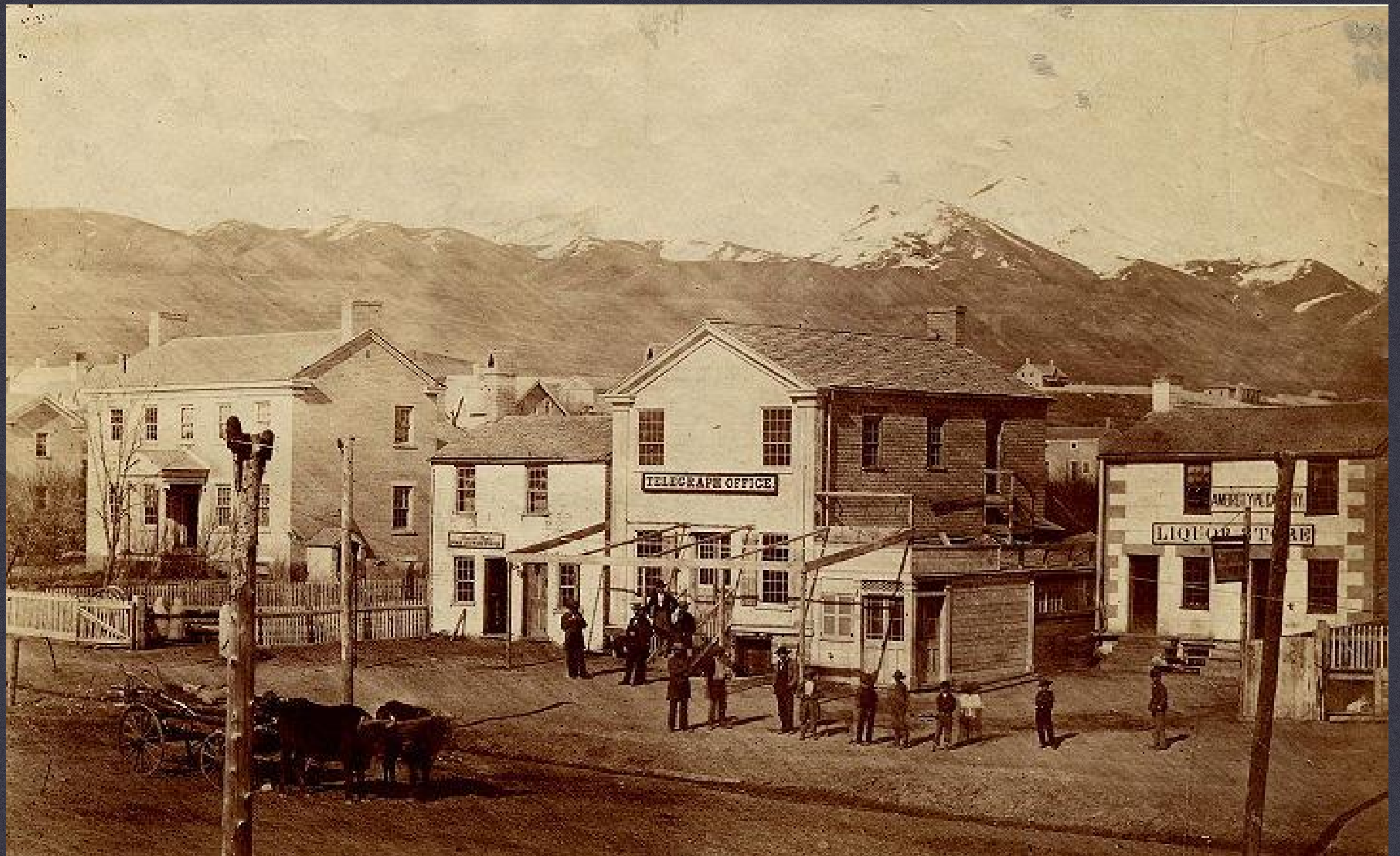




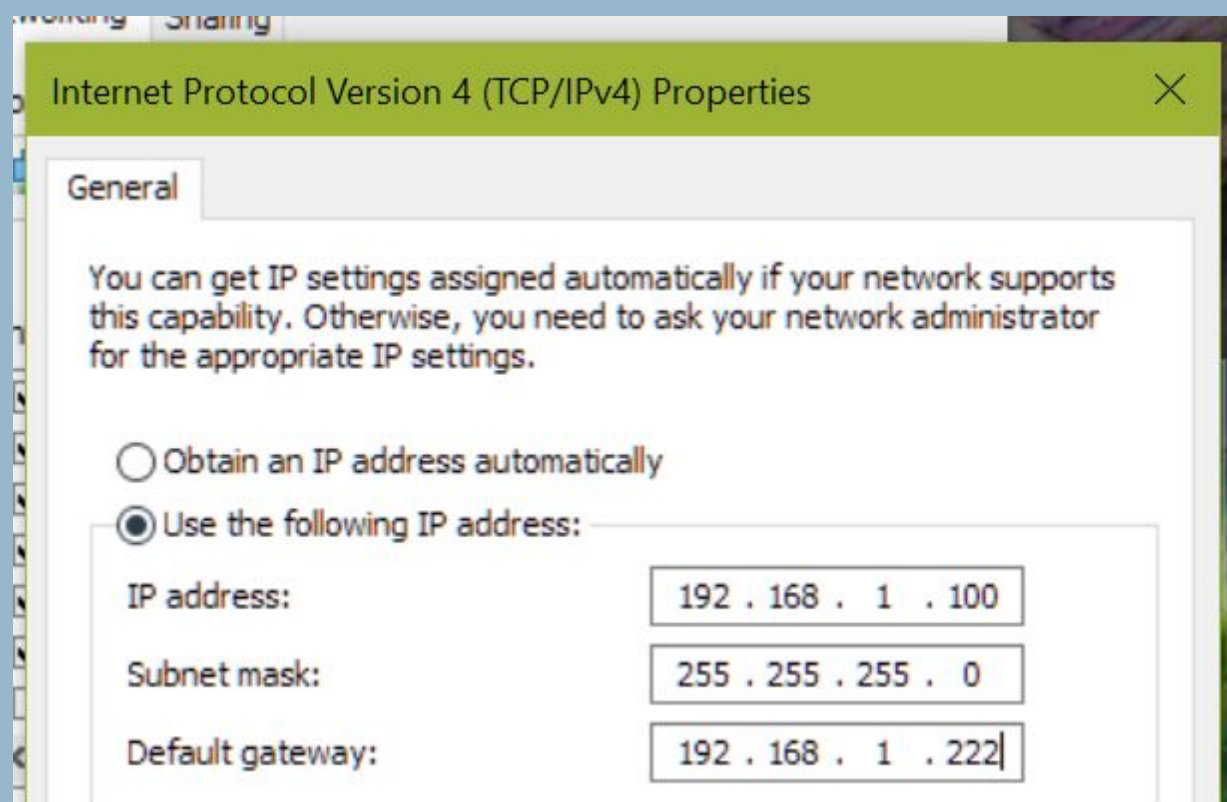
**“The dot, therefore, involves time, but this time is variable, according to circumstances. The length of the dot should increase with the length of the circuit. In long submarine lines the dot has to be made longer than the dash itself on short open air lines...”**

