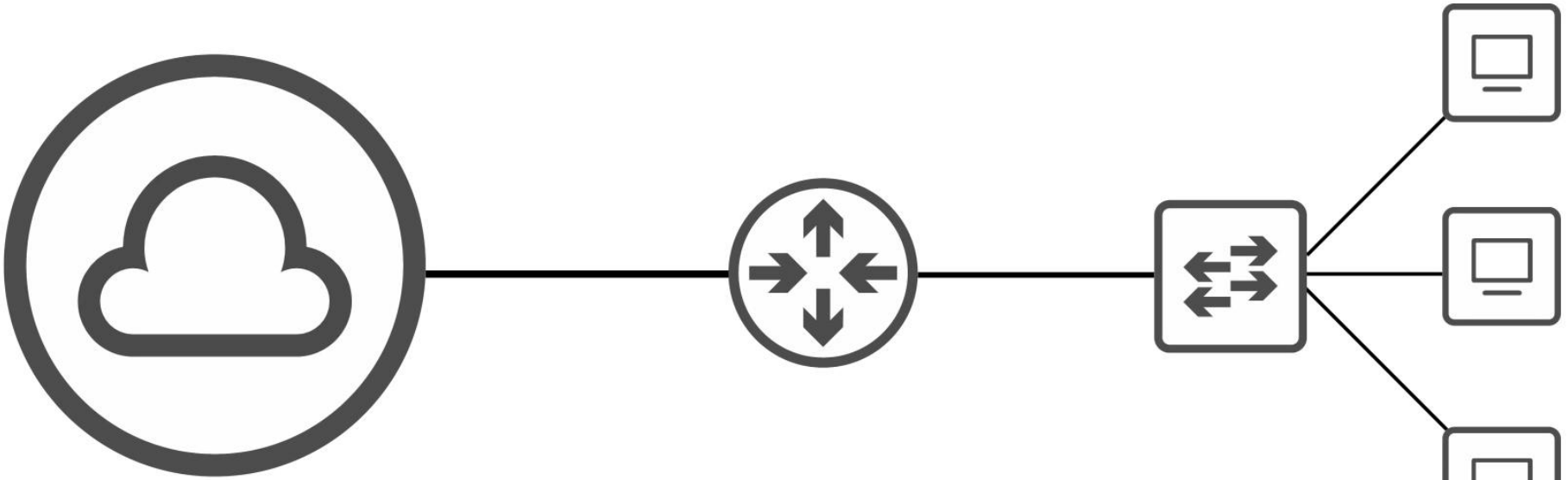
Jeremy's IT Lab

CCNA 200-301 Part 1

Networking Devices



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Who is this course for?

This course is for anyone...

- who wants to pass the CCNA 200-301 exam (from February 24, 2020)
- who wants to learn about computer networking

All you need to get started is a basic familiarity with computers.

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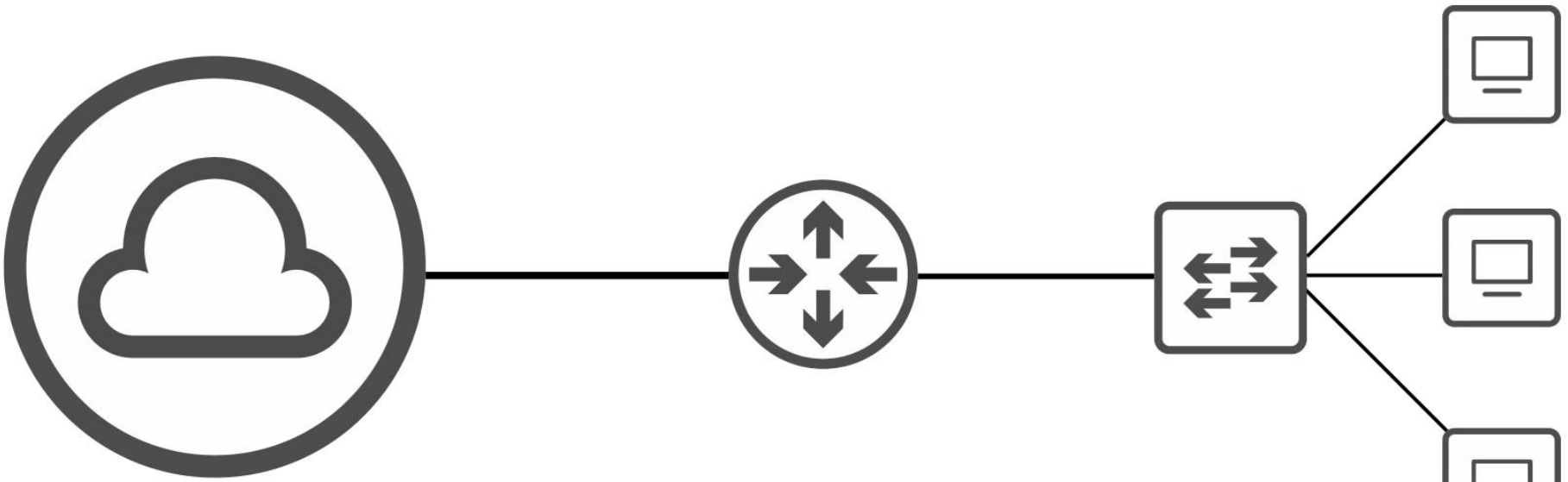
CCNA 200-301 Part 1

