

4via6 Stateless Translation

draft-murakami-softwire-4v6-translation-00.txt

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Overview

- Regarding to 4v6 stateless translation, several mapping algorithms could be considered as candidates
 - draft-murakami-softwire-4v6-translation-00
 - draft-xli-behave-divi-pd-01
 - draft-xli-behave-divi-03
 - draft-boucadair-behave-ipv6-portrange-04
 - draft-despres-softwire-4rd-addmapping-01
 - draft-chen-softwire-4v6-pd-00
- The presentation focus the plan of convergence of drafts on 4v6 translation

Considerations

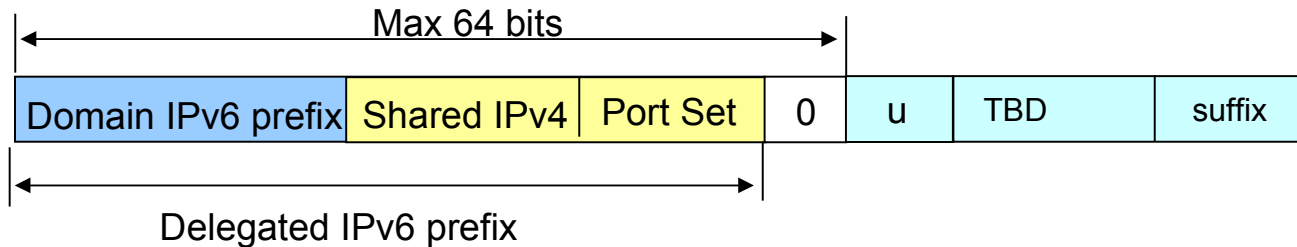
- A unified IPv6 address format may be the first step for the convergence
- A common feature has already appeared in IPv6 address format in term of different algorithms
 - Variable IPv6 prefix assignment
 - Shared IPv4 address expression in IPv6 prefix
 - Carrying Port set information

Mapping algorithm analysis

Draft	Feature	Variable IPv6 prefix	Shared IPv4 address expression in IPv6 prefix	Carrying Port set information in IPv6 prefix
draft-murakami-softwire-4v6-translation-00		Yes	A IPv4 suffix is included in EA bits	Concatenate with IPv4 suffix
draft-xli-behave-divi-pd-01		Yes	S bits	Concatenate with s bits
draft-xli-behave-divi-03		No	No	No
draft-despres-softwire-4rd-addmapping-01		Yes	A IPv4 suffix is included in CE index	Concatenate with IPv4 suffix
draft-boucadair-behave-ipv6-portrange-04		Yes	@IPv4 field, 32bits	Concatenate with @IPv4 field
draft-chen-softwire-4v6-pd-00		Yes	Add set bits	Port set bits

A unified IPv6 address format for 4v6

- A unified IPv6 address format should include following fields to converge 4v6 translation drafts



- Therein:
- Domain IPv6 prefix is assigned by operators to 4v6 translation domain
- Shared IPv4 address could be IPv4 suffix or whole IPv4 address
- Port-set would support various port assignment (e.g. scattered or contiguous schemes)

Algorithm requirements- Shared IPv4 address expressions

- The algorithm should have an ability to assign different port sizes to different classes of customers
- Shared IPv4 address information should be encoded in IPv6 prefix to allow the flexibilities assigning different address space (e.g. IPv4 subnet; a shared IPv4 address; multiple shared IPv4 address)

Algorithm requirements- port set

- Port set should be carried in IPv6 prefix to number the different CEs and adjust usable port sizes
- Both scattered and contiguous schemes should be allowed to assign for different purpose

Further on: convergence proposal

- Basis: comparison of stateless translation
 - draft-dec-stateless-4v6
- 4v6 Translation Architecture:
 - draft-murakami-softwire-4v6-translation
- Methods and algorithms
 - 4v6T: draft-murakami-softwire-4rd
 - draft-xli-behave-divi-03

Expected Results

- Start the convergence of 4v6T drafts
 - Operators have concrete and compelling requirements for this technique!
 - Focus the discussion in one document
- Adopt the idea above

Comments?

Many Thanks!