**—*Modern Practice of the Electric Telegraph*  
Frank L. Pope, 1881**









425-629-5076

Area network

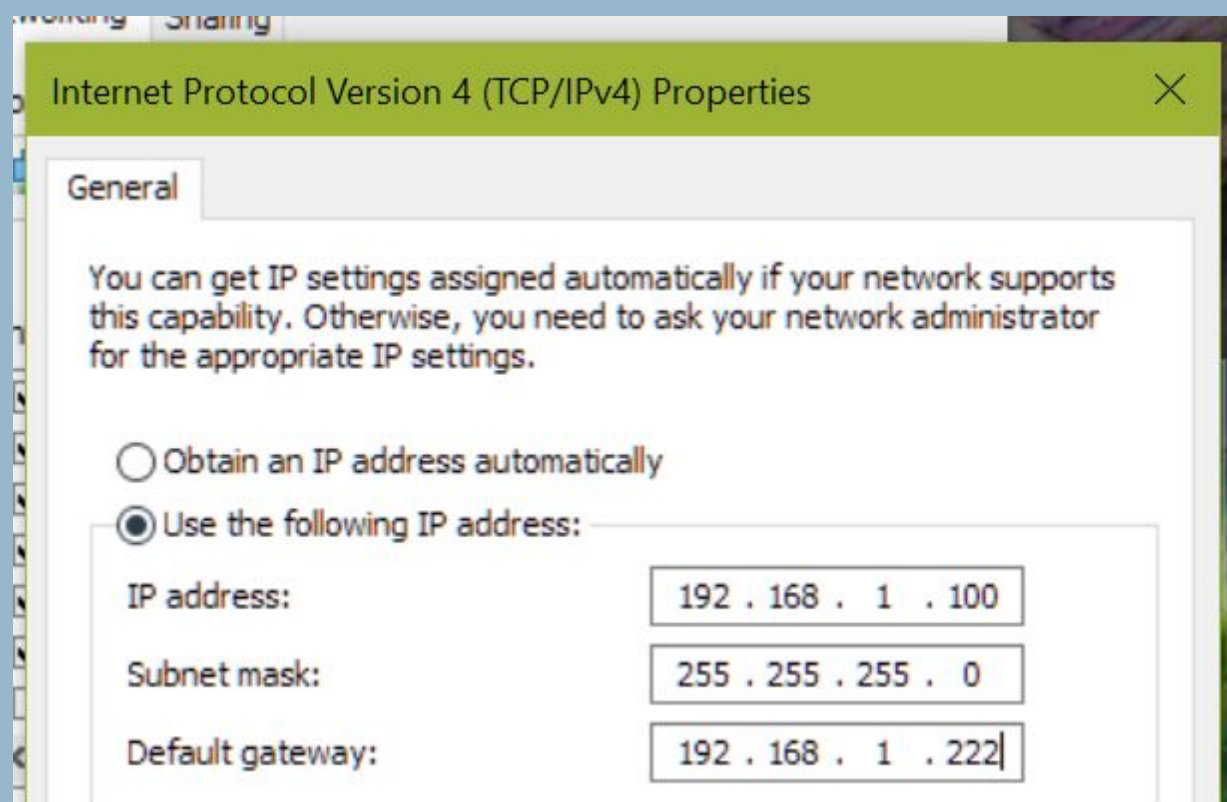
Local network

Node

## TCP/IP ADDRESSING

IP ADDRESS CONFIGURATION DIALOG (WINDOWS NT 4.0, 1997)



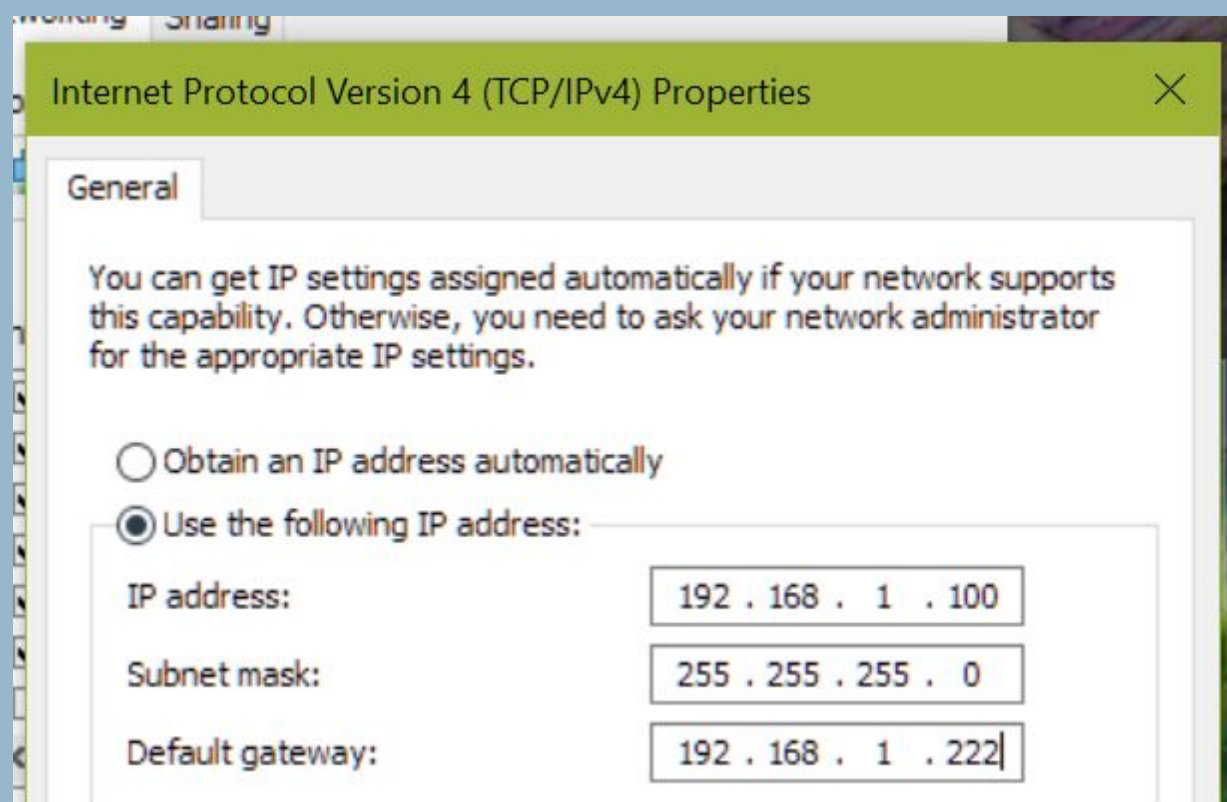


192 . 168 . 1 . 100  
255 . 255 . 255 . 0

## TCP/IP ADDRESSING

IP ADDRESS CONFIGURATION DIALOG (WINDOWS NT 4.0, 1997)



