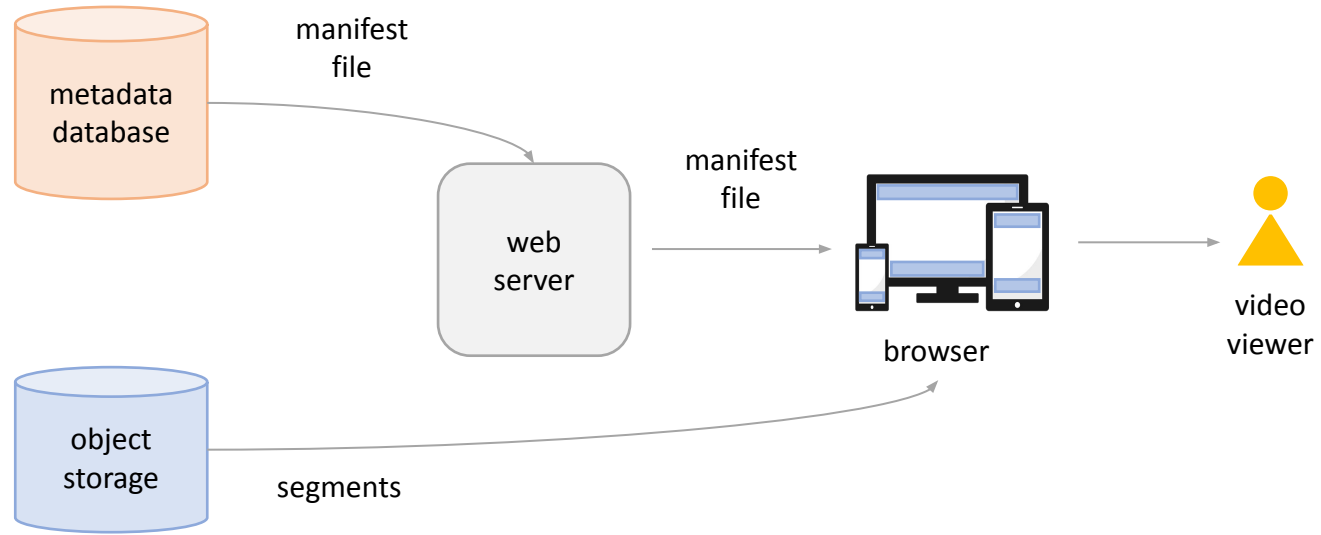# Content delivery network

- **read latency** → bring content closer to viewers
- **read scalability** → replication and caching

