Requirements for IPv6 prefix delegation

<draft-miyakawa-ipv6-prefix-delegation-requirement-00.txt>

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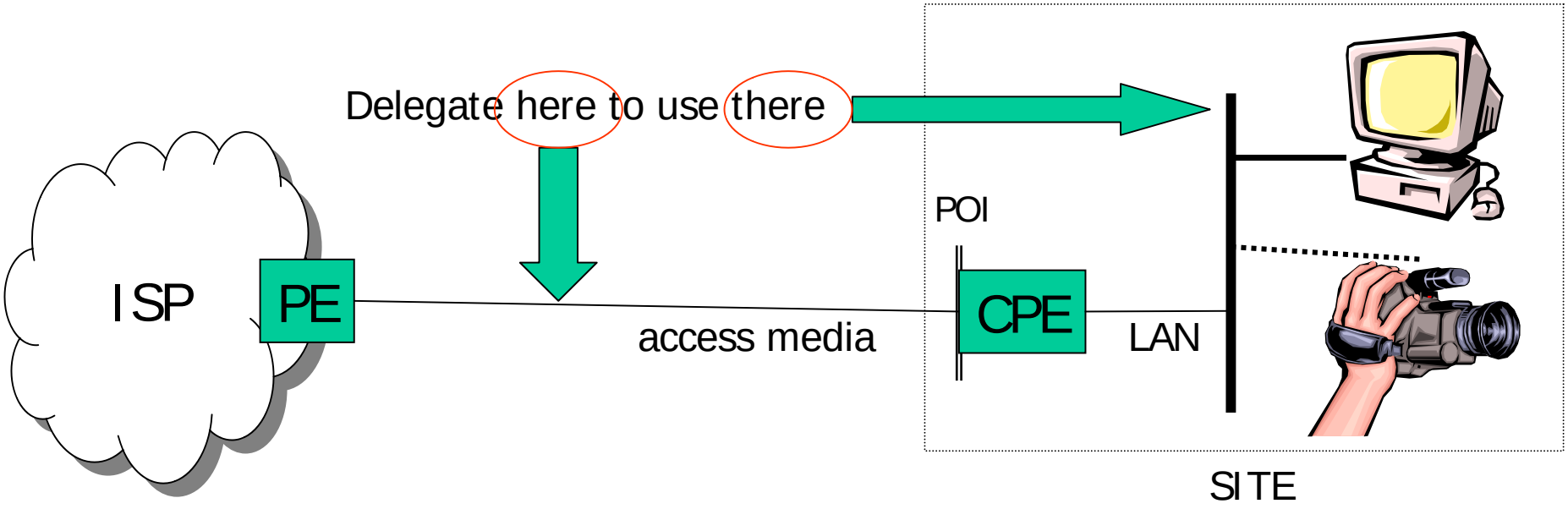
background

- An IPv6 ISP would like to assign one or more address prefix(es) to an user's site over the access line automatically (without any user actions) to implement commercial service like ADSL.



PE: Provider Edge (ex. access concentrating router)
CPE: Customer Premises Equipment (ex. SOHO router)

issues

- Layer 2 considerations
- Accounting
- Kinds of prefixes (Dynamic / Static)
- Negotiation between ISP and site

L2 considerations

- It (means the method of prefix delegation) should be Layer 2 technology independent.
- It should work with or without L2 authentication
  - ISP usually wants to take advantages of L2 authentication. (for example, to choose which prefix should be passed to the user site)
- Should not be limited to single P-P link case
  - But at least for now, it has high and urgent priority

Accounting

- ISP would like to get information such as
  - WHO uses
  - WHAT resources
  - From WHEN to WHEN
  - (and WHERE and HOW some time)
- With proper authentication techniques
- To serve and charge customer correctly
  - Also for abuse tracking
- Thus... It should be able to work with logging function and some enforcement mechanisms which may be statefull in some sense

Dynamic / Static assignment

- ISP must be able to delegate both statically (same prefix every time) and dynamically (may vary over time) assigned prefix(es)
  - By authenticated user identifier
  - By resources available
  - And or any reasons
    - Request from client, for example

Negotiation between ISP and site

- ISP would like to advertise the candidate prefixes to the CPE
- Site should be able to describe its requested prefixes
  - To negotiate
    - Prefix scope (global and/or site)
    - Prefix length (/48, /64 or any)
  - Also zero-configuration-ed site should be able to say ‚give me anything usable‘ to ISP

- Why multiple prefixes? (from a question on ML)
  - Why not ?
    - Multiple site prefixes for multiple networks behind CPE
    - Useful for address block transition

At the end of these slides…

- We (IPv6 community) should have one single standardized method of prefix delegation method between ISP and site to reduce the cost of equipment and service which reflect end customers' fee.
- And… We need the solution NOW
- Please co-operate together to boost real IPv6 business.