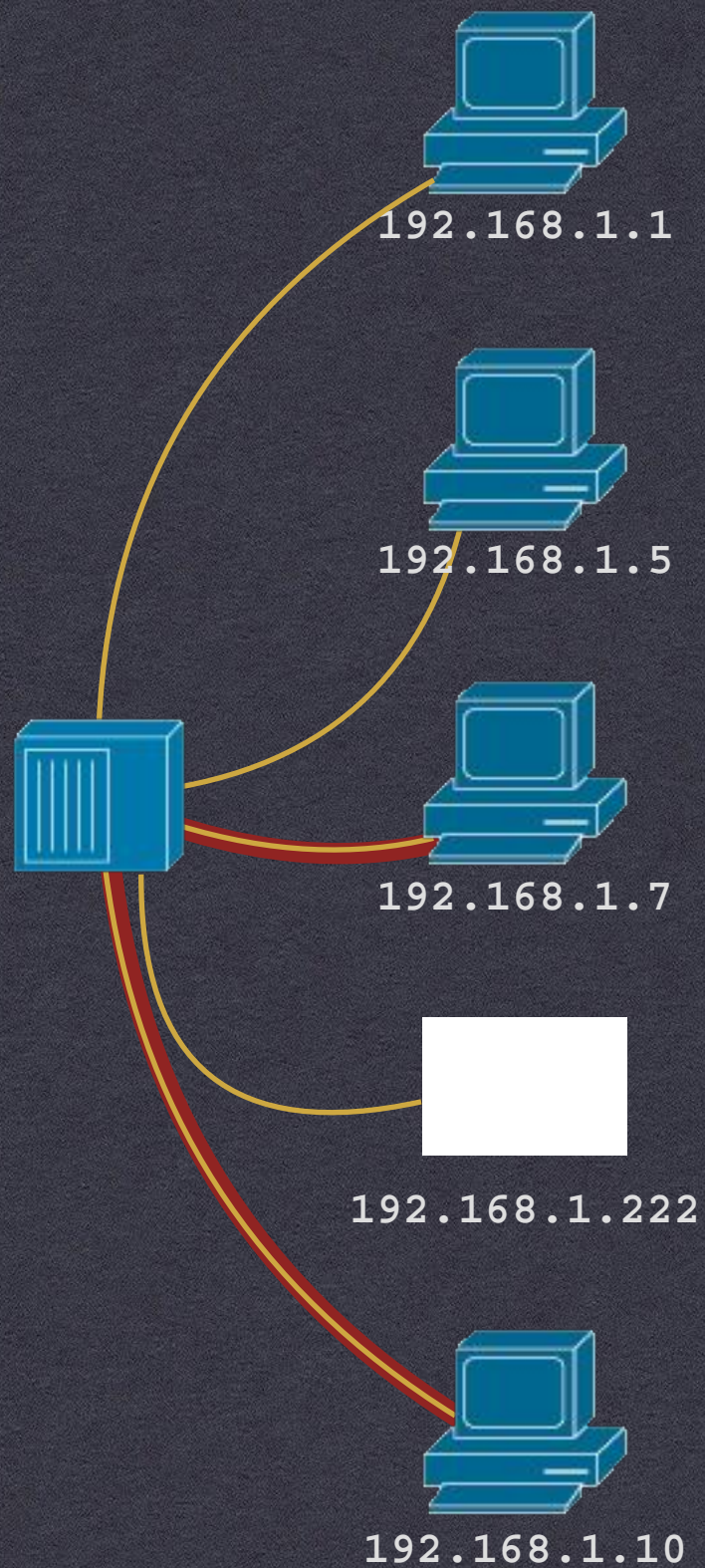


11000000.10101000.00000001.01100100  
11111111.11111111.11111111.00000000  
11000000.10101000.00000000.  
01100100

## TCP/IP ADDRESSING

IP ADDRESS CONFIGURATION DIALOG (WINDOWS NT 4.0, 1997)

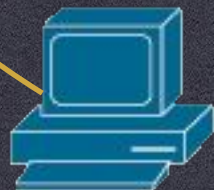
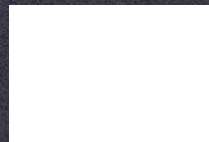




# TCP/IP ROUTING

LOCAL AREA NETWORK (LAN): "PING 192.168.1.7"





192.168.1.222

74.40.1.101

192.168.1.10

# TCP/IP ROUTING

WIDE AREA NETWORK (WAN): "PING 68.142.77.176"

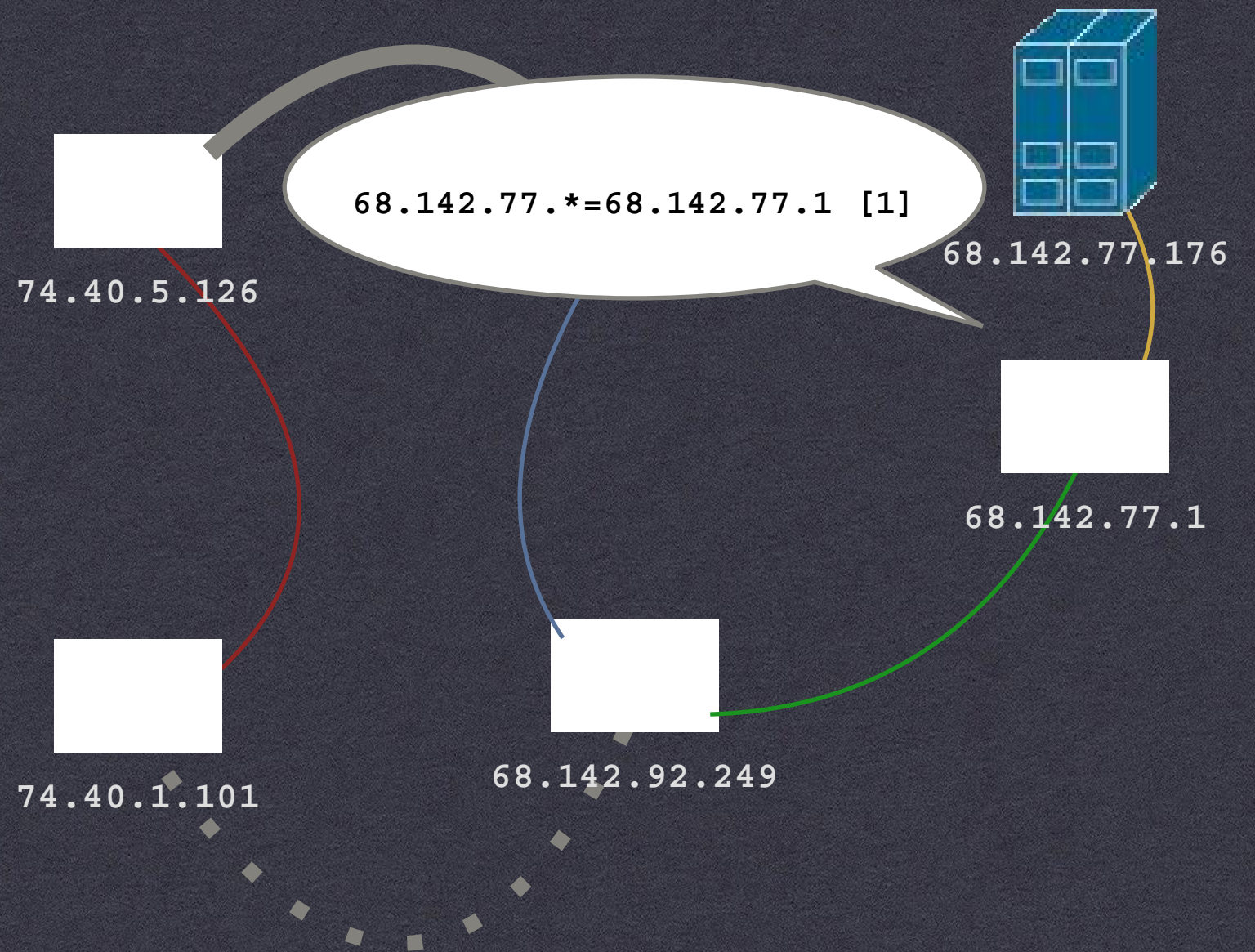




# TCP/IP ROUTING

WIDE AREA NETWORK (WAN): “PING 68.142.77.176”

