```
---ROUTER---

PC1> ip 192.168.1.10 255.255.255.0 192.168.1.1

PC2> ip 192.168.2.10 255.255.255.0 192.168.2.1

R1(config)#interface FastEthernet0/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shutdown

R1(config)#interface FastEthernet1/0
R1(config-if)#ip address 192.168.2.1 255.255.255.0
R1(config-if)#no shutdown

R1(config)#ip routing

PC1> ping 192.168.2.10
84 bytes from 192.168.2.10 icmp_seq=1 ttl=63 time=16.893 ms
84 bytes from 192.168.2.10 icmp_seq=2 ttl=63 time=14.767 ms
84 bytes from 192.168.2.10 icmp_seq=3 ttl=63 time=16.000 ms
84 bytes from 192.168.2.10 icmp_seq=4 ttl=63 time=14.879 ms
84 bytes from 192.168.2.10 icmp_seq=5 ttl=63 time=14.933 ms

Link1:
arp:
141   1117.857714 00:50:79:66:68:01Broadcast   ARP   64    Who has
192.168.1.1? Tell 192.168.1.10
Frame 141: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on
interface -, id 0
Ethernet II, Src: 00:50:79:66:68:01 (00:50:79:66:68:01), Dst: Broadcast
(ff:ff:ff:ff:ff:ff)
Address Resolution Protocol (request)
    Hardware type: Ethernet (1)
    Protocol type: IPv4 (0x0800)
    Hardware size: 6
    Protocol size: 4
    Opcode: request (1)
    Sender MAC address: 00:50:79:66:68:01 (00:50:79:66:68:01)
    Sender IP address: 192.168.1.10
    Target MAC address: Broadcast (ff:ff:ff:ff:ff:ff)
    Target IP address: 192.168.1.1

142   1117.861820 cc:01:3b:69:00:0000:50:79:66:68:01ARP   60
      192.168.1.1 is at cc:01:3b:69:00:00
Frame 142: 60 bytes on wire (480 bits), 60 bytes captured (480 bits) on
interface -, id 0
Ethernet II, Src: cc:01:3b:69:00:00 (cc:01:3b:69:00:00), Dst:
00:50:79:66:68:01 (00:50:79:66:68:01)
Address Resolution Protocol (reply)
    Hardware type: Ethernet (1)
    Protocol type: IPv4 (0x0800)
    Hardware size: 6
    Protocol size: 4
    Opcode: reply (2)
```

```
    Sender MAC address: cc:01:3b:69:00:00 (cc:01:3b:69:00:00)
    Sender IP address: 192.168.1.1
    Target MAC address: 00:50:79:66:68:01 (00:50:79:66:68:01)
    Target IP address: 192.168.1.10
icmp:
105   898.575001 192.168.1.10     192.168.2.10     ICMP  98    Echo
(ping) request  id=0xa4dd, seq=1/256, ttl=64 (reply in 106)
Frame 105: 98 bytes on wire (784 bits), 98 bytes captured (784 bits) on
interface -, id 0
Ethernet II, Src: 00:50:79:66:68:01 (00:50:79:66:68:01), Dst:
cc:01:3b:69:00:00 (cc:01:3b:69:00:00)
Internet Protocol Version 4, Src: 192.168.1.10, Dst: 192.168.2.10
Internet Control Message Protocol
    Type: 8 (Echo (ping) request)
    Code: 0
    Checksum: 0x7b2d [correct]
    [Checksum Status: Good]
    Identifier (BE): 42205 (0xa4dd)
    Identifier (LE): 56740 (0xdda4)
    Sequence Number (BE): 1 (0x0001)
    Sequence Number (LE): 256 (0x0100)
    [Response frame: 106]
    Data (56 bytes)

106   898.605054 192.168.2.10     192.168.1.10     ICMP  98    Echo
(ping) reply    id=0xa4dd, seq=1/256, ttl=63 (request in 105)
Internet Control Message Protocol
    Type: 0 (Echo (ping) reply)
    Code: 0
    Checksum: 0x832d [correct]
    [Checksum Status: Good]
    Identifier (BE): 42205 (0xa4dd)
    Identifier (LE): 56740 (0xdda4)
