Enhancing Resources Placement in a Multi-CDN Context
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**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.

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

**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/ transit traffic and CDN performance
  → Use these measurements as inputs for making the Redirection decision

**How it works ? Framework overview**

**Existing Solutions For CDN Interconnection**

- **CDNI – ALTO working groups** Proposal: Footprint based
  - dCDN1
    - ALTO Server
  - dCDN2
    - ALTO Server
  - dCDN3
    - ALTO Server
  - uCDN
    - ALTO Client
  - CP

- **CDN Broker (Selector) proprietary solutions (e.g. Cedexis):** Footprint and Reputation based
  - CDN Broker (Selector)
  - CDN1
  - CDN2
  - CDN3
  - CP

**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