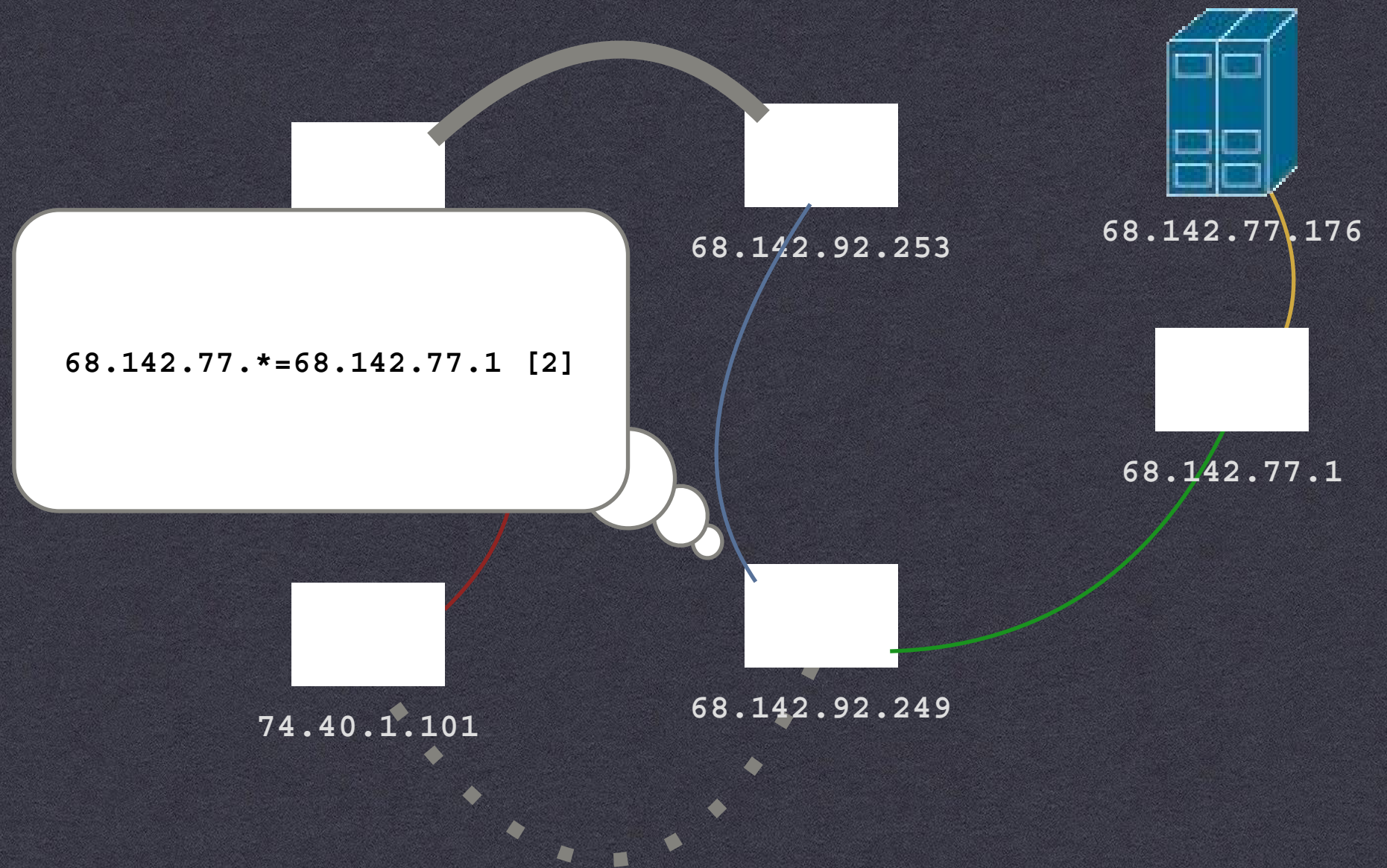




# TCP/IP ROUTING

WIDE AREA NETWORK (WAN): “PING 68.142.77.176”

