

### Enhancing Resources Placement in a Multi-CDN Context

Ghida Ibrahim

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# Enhancing Resources Placement in a Multi-CDN Context

## Ghida Ibrahim

**Context:** Some popular contents like Videos are very demanding in terms of amount and type of required resources (hardware/ Software/ Network resources) but also in terms of these resources placement in the network.

CDNs present many differences in terms of footprint, QoS and available hardware and software capacities.

A CDN performance is not stable, it is subject to traffic and demand fluctuations over time.

## What to optimize ?

- Optimizing the **initial selection of CDNs** involved in a CDN federation

→ Ensure a more granular matching between
 CDNs capacities and service requirements
 → Go beyond the "geographic footprint" criteria

- Optimizing the Redirection Process

→ Perform dynamic measurements of peering/

No CDN is the "Best" Content Distribution should move from a single CDN/ CP domain to an open CDN infrastructure

**Existing Solutions For CDN Interconnection** 

CDNI – ALTO working groups Proposal: Footprint based



transit traffic and CDN performance

→ Use these measurements as inputs for making the Redirection decision

## How it works ? Framework overview



CDN Broker (Selecter) proprietary solutions (e.g. Cedexis): Footprint and Reputation based



## **Conclusions:**

Our framework is expected to enhance existing approaches in terms of counting on granular information gathered from different sources (many CDNs) prior to establishing a CDN federation.
It adds dynamicity to the requests redirection process and

enables updating the established SLAs based on the evolution of CDNs performance and network state.

### • Future work

Applying the framework to specific use cases Introducing subsequent algorithms Moving towards the "Open CDN" Infrastructure