Network Devices



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What is a network?

WIKIPEDIA
The Free Encyclopedia

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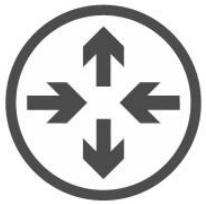
Computer network

From Wikipedia, the free encyclopedia

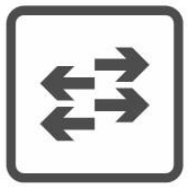
"Datacom" redirects here. For other uses, see Datacom (disambiguation).

A **computer network** is a digital telecommunications network which allows nodes to share resources. In computer networks, computing devices exchange data with each other using connections (data links) between nodes. These data links are established over cable media such as wires or optic cables, or wireless media such as Wi-Fi.

"A computer network is a digital telecommunications network which allows nodes to share resources."



router



switch

firewall

server

client

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What is a network?

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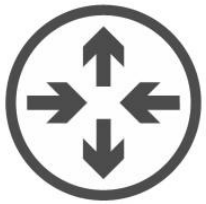

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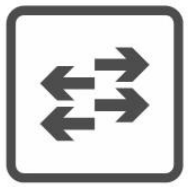

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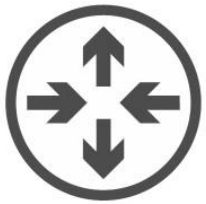
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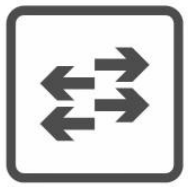
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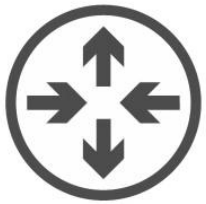

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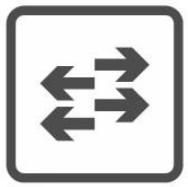

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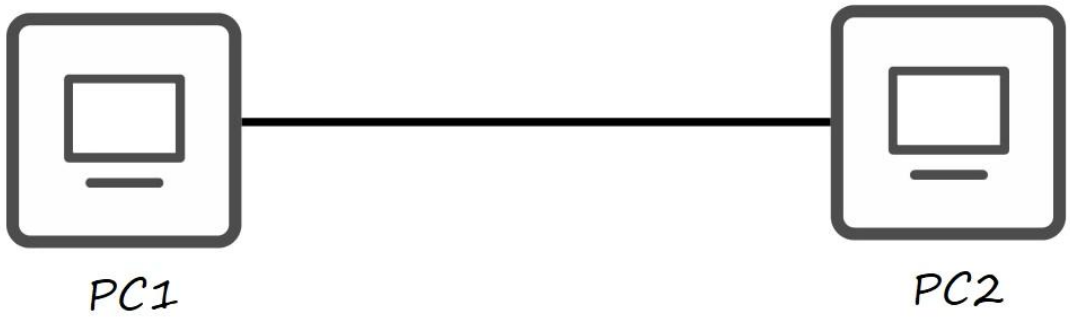
Building a network



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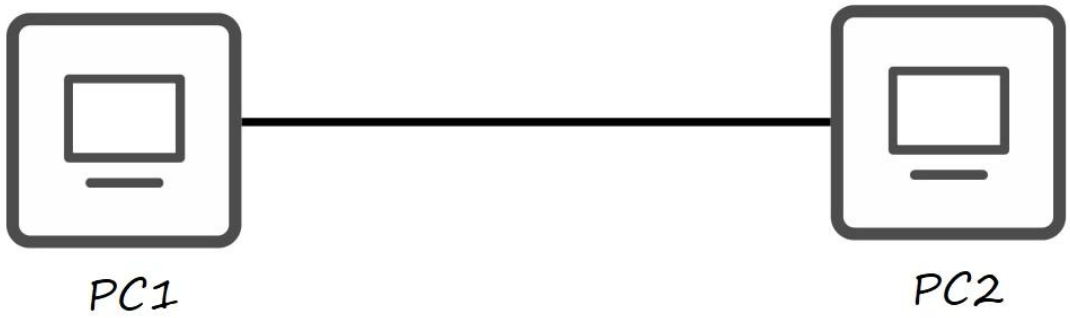