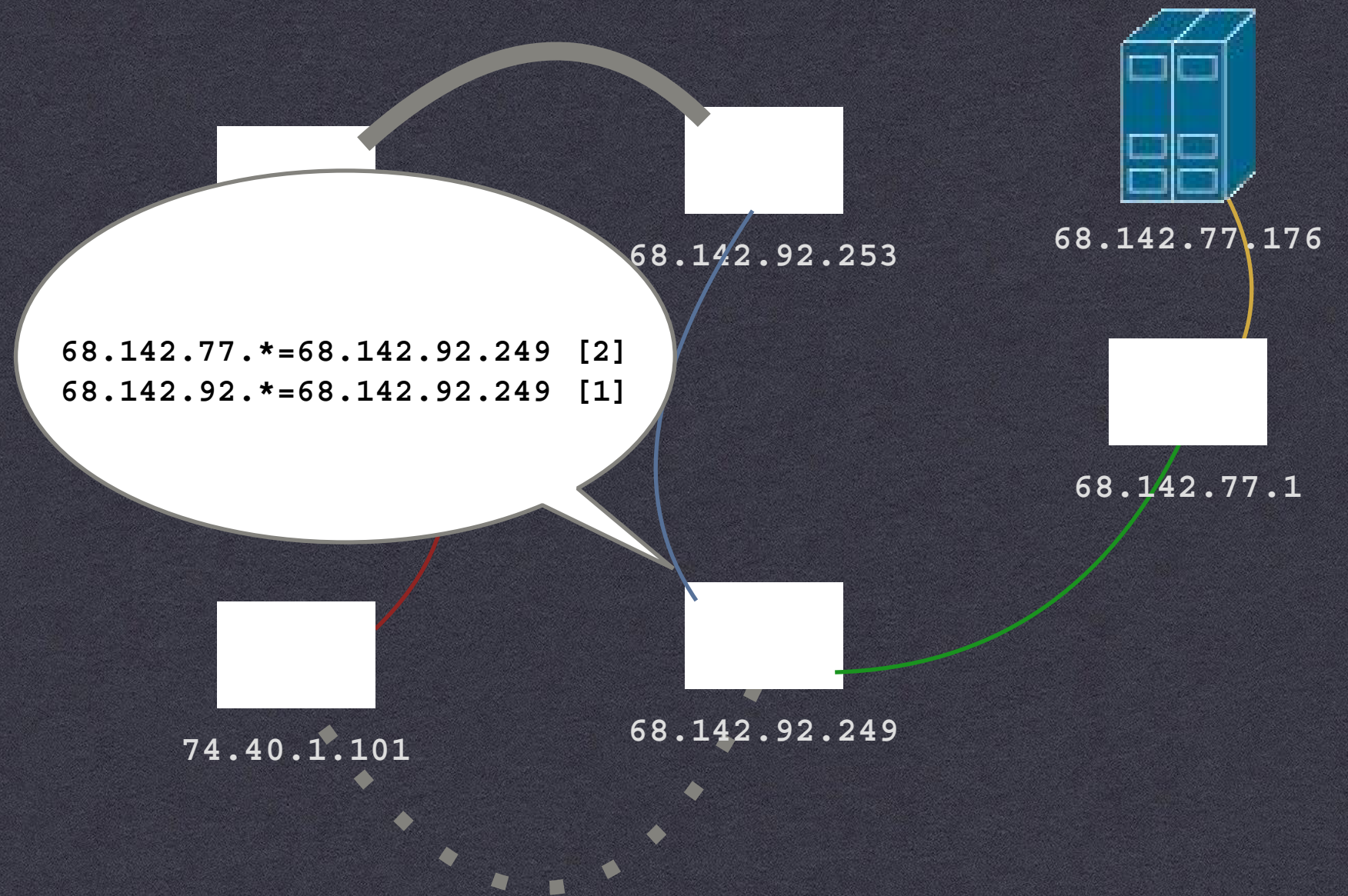




# TCP/IP ROUTING

WIDE AREA NETWORK (WAN): “PING 68.142.77.176”



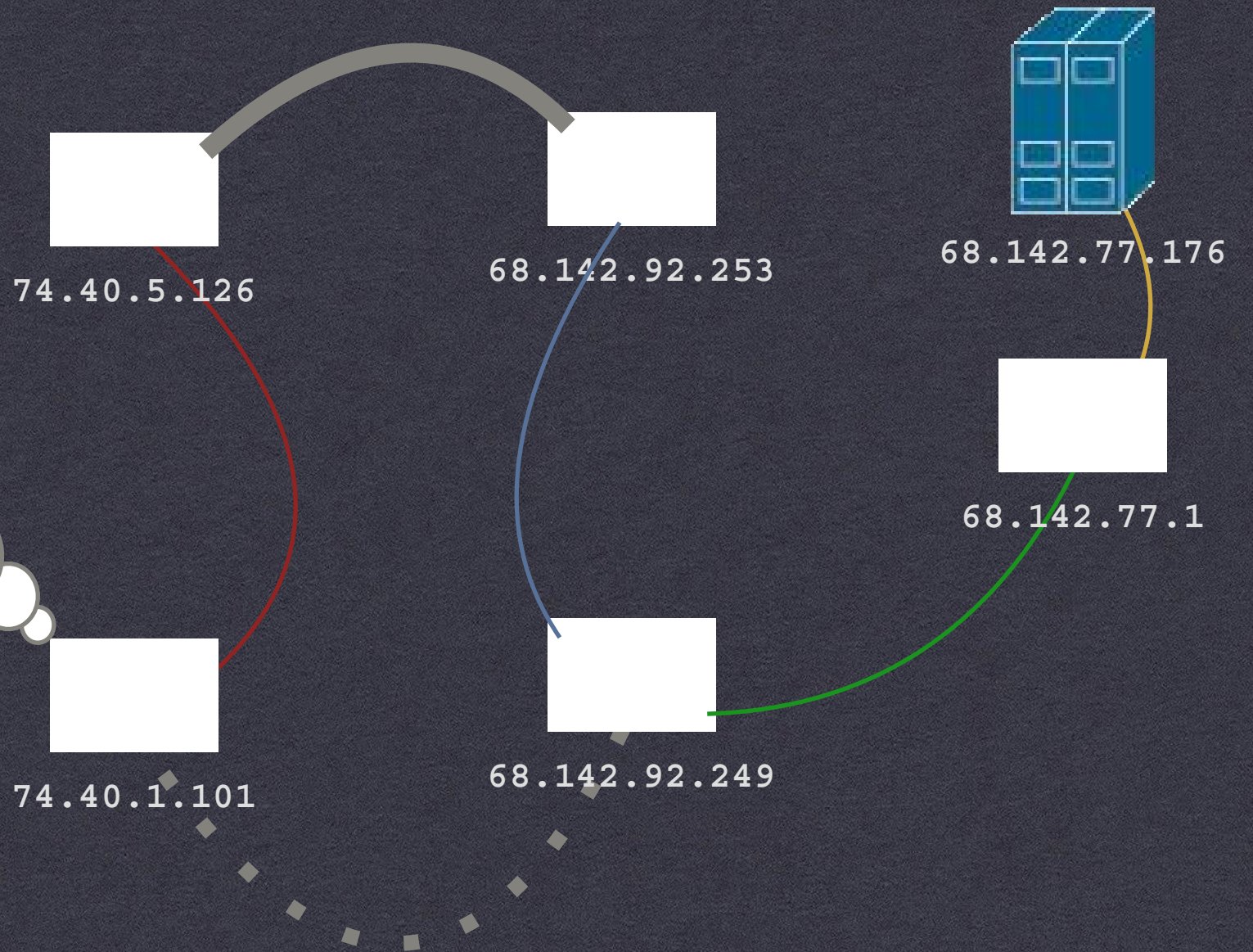


# TCP/IP ROUTING

WIDE AREA NETWORK (WAN): “PING 68.142.77.176”



68.142.77.\*=68.142.92.249 [3]  
68.142.92.\*=68.142.92.249 [2]



# TCP/IP ROUTING

WIDE AREA NETWORK (WAN): “PING 68.142.77.176”



68.142.77.\*=68.142.92.249 [3]  
68.142.92.\*=68.142.92.253 [1]

74.40.5.126

68.142.92.253

68.142.77.176

68.142.77.1

74.40.1.101

68.142.92.249

# TCP/IP ROUTING

WIDE AREA NETWORK (WAN): "PING 68.142.77.176"



68.142.77.\*=68.142.92.253 [3]  
68.142.92.\*=68.142.92.253 [1]

