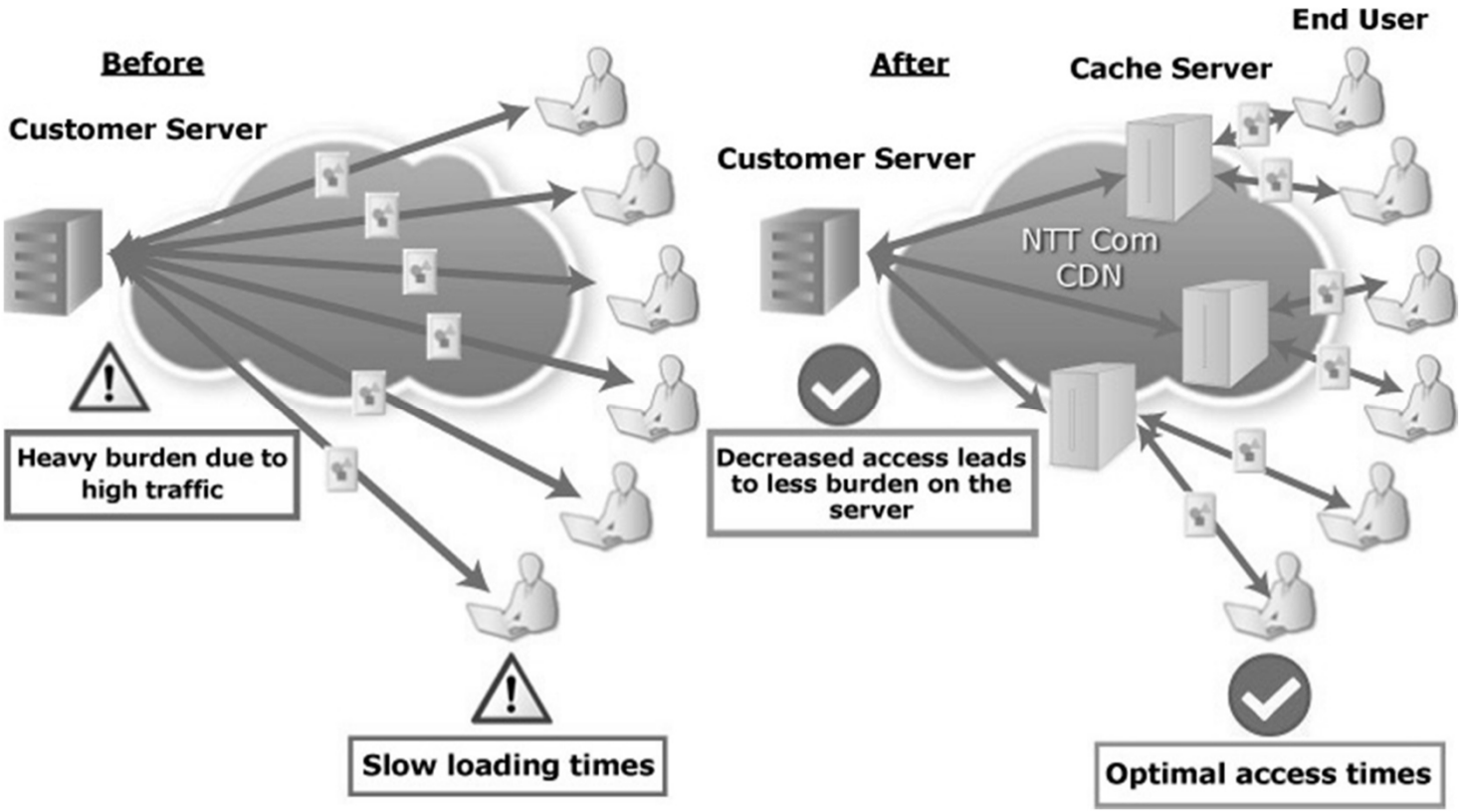
Content Delivery Networks: Fundamentals

What are Content Delivery Networks?



What are Content Delivery Networks?