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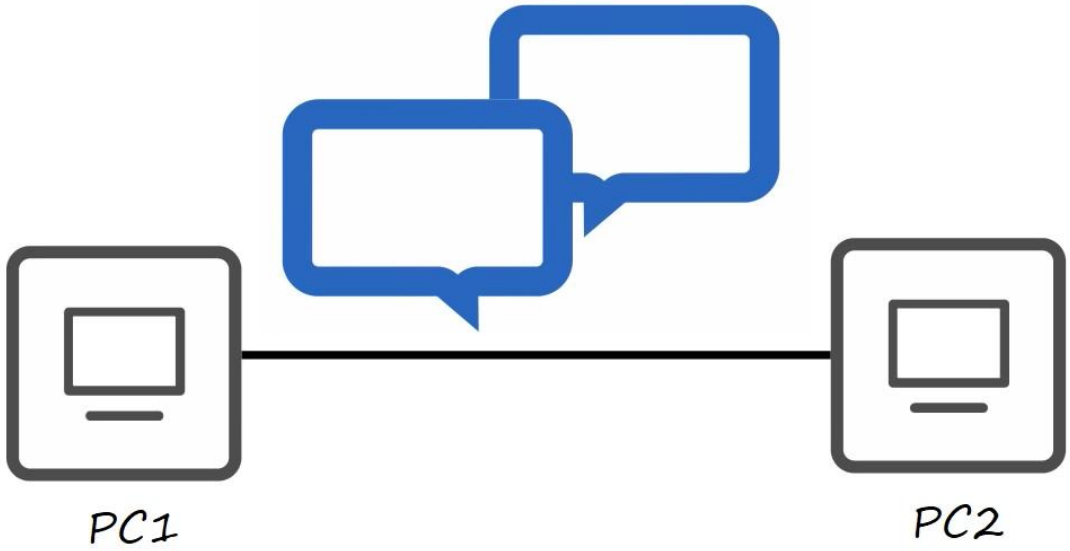
Building a network



"A computer network is a digital telecommunications network which allows nodes to share resources."

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Clients

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Clients

A client is a **device that accesses a service made available by a server.**

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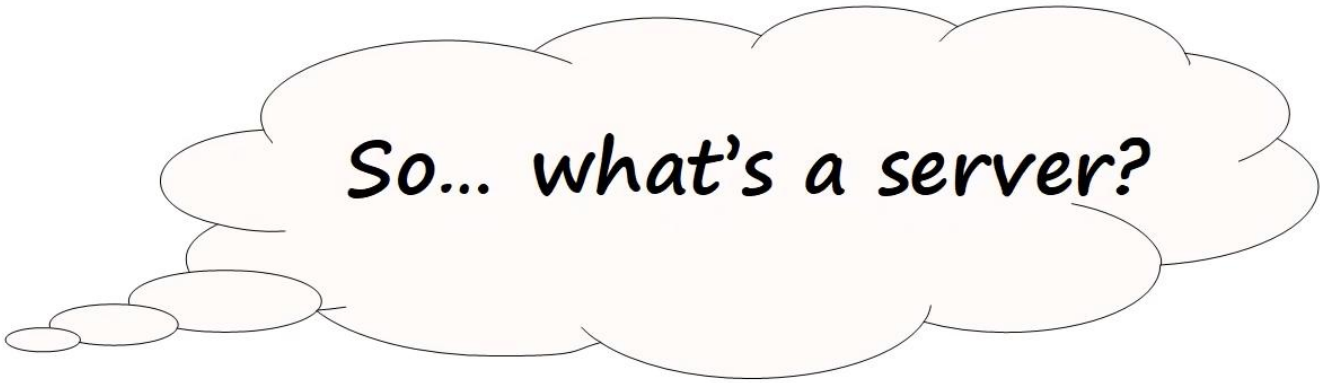

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Servers

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Servers

A client is ...

a device that accesses a service made available by a server.

A server is ...

a device that provides functions or services for clients.

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Servers and Clients

Give me image.jpg, please.

Here you are.

