.168.3.2

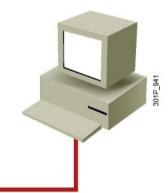
Host-to-Host Packet Delivery (20 of 22)



Host-to-Host Packet Delivery (21 of 22)







Layer 2 = 0800:0222:2222

Layer 3 = 192.168.3.1

DST MAC

Layer 2 = 0800:0222:1111

Layer 3 = 192.168.3.2

Host-to-Host Packet Delivery (22 of 22)

I need to send an ACK to the data that I received.

ACK = 4SEQ = 3

SRC IP	DST IP	ACK = 4
192.168.3.2	192.168.3.1	SEQ = 3

DST MAC	SRC MAC	SRC IP	DST IP	ACK = 4
0800:0222:2222	0800:0222:1111	192.168.3.2	192.168.3.1	SEQ = 3

DST MAC 0800:0222:2222 0800:0222:1111

SRC MAC

SRC IP 192.168.3.2

DST IP 192.168.3.1 ACK = 4SEQ = 3

Layer 3 = 192.168.3.1

Layer 2 = 0800:0222:2222

Layer 3 = 192.168.3.2