    Sequence Number (BE): 1 (0x0001)
    Sequence Number (LE): 256 (0x0100)
    [Request frame: 105]
    [Response time: 30,053 ms]
    Data (56 bytes)

Link2:
arp:
5     21.875003  cc:01:3b:69:00:1000:50:79:66:68:00ARP   60
      192.168.2.1 is at cc:01:3b:69:00:10
Address Resolution Protocol (reply)
    Hardware type: Ethernet (1)
    Protocol type: IPv4 (0x0800)
    Hardware size: 6
    Protocol size: 4
    Opcode: reply (2)
    Sender MAC address: cc:01:3b:69:00:10 (cc:01:3b:69:00:10)
    Sender IP address: 192.168.2.1
    Target MAC address: 00:50:79:66:68:00 (00:50:79:66:68:00)
    Target IP address: 192.168.2.10
```

```
4     21.871124   00:50:79:66:68:00Broadcast   ARP   64    Who has
192.168.2.1? Tell 192.168.2.10
Address Resolution Protocol (request)
    Hardware type: Ethernet (1)
    Protocol type: IPv4 (0x0800)
    Hardware size: 6
    Protocol size: 4
    Opcode: request (1)
    Sender MAC address: 00:50:79:66:68:00 (00:50:79:66:68:00)
    Sender IP address: 192.168.2.10
    Target MAC address: Broadcast (ff:ff:ff:ff:ff:ff)
    Target IP address: 192.168.2.1

icmp:
6     21.875373   192.168.2.10     192.168.1.10     ICMP  98    Echo
(ping) request  id=0x07e2, seq=1/256, ttl=64 (reply in 7)
Internet Control Message Protocol
    Type: 8 (Echo (ping) request)
    Code: 0
    Checksum: 0x1829 [correct]
    [Checksum Status: Good]
    Identifier (BE): 2018 (0x07e2)
    Identifier (LE): 57863 (0xe207)
    Sequence Number (BE): 1 (0x0001)
    Sequence Number (LE): 256 (0x0100)
    [Response frame: 7]
    Data (56 bytes)
7     21.905237   192.168.1.10     192.168.2.10     ICMP  98    Echo
(ping) reply    id=0x07e2, seq=1/256, ttl=63 (request in 6)
Internet Control Message Protocol
    Type: 0 (Echo (ping) reply)
    Code: 0
    Checksum: 0x2029 [correct]
    [Checksum Status: Good]
    Identifier (BE): 2018 (0x07e2)
    Identifier (LE): 57863 (0xe207)
    Sequence Number (BE): 1 (0x0001)
    Sequence Number (LE): 256 (0x0100)
    [Request frame: 6]
    [Response time: 29,864 ms]
    Data (56 bytes)

---SWITCH---

PC3> ip 192.168.3.10 255.255.255.0
PC3> ping 192.168.3.20

PC4> ip 192.168.3.20 255.255.255.0
PC4> ping 192.168.3.10

Link1:
arp:
1     0.000000    00:50:79:66:68:02Broadcast   ARP   64    Who has
192.168.3.20? Tell 192.168.3.10
```

```
Address Resolution Protocol (request)
    Hardware type: Ethernet (1)
    Protocol type: IPv4 (0x0800)
    Hardware size: 6
    Protocol size: 4
    Opcode: request (1)
    Sender MAC address: 00:50:79:66:68:02 (00:50:79:66:68:02)
    Sender IP address: 192.168.3.10
    Target MAC address: Broadcast (ff:ff:ff:ff:ff:ff)
    Target IP address: 192.168.3.20

2     0.000139   00:50:79:66:68:0300:50:79:66:68:02ARP   64
      192.168.3.20 is at 00:50:79:66:68:03
Address Resolution Protocol (reply)
    Hardware type: Ethernet (1)
    Protocol type: IPv4 (0x0800)
    Hardware size: 6
    Protocol size: 4
    Opcode: reply (2)
    Sender MAC address: 00:50:79:66:68:03 (00:50:79:66:68:03)
    Sender IP address: 192.168.3.20
    Target MAC address: 00:50:79:66:68:02 (00:50:79:66:68:02)
