

CDNI WG

draft-xiaoyan-cdni-requestrouting-01

IETF81 - Quebec

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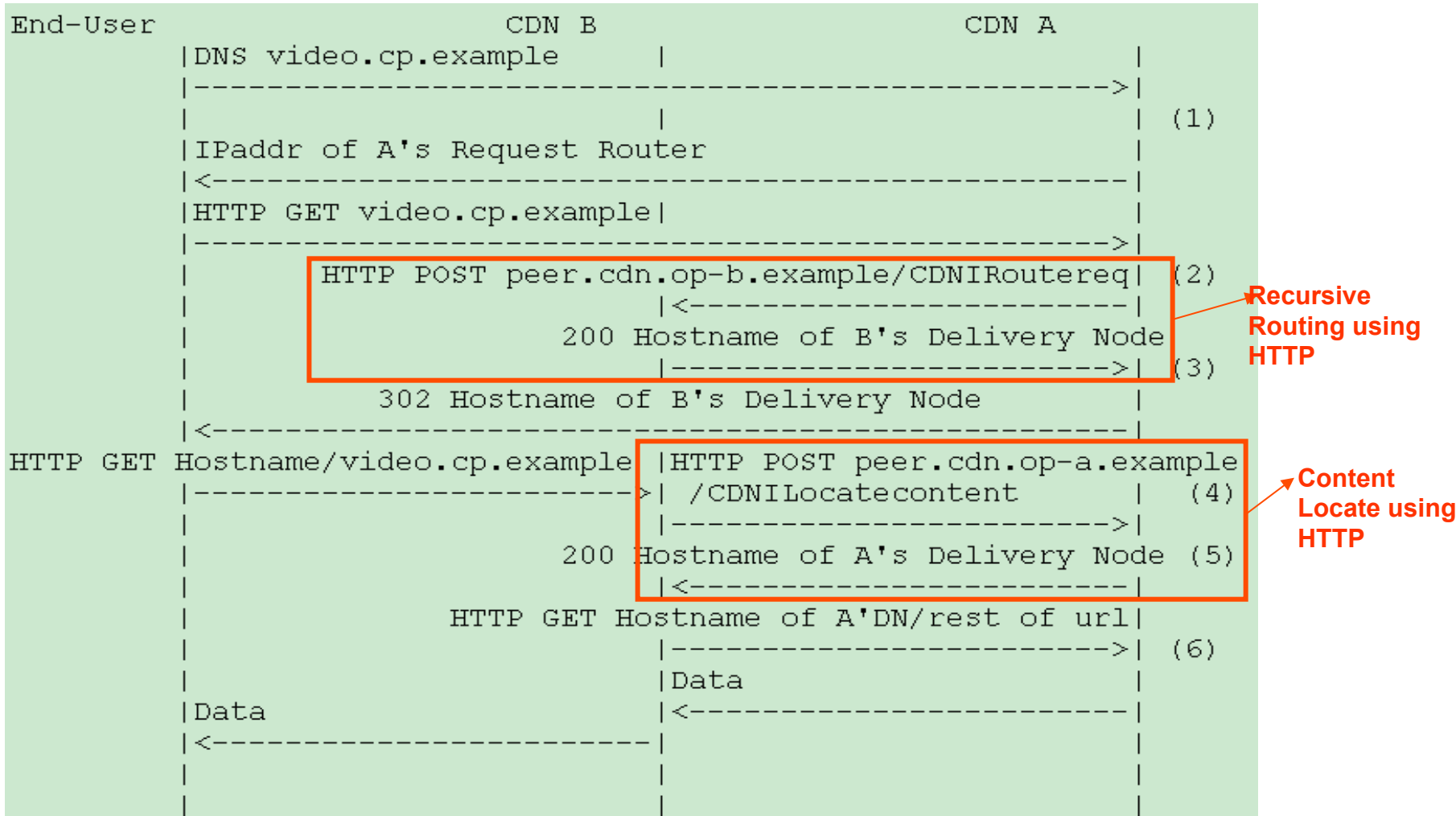
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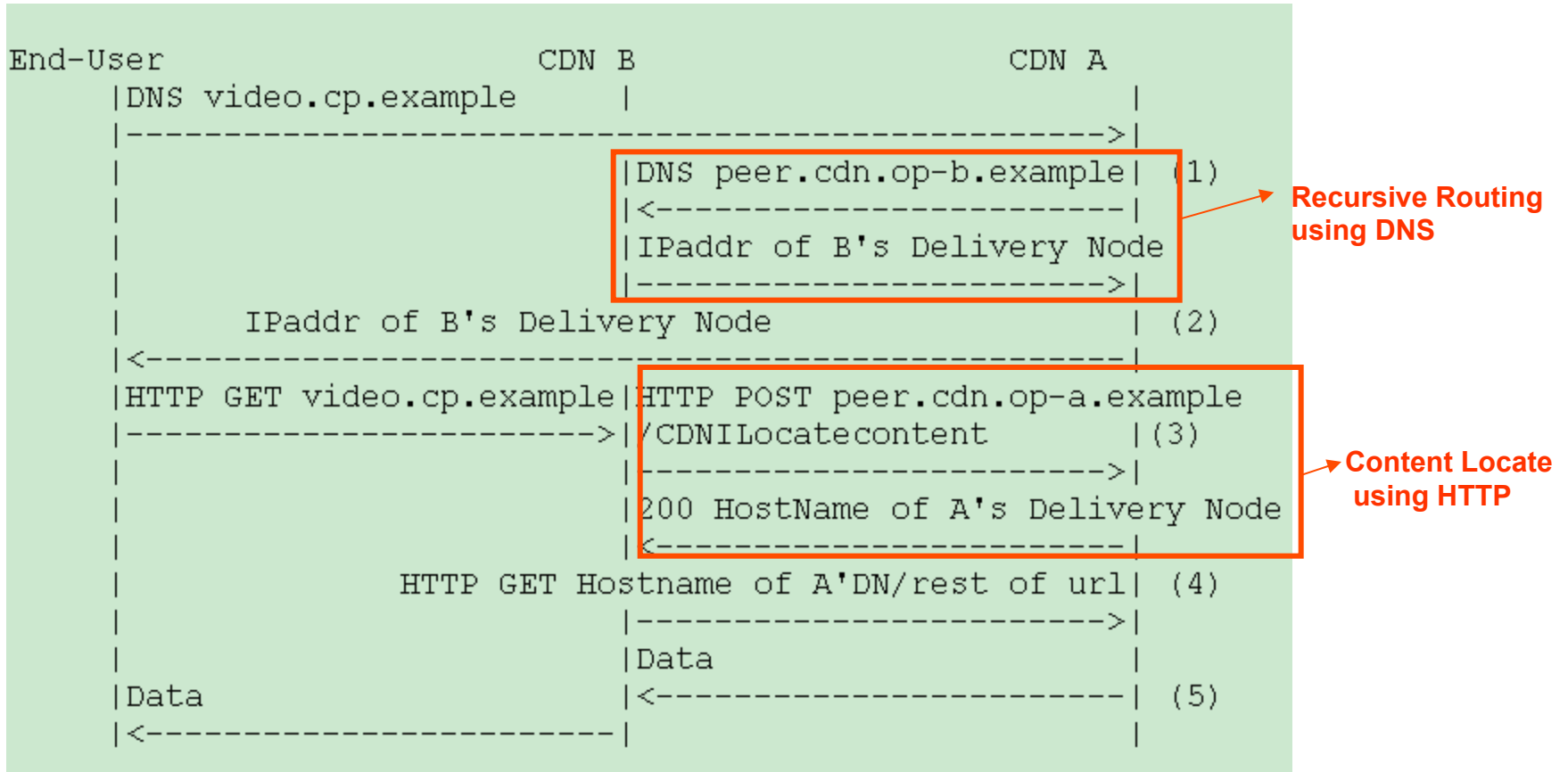
Draft Overview