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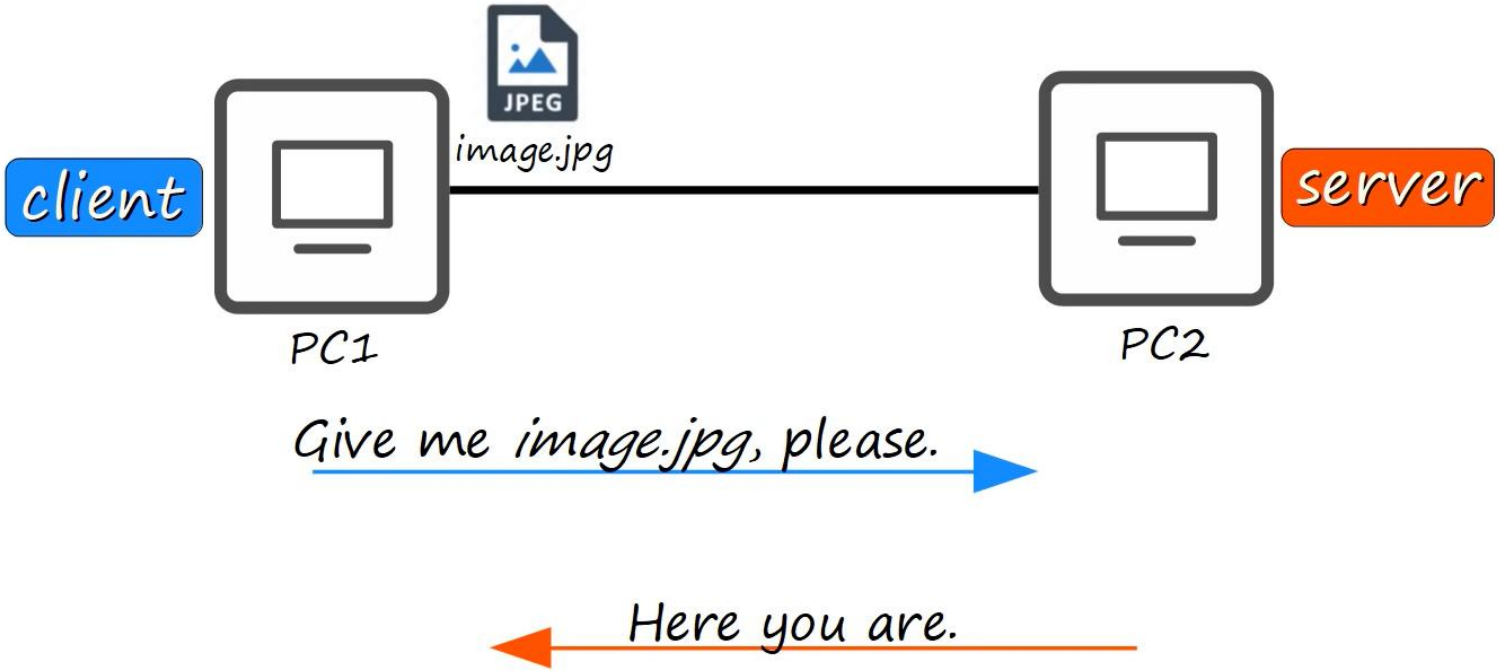
Servers and Clients



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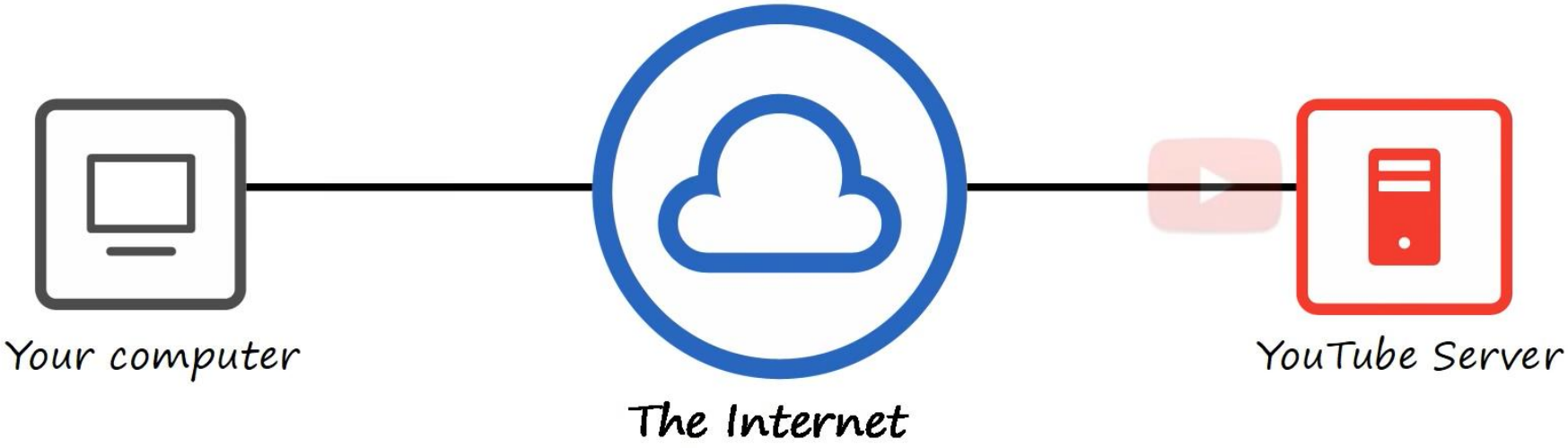

