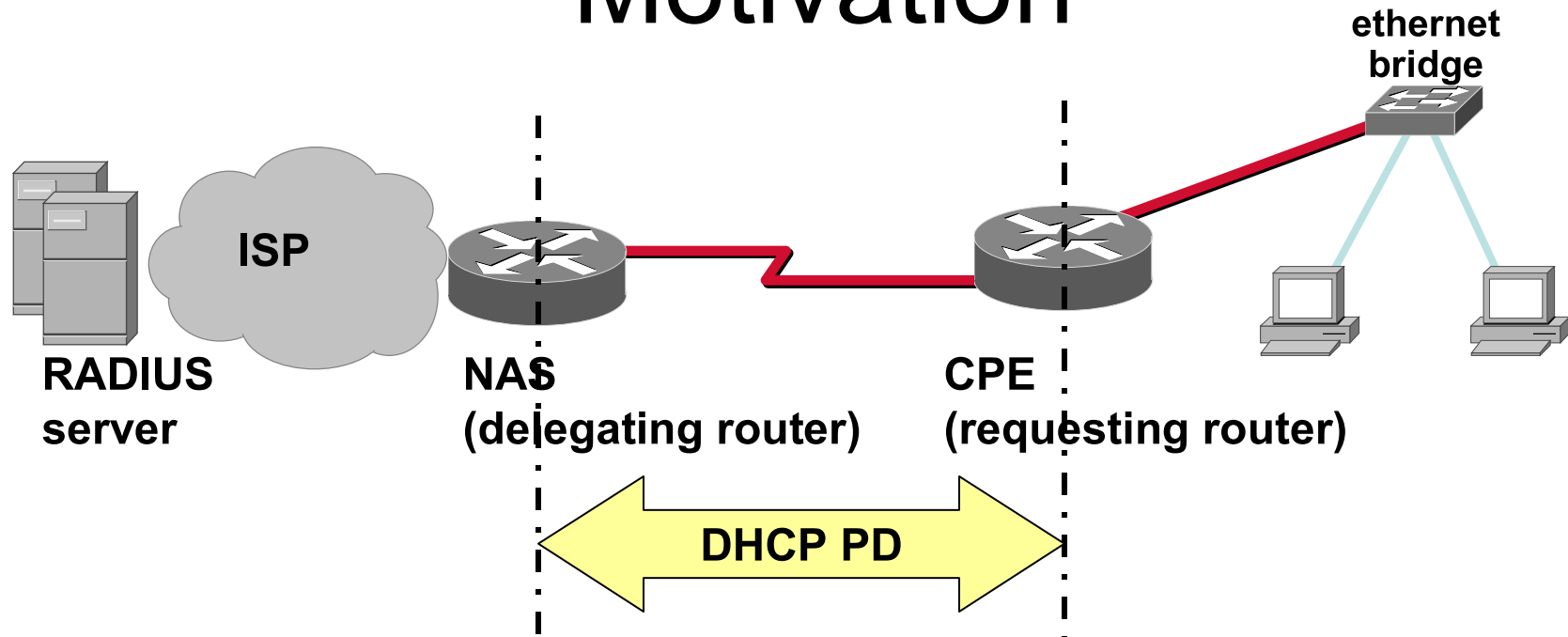# RADIUS Delegated-IPv6-Prefix Attribute

draft-salowey-radext-delegated-prefix-01.txt

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Motivation

ethernet
bridge

ISP

RADIUS
server

NAS
(delegating router)

CPE
(requesting router)

DHCP PD

DHCP prefix delegation (PD) assigns a prefix across the administrative boundary between the service provider and the user.

Delegated prefix (typically /48) is assigned to requesting router; /64s from the delegated prefix are assigned to the LAN links in the customer premises.

Requesting router receives 2001:DB8:3::/48 through prefix delegation; assigns 2001:DB8:3:1::/64 to customer ethernet link.

Selecting prefix to delegate

- Assignment of prefix to customer is left to implementation

- One solution is to associate prefix with user in RADIUS

- RFC 3633 suggests use of Framed-IPv6-Prefix attribute (RFC 3162) to transmit prefix from RADIUS server to NAS/requesting router
    - But, Framed-IPv6-Prefix is intended for assignment to link between NAS and CPE
    - Conflict if admin wants to assign prefix to NAS-CPE link and use PD

Delegated-IPv6-Prefix

- New attribute, related to Framed-IPv6-Prefix, for explicit use in PD

- Format:

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|     Type      |    Length     |    Reserved   | Prefix-Length |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
                               Prefix
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
                               Prefix
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
                               Prefix
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
                               Prefix                           |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```