Architectures (nodes, interfaces) + Algorithms for content life cycle management

Content distribution

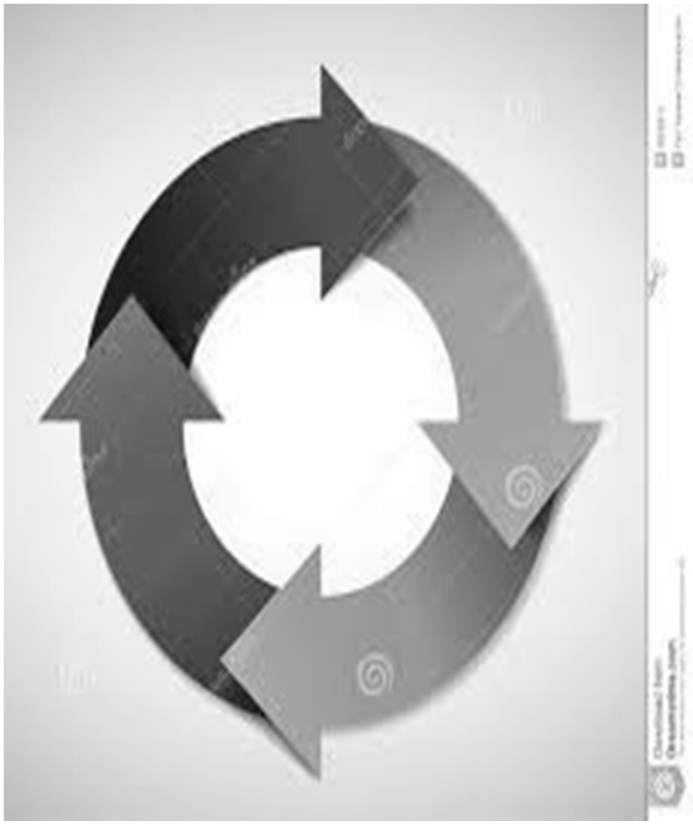
-Send content from their original sources to the caches

Request routing

-Route end-user request for content to content locations

Content acquisition/consumption

- Send content to end-user devices



What are Content Delivery Networks?

Architectures (nodes, interfaces) + Algorithms

Ultimate goal: Make trade offs between

End – User QoS / QoE, e.g

- Latency
- Video resolution

Cost, e.g.

- Cost for storing content in caches
- Network cost for content distribution / acquisition

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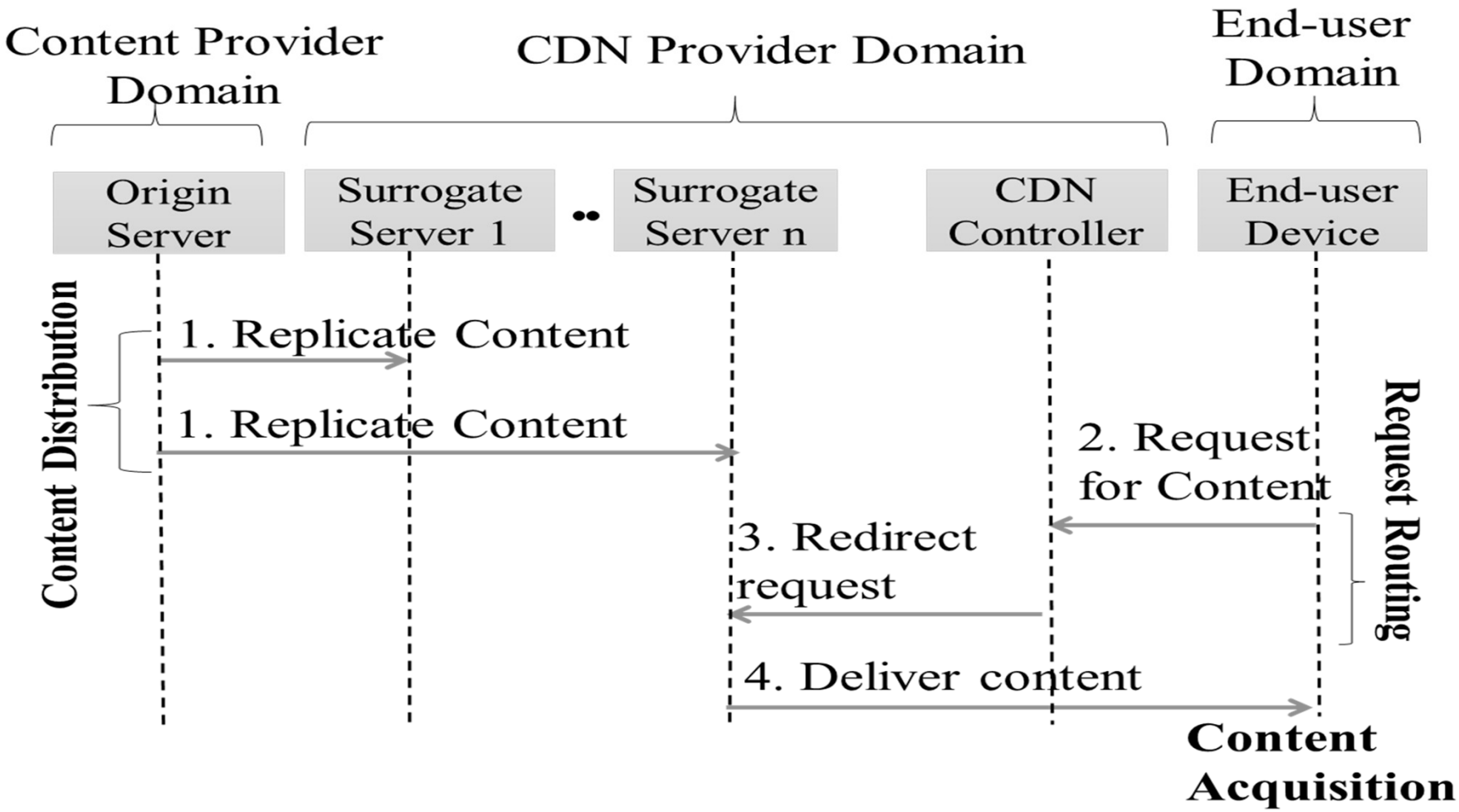
Traditional Content Delivery



Traditional Content Delivery Networks (Distinctive characteristics)

Traditional Web Technologies, e.g.