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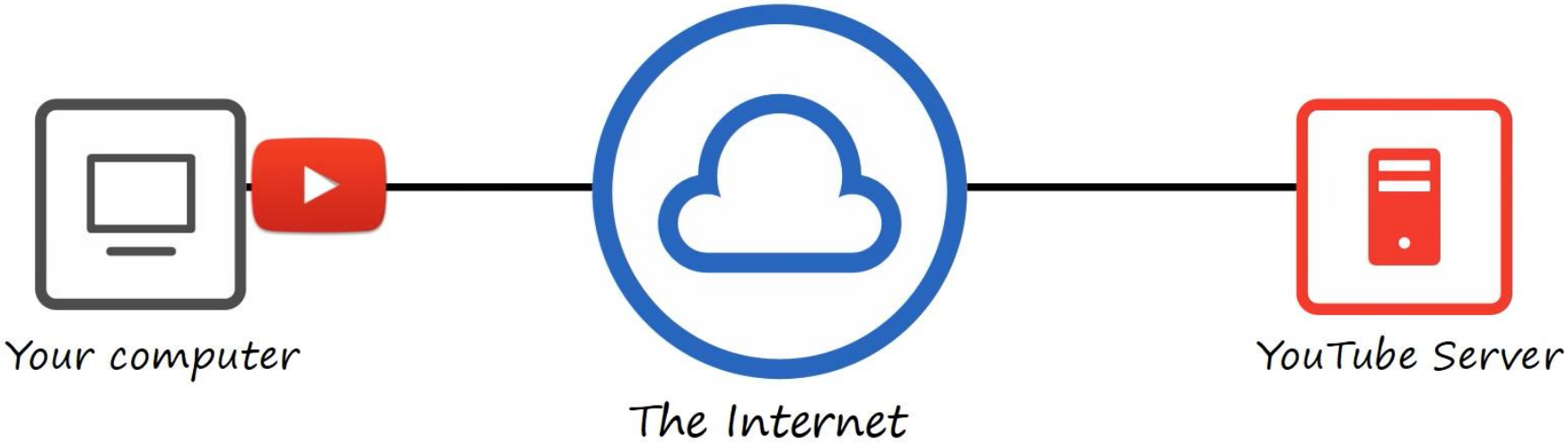

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Servers and Clients

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Servers and Clients

A client is ...

a device that accesses a service made available by a server.

A server is ...

a device that provides functions or services for clients.

The same device can be a client in some situations, and a server in other situations.

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Switches

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Switches

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Switches

LAN (Local Area Network)