74.40.5.126

68.142.92.253

68.142.77.176

68.142.77.1

74.40.1.101

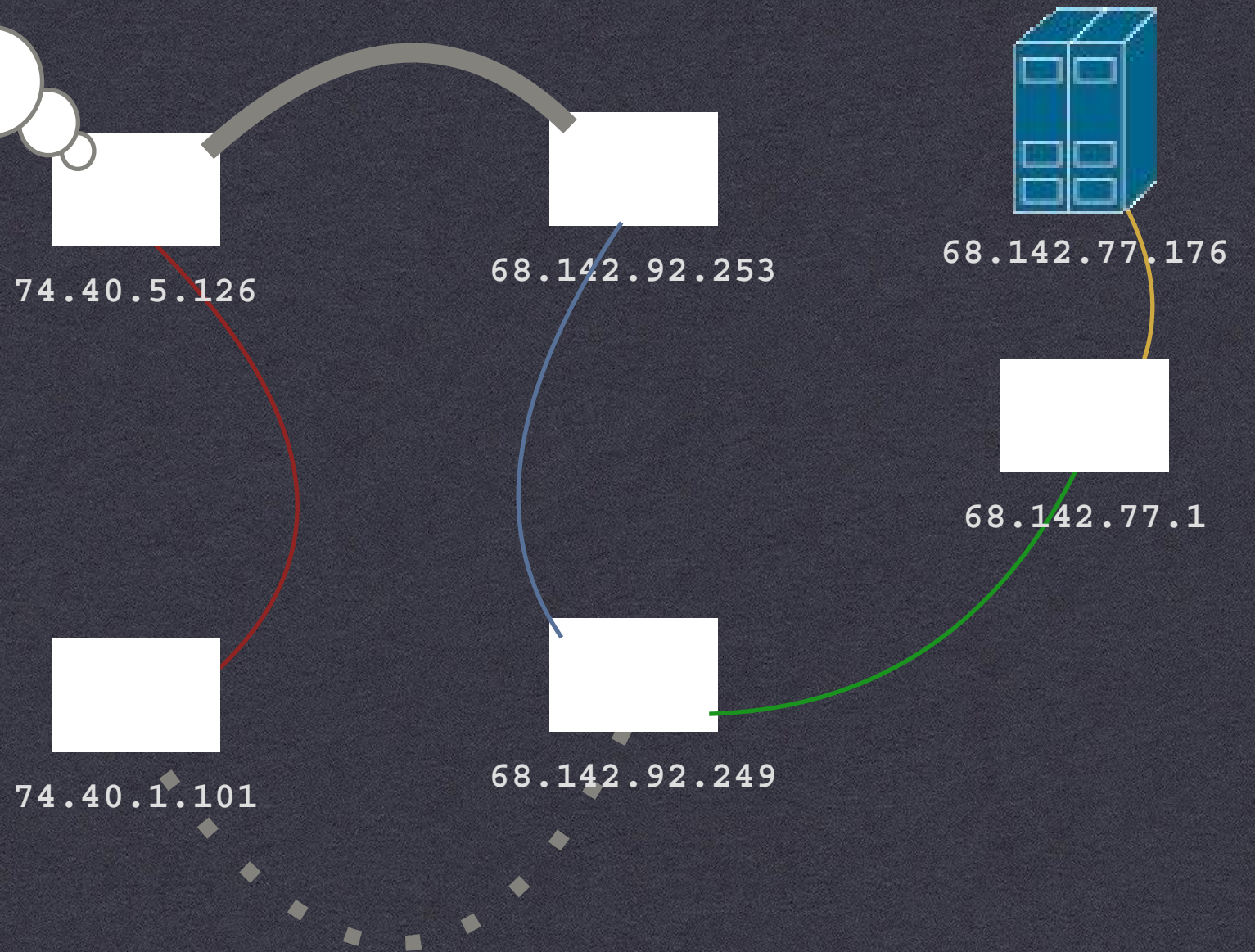
68.142.92.249

# TCP/IP ROUTING

WIDE AREA NETWORK (WAN): "PING 68.142.77.176"



68.142.77.\*=68.142.92.253 [4]  
68.142.92.\*=68.142.92.253 [2]

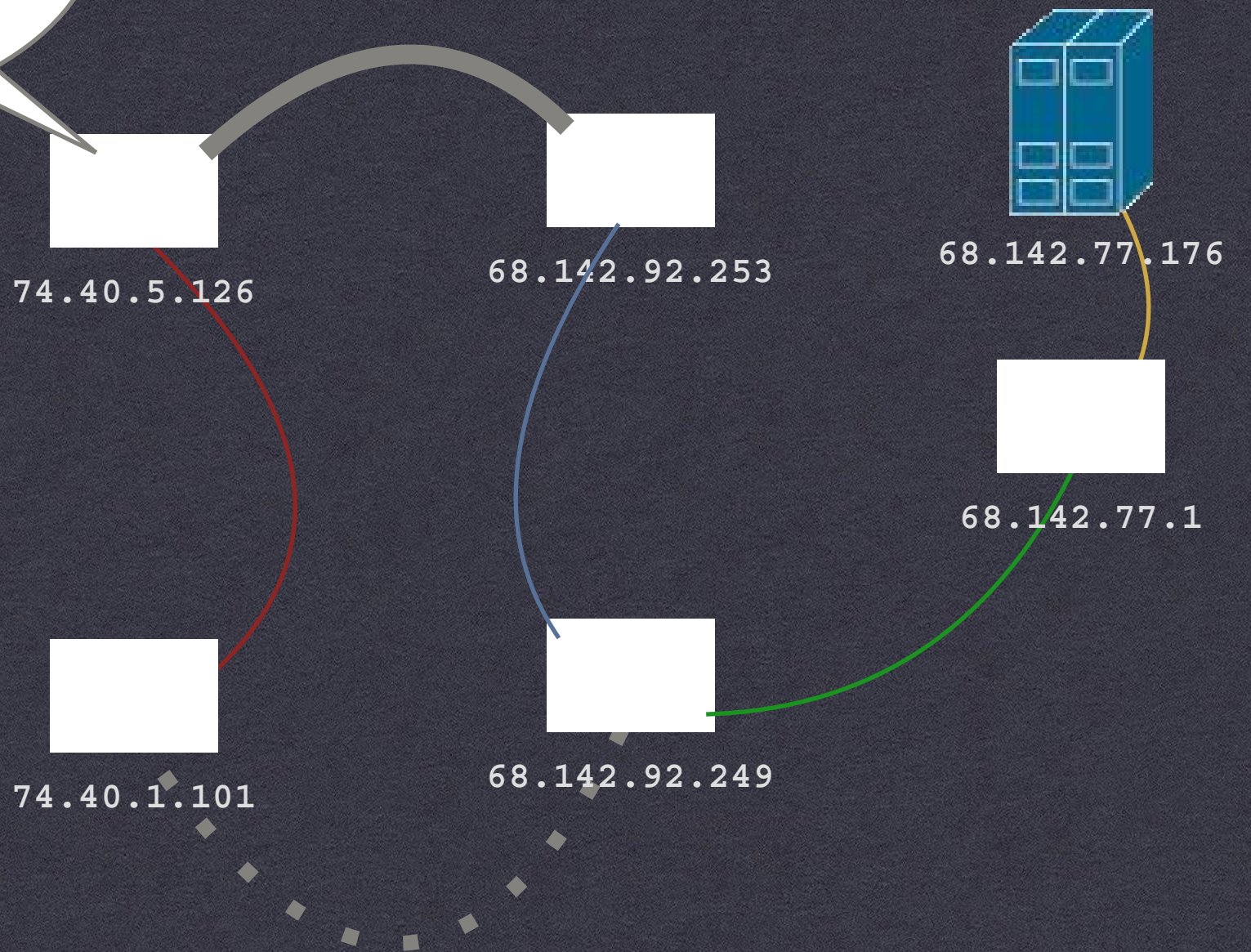


# TCP/IP ROUTING

WIDE AREA NETWORK (WAN): "PING 68.142.77.176"



