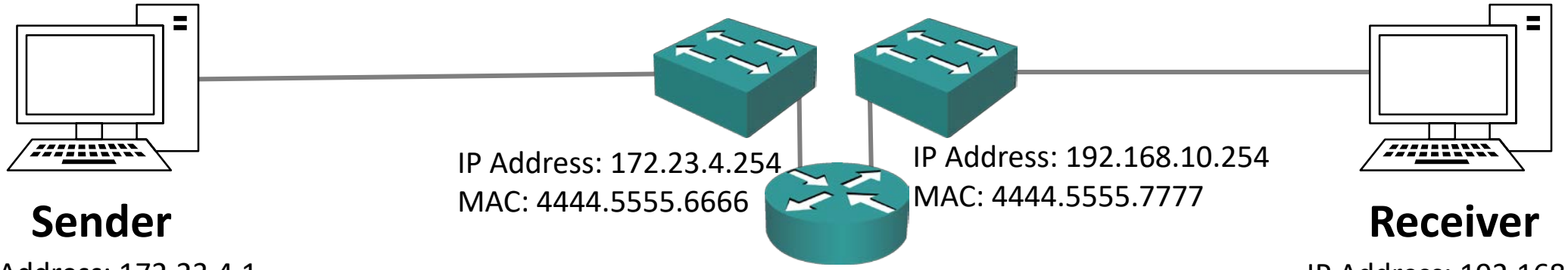
Routed Traffic

- When the sender and receiver are on different IP subnets, the traffic must be forwarded by a router
- In the following example, 172.23.4.1/24 wants to send a packet to 192.168.10.1/24

Routing Traffic



Sender

IP Address: 172.23.4.1
Subnet Mask: 255.255.255.0
DG: 172.23.4.254
MAC: 1111.2222.3333

IP Address: 172.23.4.254
MAC: 4444.5555.6666

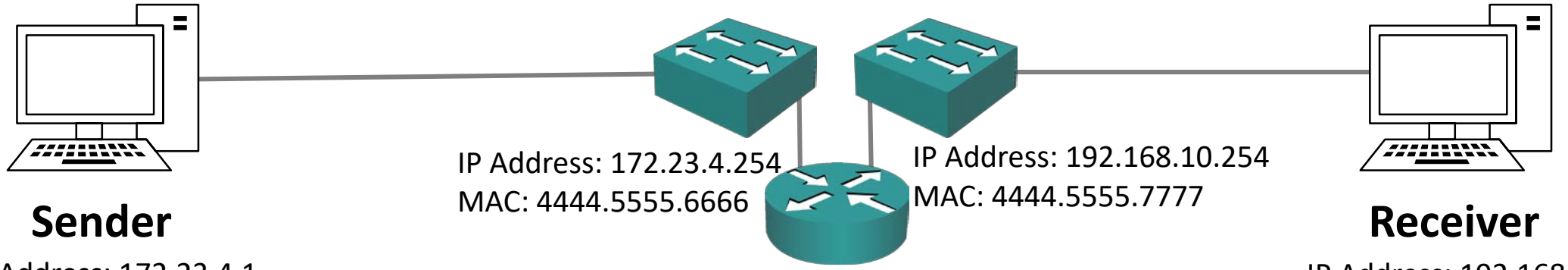
IP Address: 192.168.10.254
MAC: 4444.5555.7777

ROUTER

Receiver

IP Address: 192.168.10.1
Subnet Mask: 255.255.255.0
DG: 192.168.10.254
MAC: 2222.3333.4444

Routing Traffic



Sender

IP Address: 172.23.4.1
Subnet Mask: 255.255.255.0
DG: 172.23.4.254
MAC: 1111.2222.3333

IP Address: 172.23.4.254
MAC: 4444.5555.6666

IP Address: 192.168.10.254
MAC: 4444.5555.7777

ROUTER

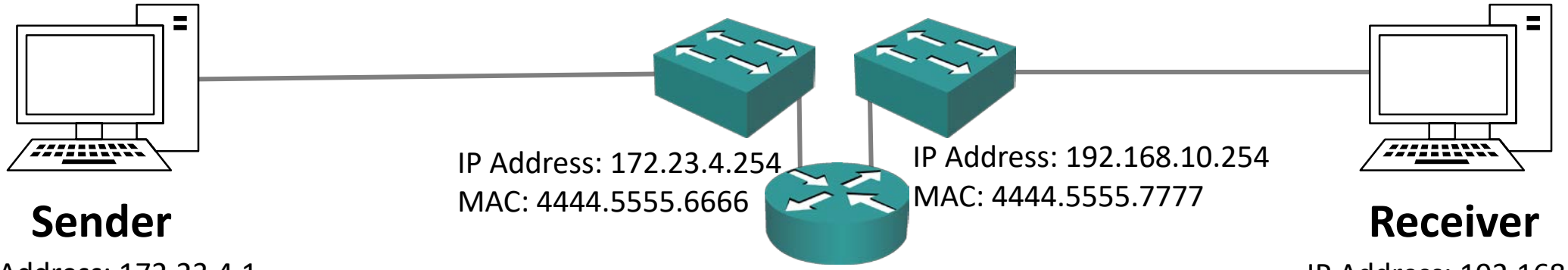
Receiver

IP Address: 192.168.10.1
Subnet Mask: 255.255.255.0
DG: 192.168.10.254
MAC: 2222.3333.4444

