RADIUS Extensions for Network-Assisted Multipath TCP (MPTCP)

draft-boucadair-mptcp-radius-01
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Deployment Context: A Brief Reminder

- Operators introduce new access technologies to boost the connectivity experience perceived by customers

- This model may not be optimal in some areas for various reasons:
  - Poor ROI
  - Decommissioning of some network nodes
  - Need to maximize the utilization of available accesses

- Alternate means to offer bonding services are required: *MPTCP (Multipath TCP, RFC6824)*

Network-Assisted MPTCP: Rationale

- Given
  - The MPTCP penetration rate is close to null at the server side, and
  - Network Providers do not control customers' terminals
- A network-assisted model is attractive to offer bonding services
  - The CPE needs to support MPTCP features
  - MPTCP Concentrators are deployed in the network to facilitate the establishment of MPTCP connections

Access Network #1

Access Network #2

H1

IP@s

CPE

IPcpe@1

IPcpe@2

Concentrator

IP@ccf

IP@cif

D

IP@d
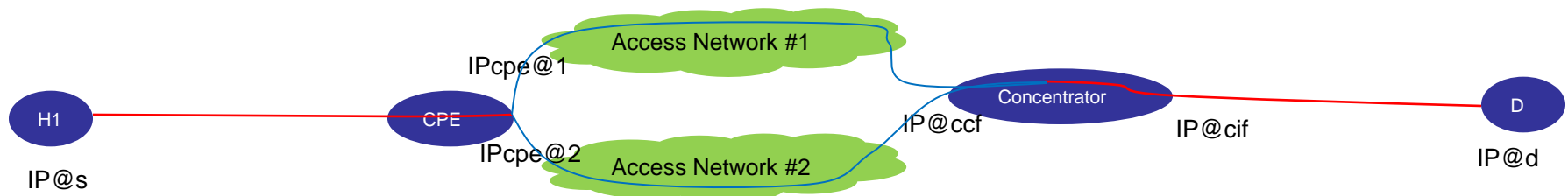
This Document

- One or multiple MPTCP Concentrators may be deployed in the network
  - Assumption: All access networks are managed by the same Network Provider

- The MPTCP concentrator(s) reachability information can be stored in Authentication, Authorization, and Accounting (AAA) servers

- *This document specifies RADIUS extensions to provision a list of MPTCP Concentrators*

Proposed Approach

- Follow RADEXT **guidelines** for defining a new data type
  - I-D.ietf-radext-datatypes
- To accommodate both IPv4 and IPv6 deployments, **two attributes** are specified: MPTCP-IPv4-Concentrator & MPTCP-IPv6-Concentrator
  - Avoid polymorphic attributes (RFC6158)
  - MPTCP-Concentrator-IPvx attribute contains the IPvx address of an MPTCP Concentrator
- **Multiple** instances of the MPTCP-Concentrator-IPvx attribute may be included; each instance of the attribute carries a distinct IP address
- **Both** MPTCP-Concentrator-IPv4 and MPTCP-Concentrator-IPv6 attributes may be present in a RADIUS message

A Sample Flow
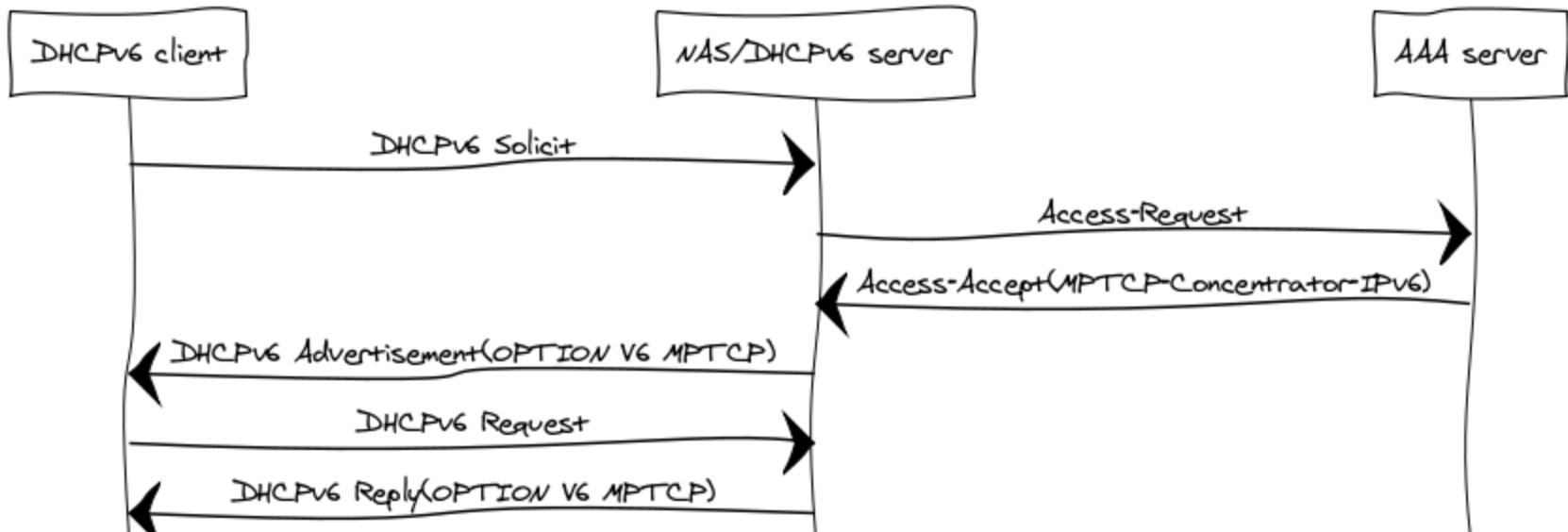
What's Next?

- Many thanks to Alan DeKok for the review
- Further comments are welcome
- How to progress the document?