68.142.77.\*=74.40.5.126 [4]  
68.142.92.\*=74.40.5.126 [2]

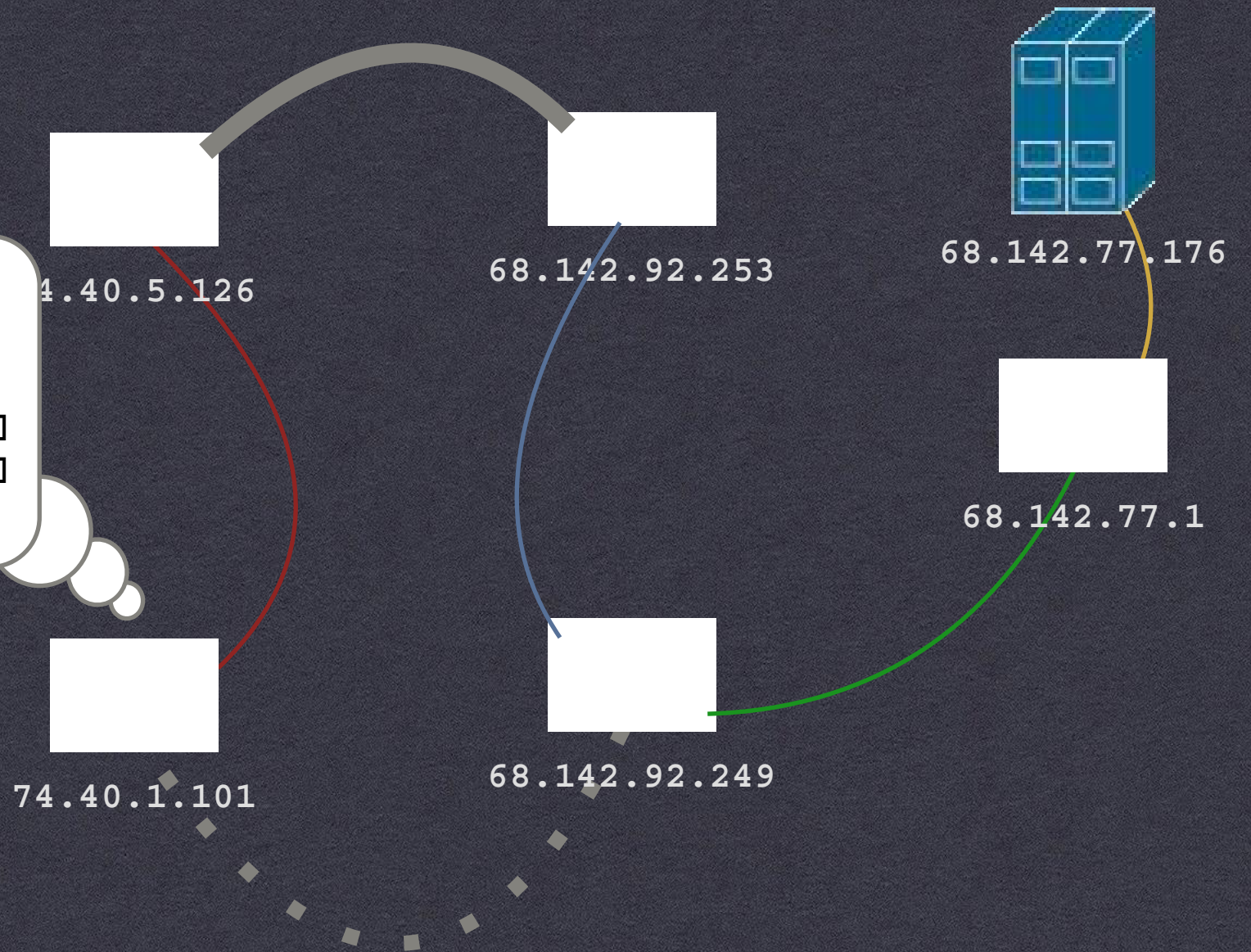


# TCP/IP ROUTING

WIDE AREA NETWORK (WAN): "PING 68.142.77.176"



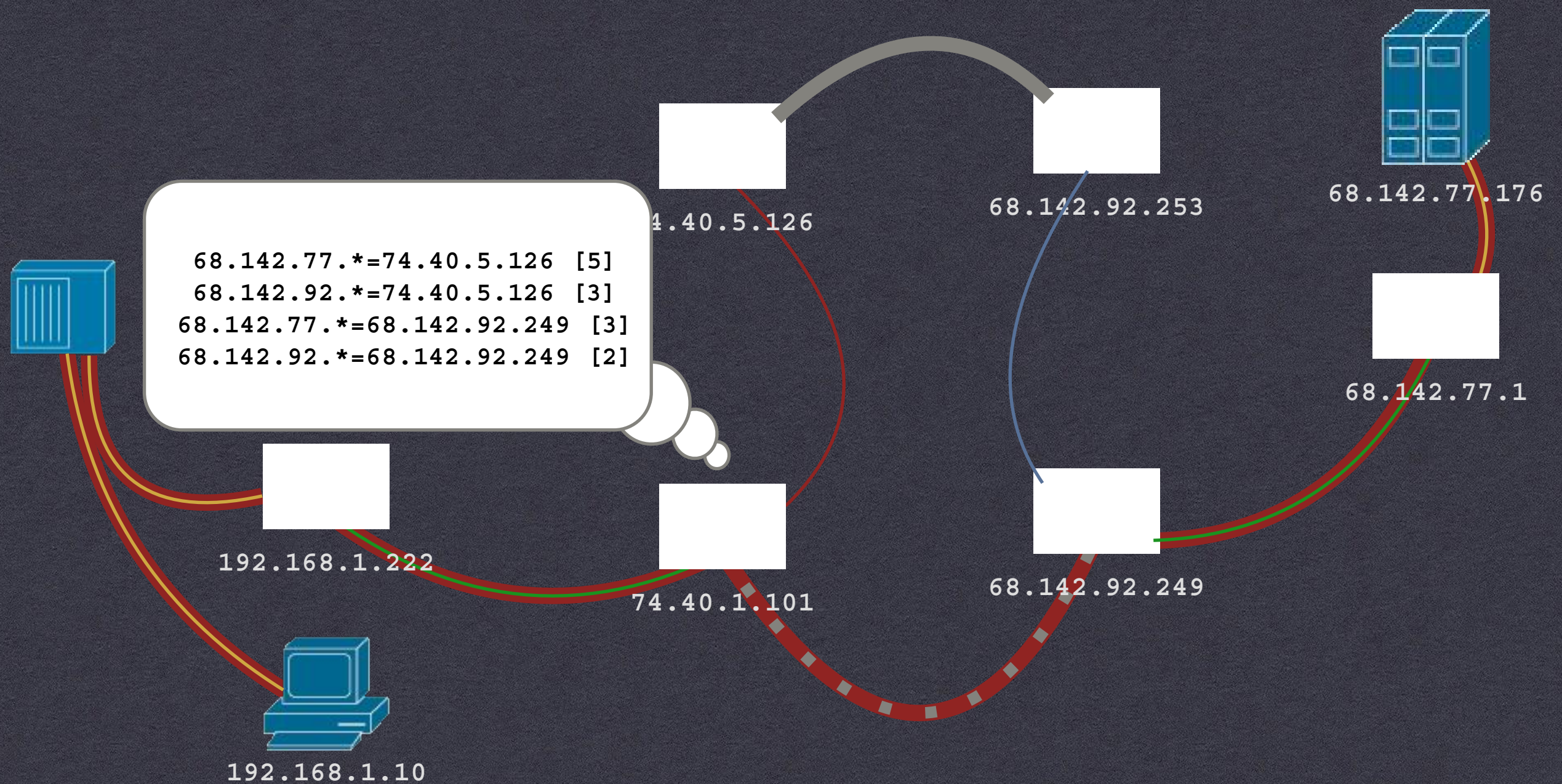
68.142.77.\*=74.40.5.126 [5]  
68.142.92.\*=74.40.5.126 [3]  
68.142.77.\*=68.142.92.249 [3]  
68.142.92.\*=68.142.92.249 [2]



