# draft-ietf-softwire-map

IETF85, softwire WG

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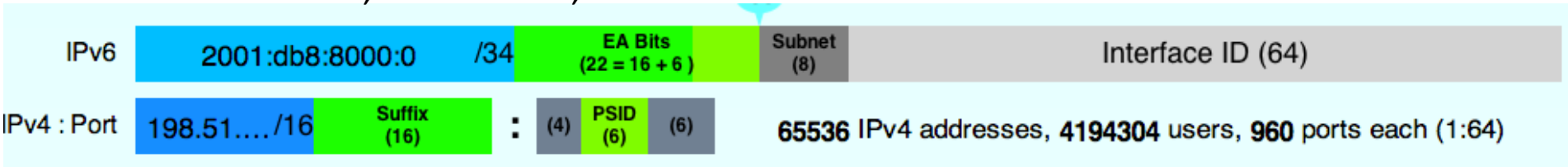
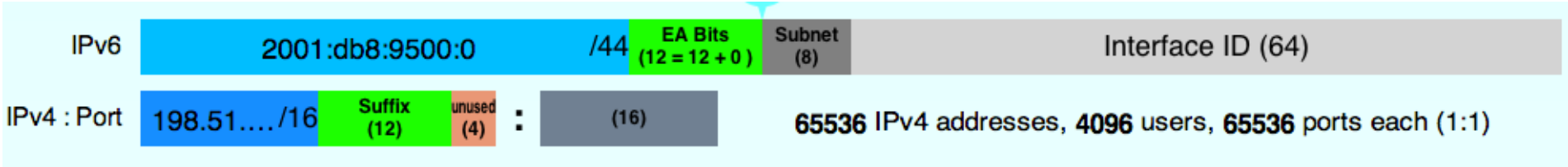
# MAP “modes”

End user IPv6 prefix
EA bits length
IPv4 prefix
PSID (offset/length)

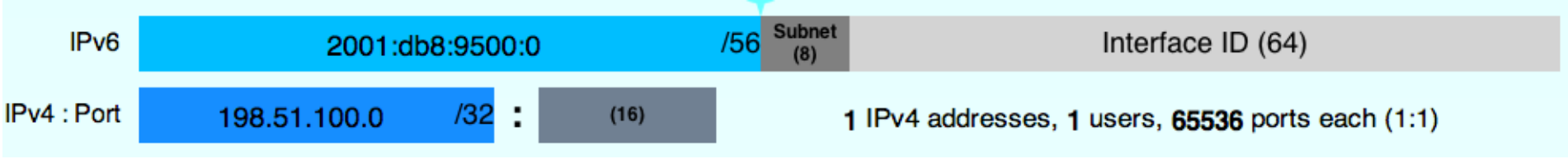
Shared IPv4 address, Mesh mode, embedded address bits:




Shared IPv4 prefix, Mesh mode, embedded address bits:



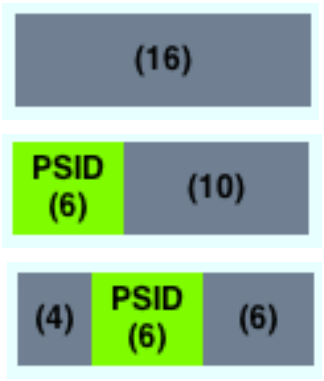

IPv4 address, H&S mode:



# MAP-E issue tracker

| # | Title | Suggested action |
|---|---|---|
| #9 | TCP/IPv6 faster than TCP/IPv4/IPv6 (MAP-E limitation ) | Close ticket. NOP |
| #13 | MAP IPv6 addresses cannot be unique for CEs that are assigned IPv4 prefixes | Clarify draft |
| #14 | Renumbering possibly needed in sites that activate MAP-T or MAP-E | Close ticket no action |
| #18 | Title and file name of the MAP-E draft need to be updated | Up to chairs |
| #20 | ICMP black holes must be impossible | |
| #21 | Fragmentation must not be handled according to RFC 2473 | |
| #22 | The number of Mapping rules all CEs must support needs to be standardized | Not in this document |
| #3 | IPv6 reassembly needed in MAP-E BRs | |
| #23 | The MAP-E port-mapping algorithm must be clarified, and possibly simplified | Simplify document. Close |
| #19 | IPv4 address superfluous in MAP-E Interface IDs | Close |

# #23 The MAP-E port-mapping algorithm must be clarified, and possibly simplified




Full port range

“Port prefix” a /6 of ports.

“Port infix” a /6 of ports. Avoid WKS.

**Proposed solution: No change to algorithm,**
**but simplify text in document. Something more akin to the 4rd text.**

# #13 MAP IPv6 addresses cannot be unique for CEs that are assigned IPv4 prefixes

- (a) Destination addresses of MAP packets sent to CEs contain full-size IPv4 addresses.
- (b) In both the map draft and the map-dhcp draft, each CE has a unique MAP IPv6 address, "the IPv6 address used to reach the MAP function of a CE from other CEs and from BRs".
  - This can work only if all MAP packets sent to a CE have the same IPv4 address, but:
- (c) MAP is supposed to support CEs that are assigned IPv4 prefixes, i.e. multiple addresses.
  - There is a contradiction.

**Proposed solution: The IPv4 prefix is embedded in the address, not the individual IPv4 addresses. Clarify draft.**

# #3/#20/#21: Path MTU and fragmentation

- Follow RFC2473 (Outer fragmentation)
  - Compatible with DS-lite
  - Opens up a hole were a MAP CE may receive IPv6 fragments from different BRs with the same fragment id
- Or inner packet fragmentation? IPv4 packet with DF=0
- MTU must be well managed to avoid fragmentation on the MAP link

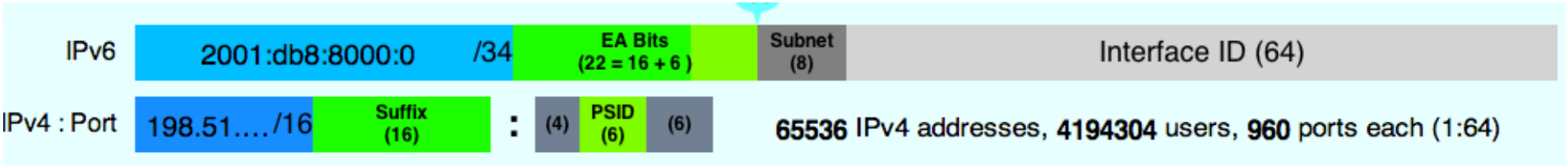
# #19 IPv4 address superfluous in MAP-E Interface IDs

- It has to be something.
  - Well known :: or ::1…
- The IPv4 address is helpful for troubleshooting

**Proposed solution: Keep as is.**

# Subnet id

- Configurable or well known
  - Currently 0



# Provisioning

- DHCPv6 is required to provision “something”
  - IPv6 tunnel end point address, IPv6 address of DHCP server
- Objections to provisioning IPv4 addresses with DHCPv6?
  - New options required anyway
- MAP currently uses DHCPv6
  - (Could in theory use DHCPv4, e.g. DHCPv4 relay on BR or DHCPv4 over IPv6 with local and remote relays)

# Mesh, H&S, 1:1

- Purely a matter of allowing aggregated routes or not.
- A route / rule / mapping per port per customer or an aggregate one covering multiple customers. In H&S mode the aggregate is only on the BR.

# Next steps:

- New revision of working group document
- New revision of provisioning document
- Advance documents