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Switches

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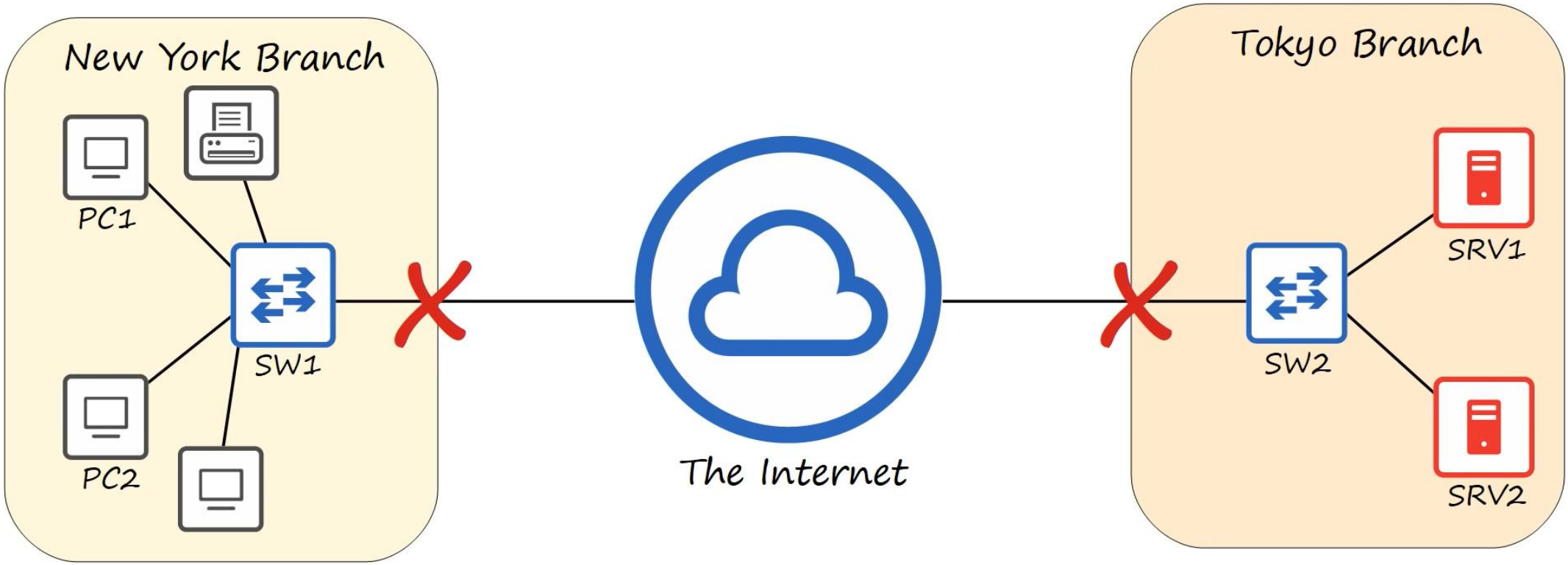
Switches



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Switches

Catalyst 9200

Catalyst 3650

Switches...

- have many network interfaces/ports for end hosts to connect to (usually 24+).
- provide connectivity to hosts within the same LAN (Local Area Network).
- do not provide connectivity between LANs/over the Internet.

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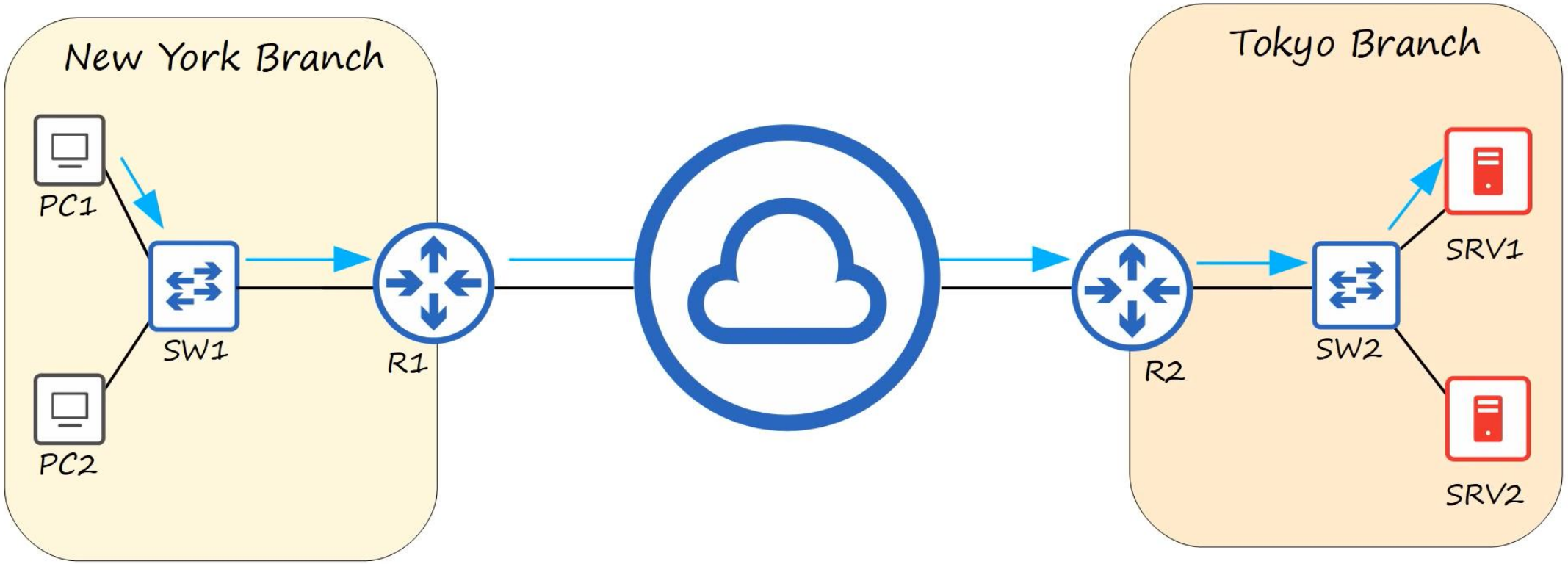
Routers