- Static resource allocation

Cloud Based - CDNs

What could Cloud CDN bring?

CDN goal: Trade offs between end-user QoS/QoE and cost

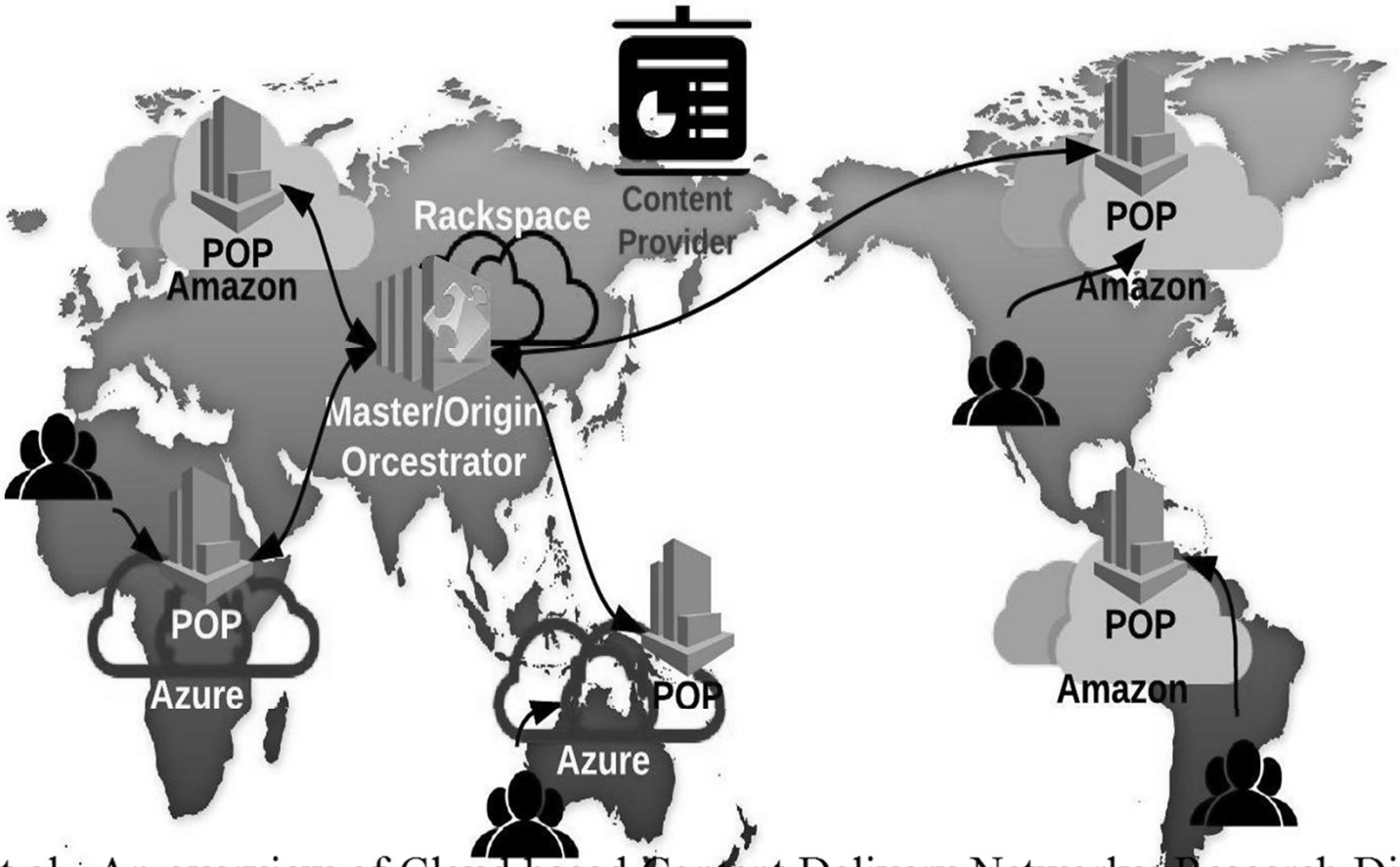
End-user QoS / QoE

- More flexibility in responding to end-user fluctuating demands
- Rapid provisioning of new value added services

Cost:

- Dynamic resource provisioning
- Pay per use

What could Cloud CDN bring?



[1] M. Wang et al., An overview of Cloud based Content Delivery Networks: Research Dimensions and state-of-the-art," Transactions on Large-Scale Data-and Knowledge-Centered Systems, pp. 131-158, 2015.

Cloud CDN
(A few emerging commercial products)

The End