- This document discusses **recursive request routing** for CDN interconnection, and describes a **content locate procedure** across CDNs using the HTTP protocol when cache miss occurs along with the mentioned recursive request routing procedures.
- This document outlines **two procedures** for CDNI recursive request routing, i.e. utilizing **HTTP** and **DNS** protocol between the two interconnected CDNs in RRI respectively.

Recursive Request Routing utilizing HTTP Protocol



Recursive Request Routing utilizing DNS Protocol



Protocol Options

- From the definition, Recursive Request routing means an Upstream CDN needs to communicate with the Downstream CDN via RRI to find out how the Downstream CDN wants the request to be redirected.
- To determine the Protocols utilized across the Request Routing Interface between the two connected CDNs, the relevant requirements include:
 - R1 “Wherever possible, the CDNI protocols **SHOULD reuse** or leverage **existing IETF protocols.**”
 - R31 “The CDNI Request-Routing architecture and protocol **MUST** support efficient request-routing for small objects. This may, for example, call for a mode of operation (e.g. **DNS-based request routing**) where freshness and accuracy of CDN/Surrogate selection can be traded-off against reduced request-routing load.”
 - R32 “The CDNI Request-Routing architecture and protocol **MUST** support efficient request-routing for large objects. This may, for example, call for a mode of operation (e.g. **HTTP-based request routing**) where freshness and accuracy of CDN/Surrogate selection justifies a per-request decision and a per-request CDNI Request-Routing protocol call.”
- **Conclusions: HTTP and DNS are two valid protocol options for RRI to support recursive request routing.**

Domain Names and Command Codes

- **Domain Names**

- “video.cp.example” represents the specific sub domain of the CP to be accelerated by the contracted CDN
- “cdn.op-x.example” represents the operator X using this domain name providing CDN service. Especially this CDN-domain augmented with a prefix "peer" i.e. “peer.cdn.op-x.example” is used to identify the request received by a CDN is from a peer CDN rather than from end users.

- **Command Codes**

- In case of HTTP signaling used in the RRI of connected CDNs, operation code "CDNIRoutereq" and "CDNIContentlocate" contained in the URL of HTTP requests is used to identify the operation type in the present document.

Information exchange requirements

Interconnection CDNs must exchange the following information to peer with each other in this I-D:

- o The IP address of the entry point of the CDN or distinguished CDN domain name; and
- o Set of IP prefixes for which the CDN is prepared to deliver to end-users.
- o Set of CP domain names for which the CDN is served.

Conclusions

- This I-D illustrates one of the two main routing mechanisms required in the CDNI requirement document draft-lefaucheur-cdni-requirements-02 for Request Routing Interface with HTTP and DNS protocols adopted.
- We are close to the approach taken in draft-davie-cdni-framework-00 for HTTP Recursive Request Routing (no strong disagreement).
- We also describe a DNS Recursive Request Routing case in this I-D.

Next Steps

- Next steps:
 - Continue to compare with draft-davie-cdni-framework-00 for HTTP recursive request routing case
 - Continue to discuss DNS recursive request routing case
 - Work on solution draft for recursive request routing