# TCP/IP ROUTING

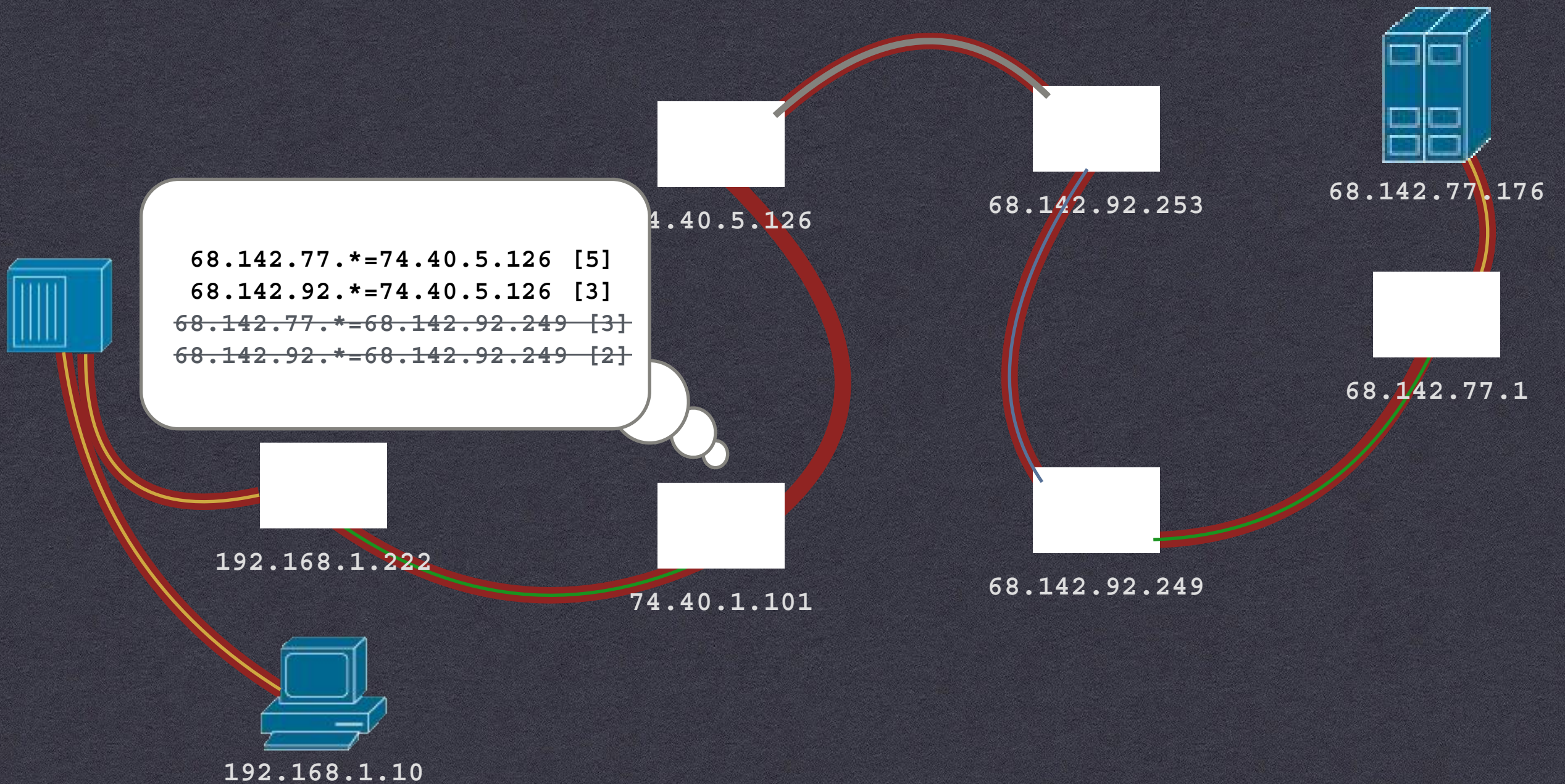
WIDE AREA NETWORK (WAN): "PING 68.142.77.176"





## WIDE AREA NETWORK (WAN): “PING 68.142.77.176”





# TCP/IP ROUTING

WIDE AREA NETWORK (WAN): "PING 68.142.77.176"



										1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
Vers				Hdr Sz				Service								Datagram Len															
Identifier																Flags				Fragmentation Offset											
Time to Live								Protocol								Header Checksum															
Source Address																															
Destination Address																															
Options [optional]																															
Source Port																Destination Port															
Length (incl. header)																Checksum															
Data																															



										1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
Vers				Hdr Sz				Service								Datagram Len															
Identifier																Flags				Fragmentation Offset											
Time to Live								Protocol								Header Checksum															
Source Address																															
Destination Address																															
Options [optional]																															
Source Port																Destination Port															
Length (incl. header)																Checksum															
Data																															

[illegible]



										1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
Vers				Hdr Sz				Service								Datagram Len															
Identifier																Flags				Fragmentation Offset											
Time to Live								Protocol								Header Checksum															
Source Address																															
Destination Address																															
Options [optional]																															
Source Port																Destination Port															
Length (incl. header)																Checksum															
Data																															

[illegible]



										1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
Vers				Hdr Sz				Service								Datagram Len															
Identifier																Flags				Fragmentation Offset											
Time to Live								Protocol								Header Checksum															
Source Address																															
Destination Address																															
Options [optional]																															
Source Port																Destination Port															
Length (incl. header)																Checksum															
Data																															

[illegible]







										1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	2	3	3
0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1
Vers				Hdr Sz				Service								Datagram Len															
Identifier																Flags				Fragmentation Offset											
Time to Live								Protocol								Header Checksum															
Source Address																															
Destination Address																															
Options [optional]																															
Source Port																Destination Port															
Length (incl. header)																Checksum															
Data																															