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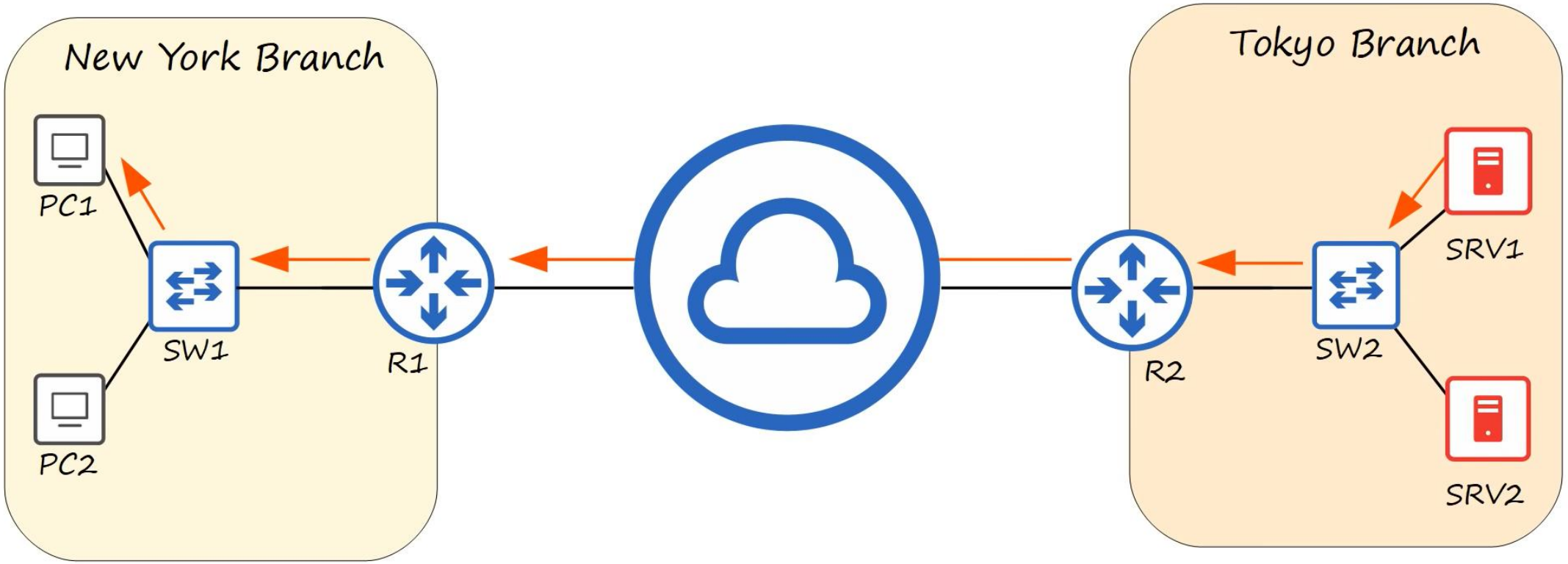
Routers



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Routers

ISR 1000

ISR 900

ISR 4000

Routers..

- have fewer network interfaces than switches.
- are used to provide connectivity **between** LANs.
- are therefore used to send data over the Internet.