➕ ══ CDN

Content delivery network

distributed network of servers placed across the globe
with the purpose of delivering web content to users as fast as possible
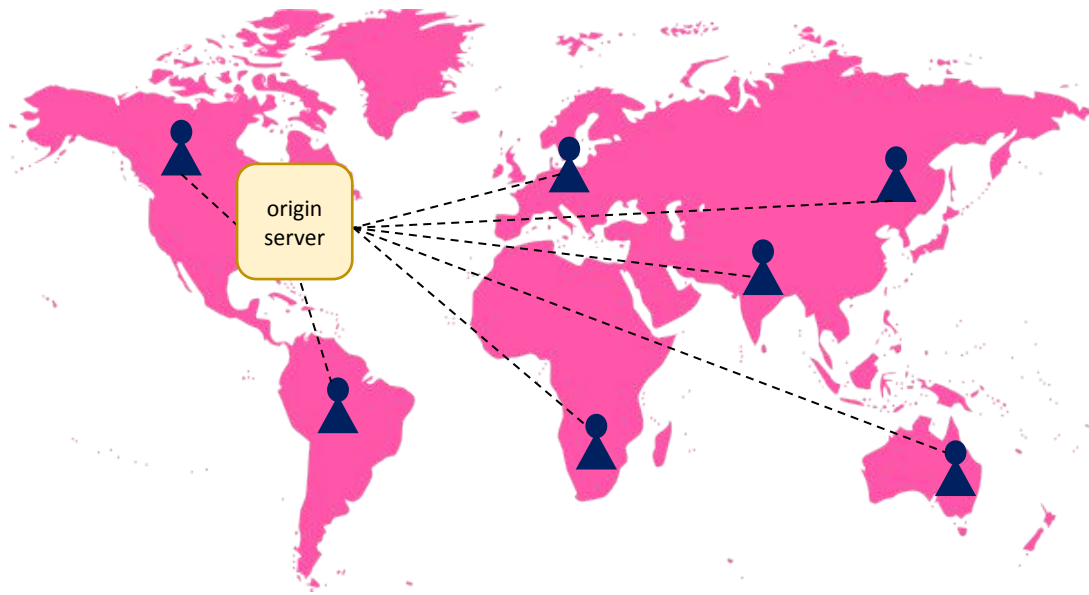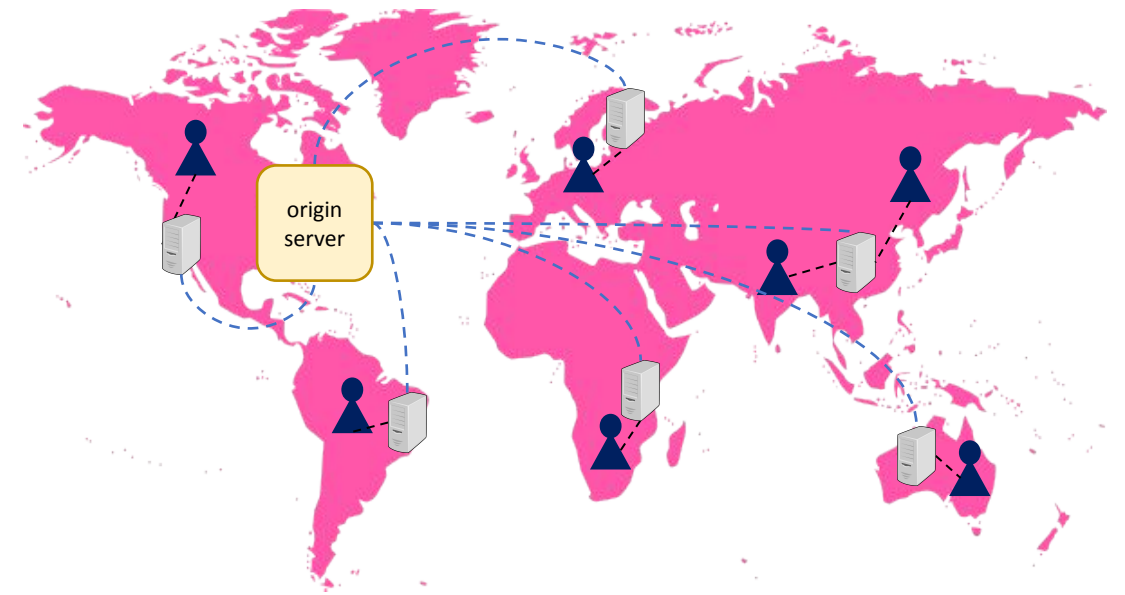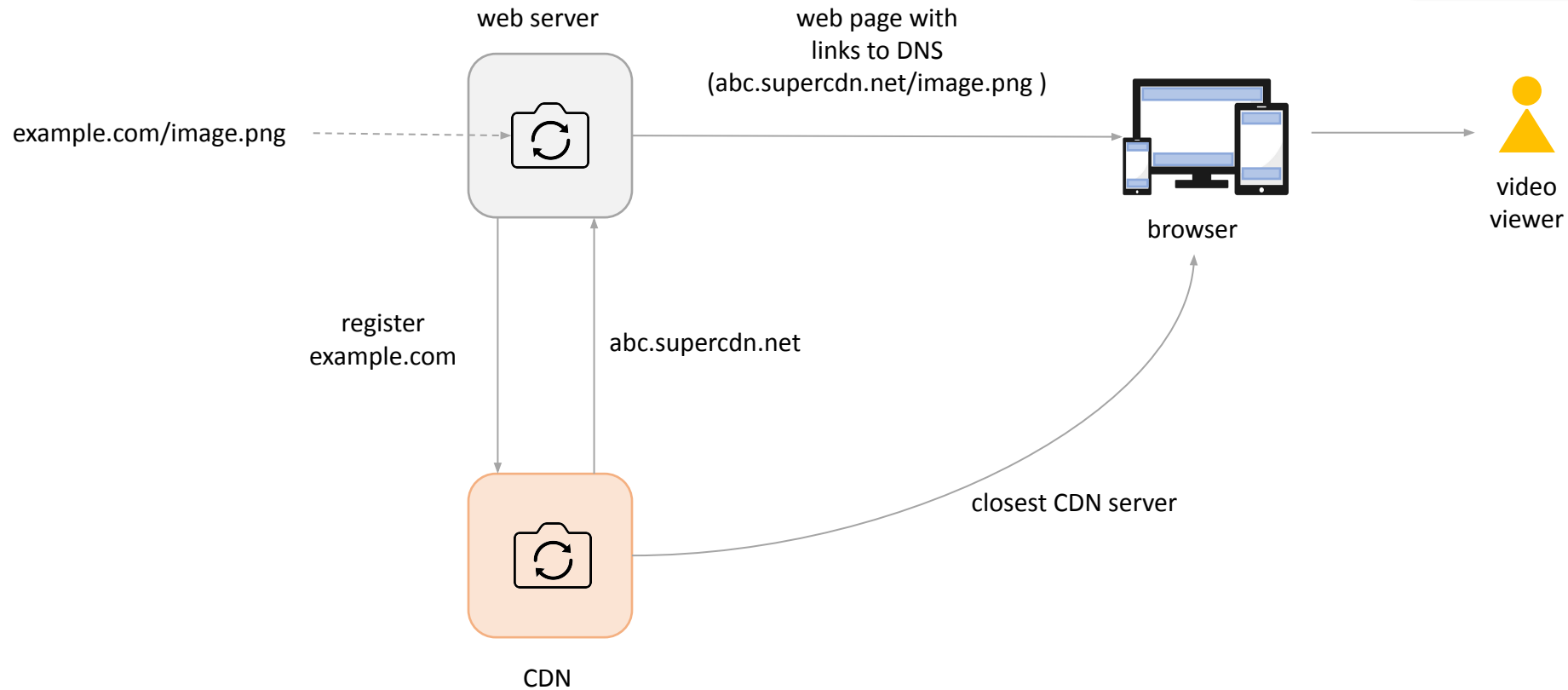
without CDN