    Target IP address: 192.168.3.10
icmp:
3     0.001000   192.168.3.10     192.168.3.20     ICMP  98    Echo
(ping) request  id=0xf5ec, seq=1/256, ttl=64 (reply in 4)
Internet Control Message Protocol
    Type: 8 (Echo (ping) request)
    Code: 0
    Checksum: 0x2a1e [correct]
    [Checksum Status: Good]
    Identifier (BE): 62956 (0xf5ec)
    Identifier (LE): 60661 (0xecf5)
    Sequence Number (BE): 1 (0x0001)
    Sequence Number (LE): 256 (0x0100)
    [Response frame: 4]
    Data (56 bytes)
4     0.001113   192.168.3.20     192.168.3.10     ICMP  98    Echo
(ping) reply    id=0xf5ec, seq=1/256, ttl=64 (request in 3)
Internet Control Message Protocol
    Type: 0 (Echo (ping) reply)
    Code: 0
    Checksum: 0x321e [correct]
    [Checksum Status: Good]
    Identifier (BE): 62956 (0xf5ec)
    Identifier (LE): 60661 (0xecf5)
    Sequence Number (BE): 1 (0x0001)
    Sequence Number (LE): 256 (0x0100)
    [Request frame: 3]
    [Response time: 0,113 ms]
    Data (56 bytes)

Link2:
arp:
```

```
1     0.000000    00:50:79:66:68:03Broadcast   ARP   64    Who has
192.168.3.10? Tell 192.168.3.20
Address Resolution Protocol (request)
    Hardware type: Ethernet (1)
    Protocol type: IPv4 (0x0800)
    Hardware size: 6
    Protocol size: 4
    Opcode: request (1)
    Sender MAC address: 00:50:79:66:68:03 (00:50:79:66:68:03)
    Sender IP address: 192.168.3.20
    Target MAC address: Broadcast (ff:ff:ff:ff:ff:ff)
    Target IP address: 192.168.3.10

2     0.000142    00:50:79:66:68:0200:50:79:66:68:03ARP   64
      192.168.3.10 is at 00:50:79:66:68:02
Frame 2: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on
interface -, id 0
Ethernet II, Src: 00:50:79:66:68:02 (00:50:79:66:68:02), Dst:
00:50:79:66:68:03 (00:50:79:66:68:03)
Address Resolution Protocol (reply)
    Hardware type: Ethernet (1)
    Protocol type: IPv4 (0x0800)
    Hardware size: 6
    Protocol size: 4
    Opcode: reply (2)
    Sender MAC address: 00:50:79:66:68:02 (00:50:79:66:68:02)
    Sender IP address: 192.168.3.10
    Target MAC address: 00:50:79:66:68:03 (00:50:79:66:68:03)
    Target IP address: 192.168.3.20
icmp:
3     0.001041    192.168.3.20     192.168.3.10     ICMP  98    Echo
(ping) request  id=0x1cee, seq=1/256, ttl=64 (reply in 4)
Internet Control Message Protocol
    Type: 8 (Echo (ping) request)
    Code: 0
    Checksum: 0x031d [correct]
    [Checksum Status: Good]
    Identifier (BE): 7406 (0x1cee)
    Identifier (LE): 60956 (0xee1c)
    Sequence Number (BE): 1 (0x0001)
    Sequence Number (LE): 256 (0x0100)
    [Response frame: 4]
    Data (56 bytes)

4     0.001141    192.168.3.10     192.168.3.20     ICMP  98    Echo
(ping) reply    id=0x1cee, seq=1/256, ttl=64 (request in 3)
Internet Control Message Protocol
    Type: 0 (Echo (ping) reply)
    Code: 0
    Checksum: 0x0b1d [correct]
    [Checksum Status: Good]
    Identifier (BE): 7406 (0x1cee)
    Identifier (LE): 60956 (0xee1c)
    Sequence Number (BE): 1 (0x0001)
```

```
Sequence Number (LE): 256 (0x0100)
[Request frame: 3]
[Response time: 0,100 ms]
Data (56 bytes)
```