ARP Request for 172.23.4.254
Src MAC: 1111.2222.3333
Dst MAC: FFFF.FFFF.FFFF

ARP Reply
Src MAC: 4444.5555.6666
Dst MAC: 1111.2222.3333

Routing Traffic



Sender

IP Address: 172.23.4.1
Subnet Mask: 255.255.255.0
DG: 172.23.4.254
MAC: 1111.2222.3333

IP Address: 172.23.4.254
MAC: 4444.5555.6666

IP Address: 192.168.10.254
MAC: 4444.5555.7777

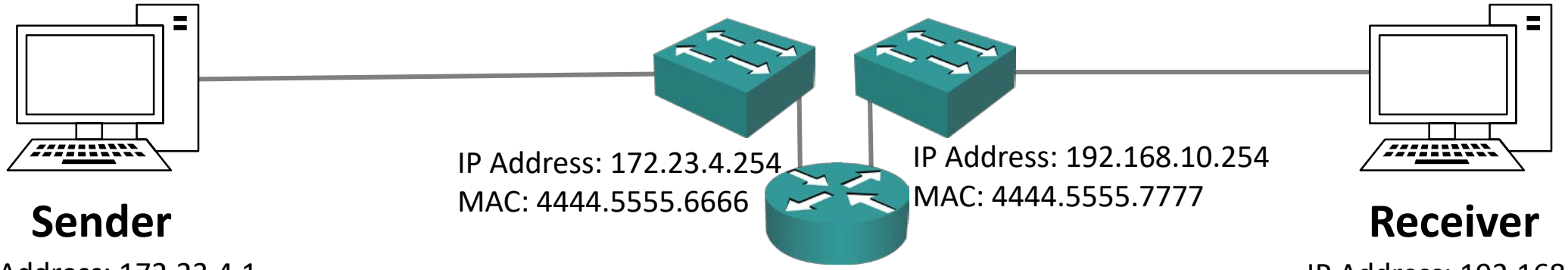
ROUTER

Receiver

IP Address: 192.168.10.1
Subnet Mask: 255.255.255.0
DG: 192.168.10.254
MAC: 2222.3333.4444

IP Packet
Src IP: 172.23.4.1
Dst IP: 192.168.10.1
Src MAC: 1111.2222.3333
Dst MAC: 4444.5555.6666

Routing Traffic



Sender

IP Address: 172.23.4.1
Subnet Mask: 255.255.255.0
DG: 172.23.4.254
MAC: 1111.2222.3333

IP Address: 172.23.4.254
MAC: 4444.5555.6666

IP Address: 192.168.10.254
MAC: 4444.5555.7777

ROUTER

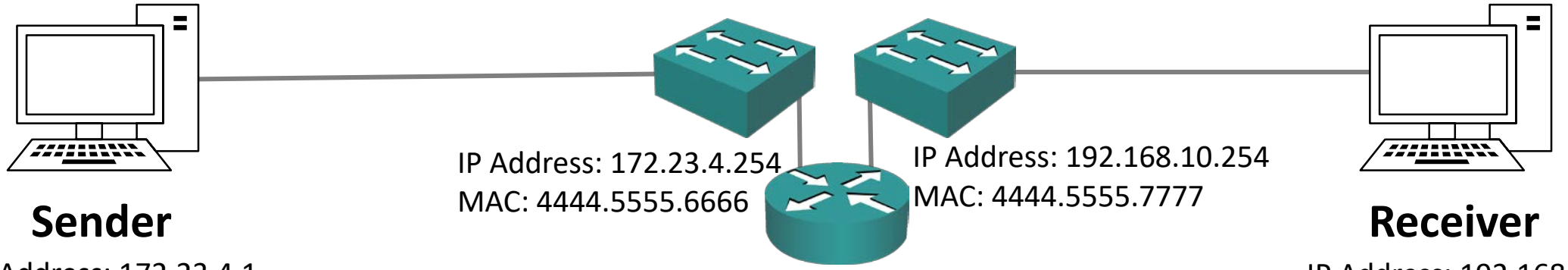
Receiver

IP Address: 192.168.10.1
Subnet Mask: 255.255.255.0
DG: 192.168.10.254
MAC: 2222.3333.4444

ARP Request for 192.168.10.1
Src MAC: 4444.5555.7777
Dst MAC: FFFF.FFFF.FFFF

ARP Reply
Src MAC: 2222.3333.4444
Dst MAC: 4444.5555.7777

Routing Traffic



Sender

IP Address: 172.23.4.1
Subnet Mask: 255.255.255.0
DG: 172.23.4.254
MAC: 1111.2222.3333

IP Address: 172.23.4.254
MAC: 4444.5555.6666

IP Address: 192.168.10.254
MAC: 4444.5555.7777

ROUTER

Receiver

IP Address: 192.168.10.1
Subnet Mask: 255.255.255.0
DG: 192.168.10.254
MAC: 2222.3333.4444

IP Packet
Src IP: 172.23.4.1
Dst IP: 192.168.10.1
Src MAC: 4444.5555.7777
Dst MAC: 2222.3333.4444

Router ARP Commands

- View ARP cache: `show arp`
- Clear ARP cache: `clear arp-cache`