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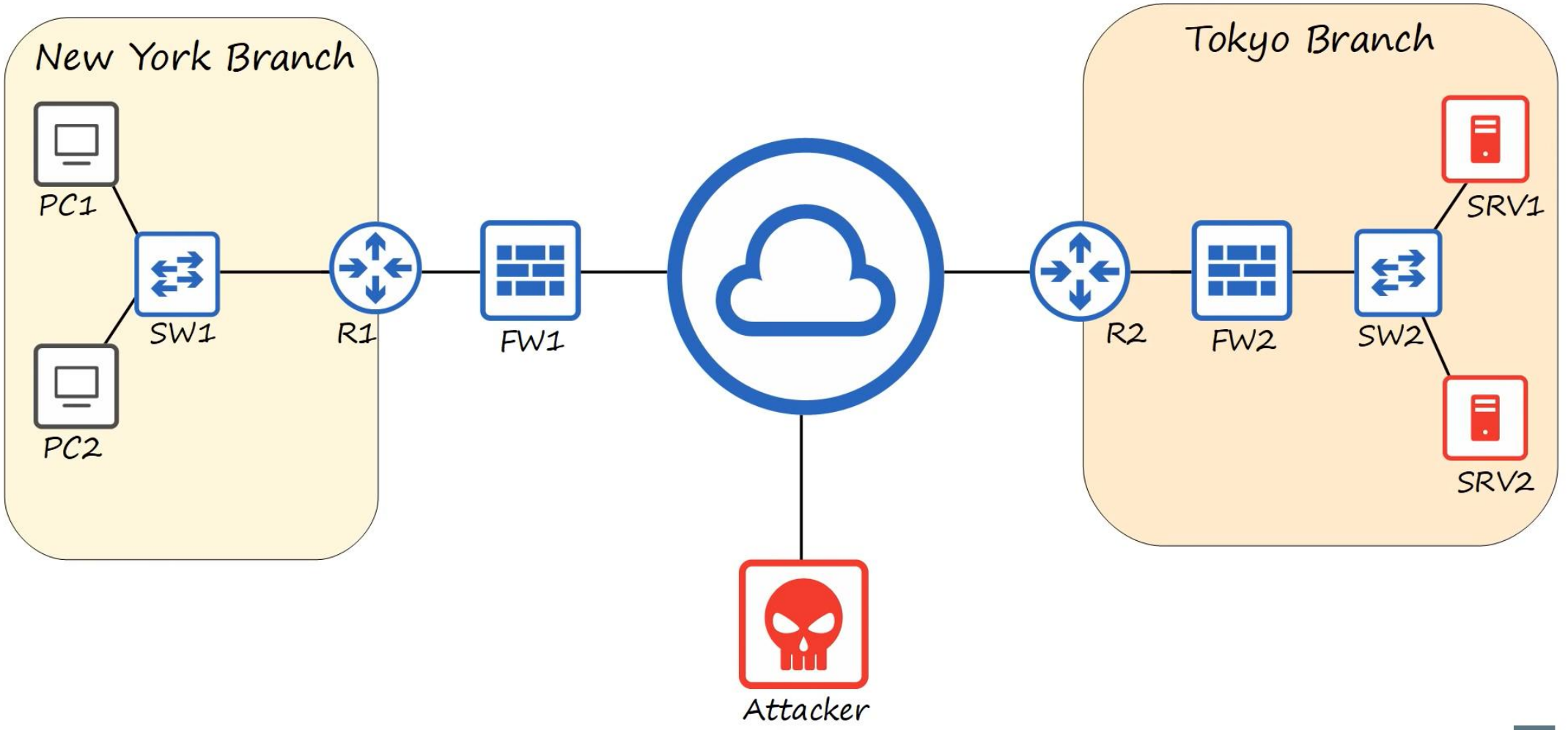
Firewalls



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Firewalls

ASA5500-X

Firepower 2100

Firewalls...

- monitor and control network traffic based on configured rules.
- can be placed 'inside' the network, or 'outside the network.'
- are known as 'Next-Generation Firewalls' when they include more modern and advanced filtering capabilities.

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Firewalls

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Firewalls...

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...What about the firewall on your computer?

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Firewalls

Network firewalls...

are hardware devices that filter traffic between networks.

Host-based firewalls...

are software applications that filter traffic entering and exiting a host machine, like a PC.

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Quiz Question 1

Your company wants to purchase some network hardware to which they can plug the 30 PCs in your department. Which type of network device is appropriate?

a) A router

b) A firewall

c) A switch

d) A server

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Quiz Question 2

You received a video file from your friend's Apple iPhone using AirDrop. What was his iPhone functioning as in that transaction?

a) A server

b) A client

c) A local area network

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Quiz Question 3

What is your computer or smartphone functioning as while you watch this video?

a) A server

b) An end host

c) A client

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Quiz Question 4

Your company wants to purchase some network hardware to connect its separate networks together. What kind of network device is appropriate?

a) A firewall

b) A host

c) A LAN

d) A router

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Quiz Question 5

Your company wants to upgrade its old network firewall that has been in use for several years to one that provides more advanced functions. What kind of firewall should they purchase?

a) A host-based firewall

b) A next-level firewall

c) A next-generation firewall

d) A top-layer firewall