with CDN

CDN server

content replication

Content delivery network

how to use it

HTTP headers help control TTL (time-to-live) for cached content

web server

web page with links to DNS (abc.supercdn.net/image.png)

example.com/image.png

browser

video viewer

register example.com

abc.supercdn.net

closest CDN server
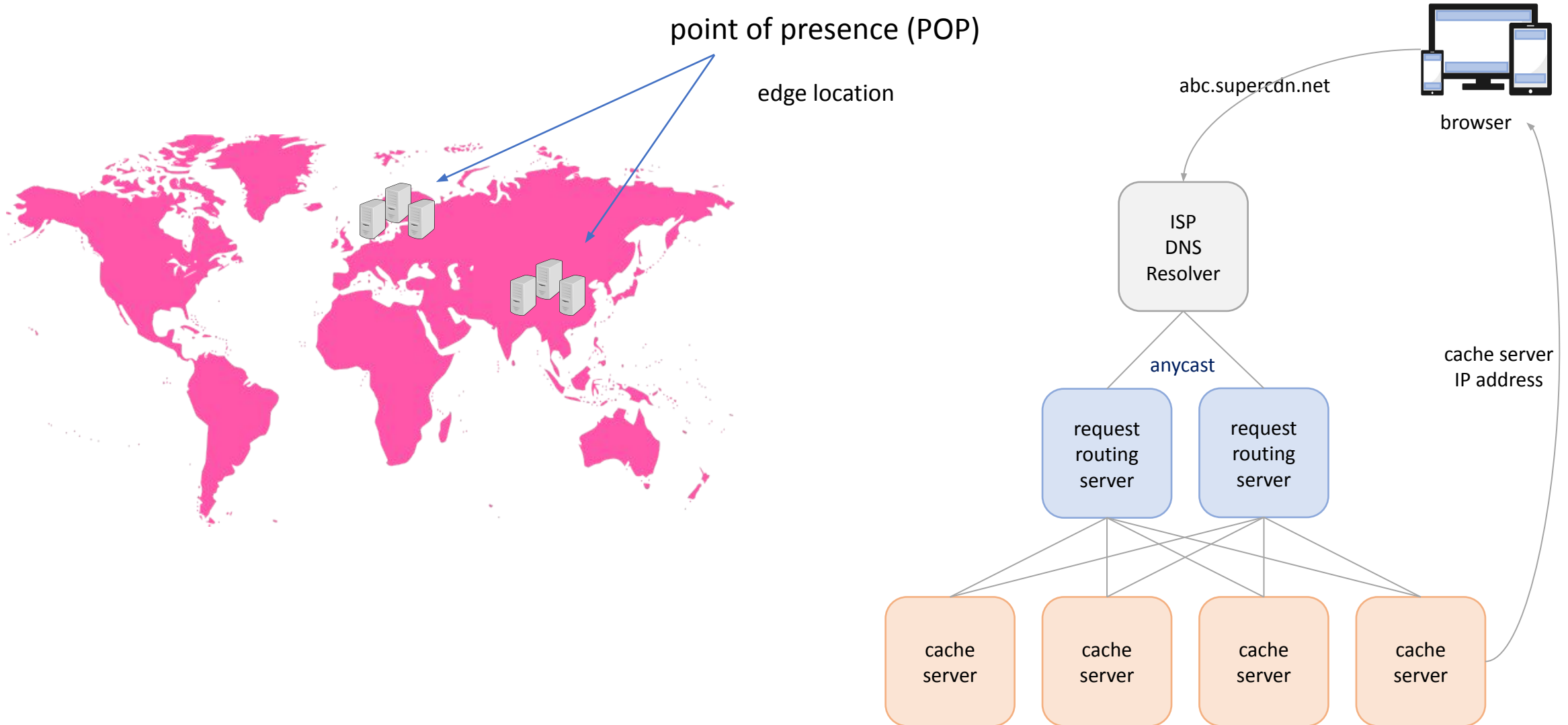
CDN

pull CDN

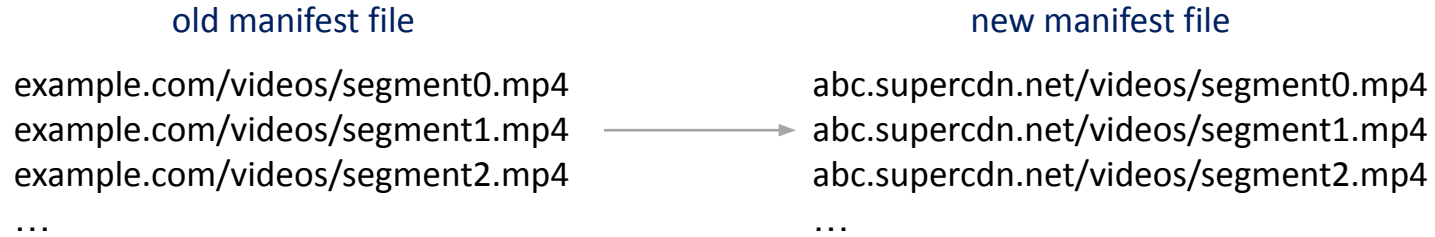CDN servers pull data from the original server when requested

push CDN

content is pushed to CDN servers every time it is published to the original server

Content delivery network

how it works

point of presence (POP)

edge location

abc.supercdn.net

browser

ISP
DNS
Resolver

anycast

request
routing
server

request
routing
server

cache server
IP address

cache
server

cache
server

cache
server

cache
server

Content delivery network

old manifest file

example.com/videos/segment0.mp4
example.com/videos/segment1.mp4
example.com/videos/segment2.mp4
…

new manifest file

abc.supercdn.net/videos/segment0.mp4
abc.supercdn.net/videos/segment1.mp4
abc.supercdn.net/videos/segment2.mp4
…

benefits

- performance (lower latency due to decreased distance)

- scalability (due to horizontally scalable POPs)

- reliability (due to data redundancy, failover to a different server or POP, load balancing)

- resilience against DDoS attack (due to anycast, load balancing)