draft-tsou-stateless-nat44-00

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BEHAVE interim meeting

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Purpose of this presentation

- Gauge interest
- Solicit feedback
- Try to figure out how to progress the draft

Problem

- Stateful NAT44 in CGN
  - Fragile
  - Complex
  - Hard to scale up
  - Hard to log mappings
  - Doesn't like asymmetric routing
  - Etc.

Solution overview

- Each subscriber gets part of an external address (port set)
- The external address and port set are encoded in the internal address that is assigned to the CPE.
- The CPE restricts itself to its allowed port set.
- The stateless NAT44 only translates addresses, extracting the needed information from the address itself.

Address formats

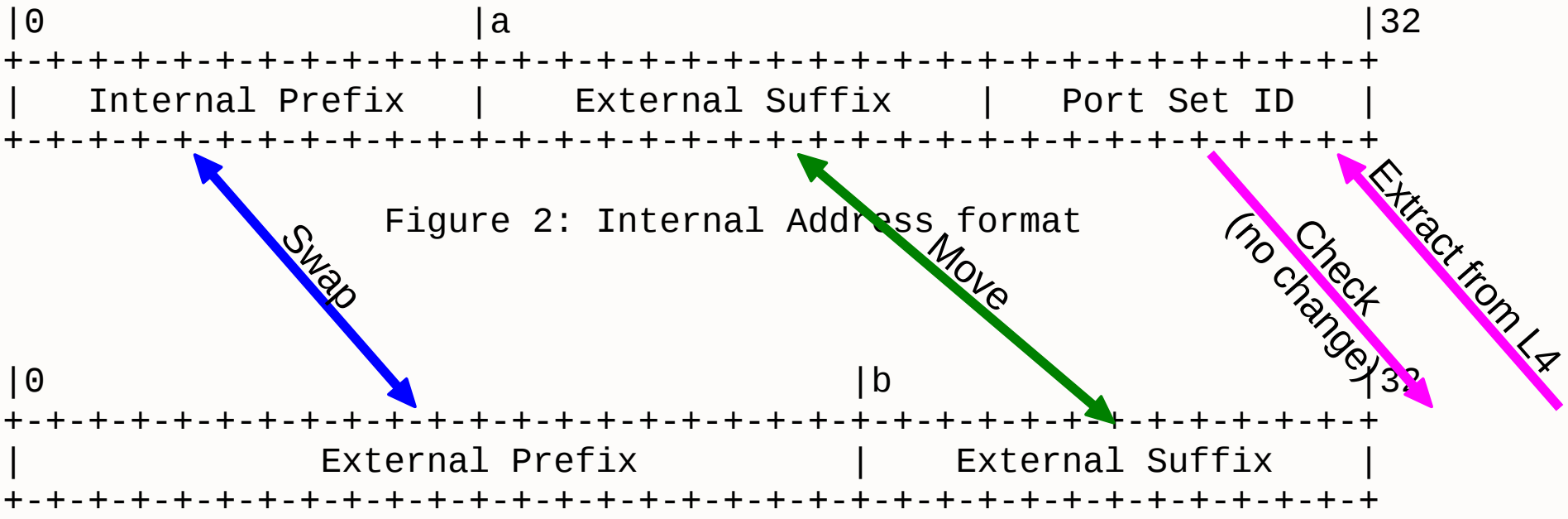


Figure 2: Internal Address format

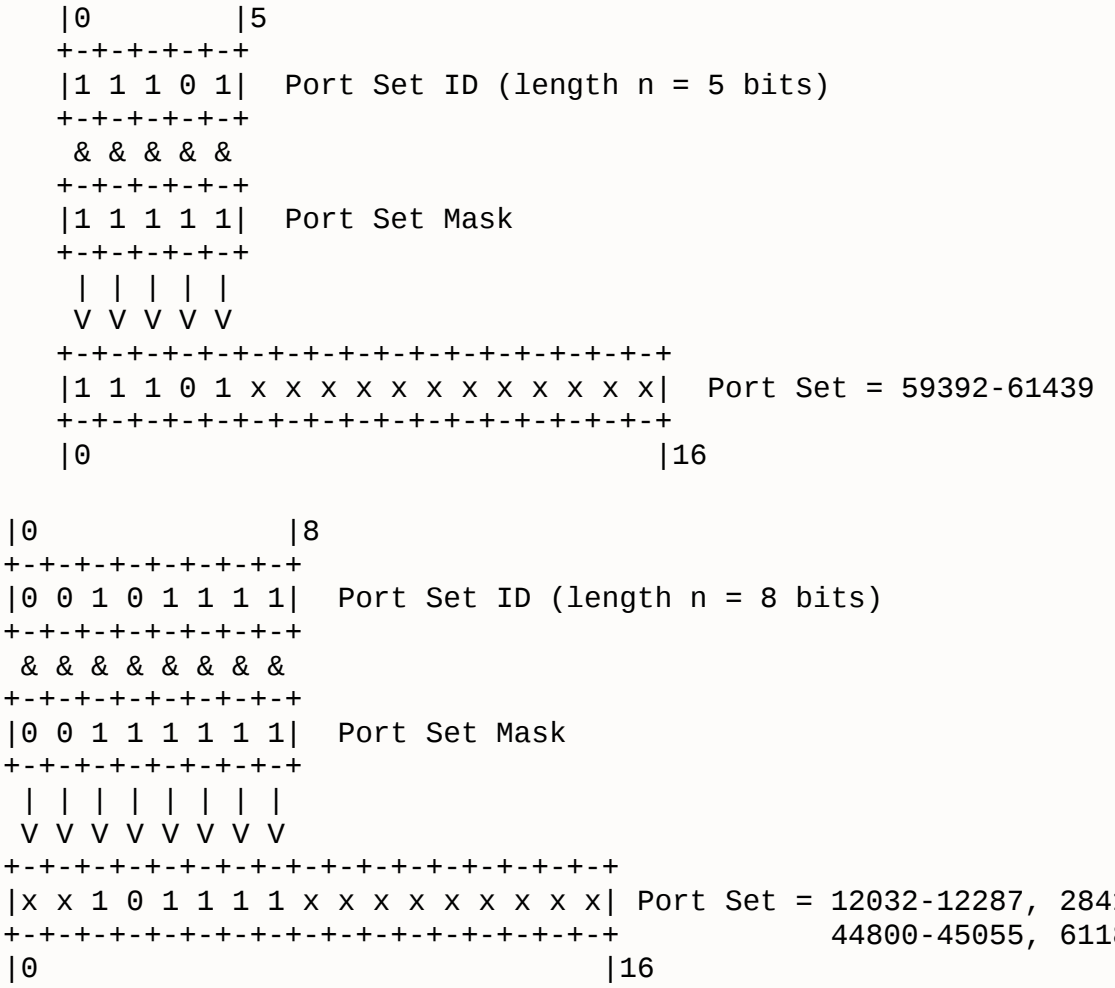
Figure 3: External Address format

Fragment handling

- Address translation depends on L4 port number, therefore fragments need to be reassembled
- Same considerations as NAT64, text adapted from RFC 6146

Non-contiguous port sets

- Optionally, non-contiguous port sets can be used.
- Requires provisioning a port set **mask** to the CPE.



Advantages

- Stateless CGN
  - No logging
  - Robust, scalable, etc.
  - Allows asymmetric routing (careful with fragments)
- Minimal modifications to CPE
  - A vanilla Linux home router can do this today.
- Fits into existing infrastructure and operational practices
- Very flexible port set definition

Next steps

- Would behave be interested in this draft?
- If not, where else should it be discussed?