464XLAT
Combination of Stateful and Stateless Translation
draft-ietf-v6ops-464xlat

IETF 84 - v6ops WG

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464XLAT provides **limited** IPv4 connectivity across an IPv6-only network by combining existing and well-known **stateful** protocol translation RFC 6146 in the core and **stateless** protocol translation RFC 6145 at the edge.
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<th>Date</th>
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<tr>
<td>2012/03/26</td>
<td>Discussed in v6ops WG IETF 83</td>
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<tr>
<td>2012/04/17</td>
<td>Published draft-ietf-v6ops-464xlat-02</td>
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<td>2012/05/08</td>
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<tr>
<td>2012/07/30</td>
<td>Discussed in sunset4 WG IETF 84</td>
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<td>» We got feedbacks from the community that this draft should stay in v6ops.</td>
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<tr>
<td>2012/08/03</td>
<td>Presenting in v6ops WG IETF 84 (Just now!)</td>
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<tr>
<td>2012/08/xx</td>
<td>WGLC in v6ops after this meeting</td>
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464XLAT document has matured by a good portion of useful comments in v6ops WG. Thank you! Let’s go to the next step.
BCP or Informational

- Authors believe BCP is the most effective status for 464XLAT. As noted by Lorenzo on-list:

  “An informational document is not a standards document. Thus, it cannot prevent the development of multiple incompatible implementations.

  Given that this document describes how to compose existing standards to run a service that requires both customer-side and provider-side components, I’d say interoperability is pretty important if this is to work at all.”
  http://www.ietf.org/mail-archive/web/v6ops/current/msg13424.html

- Another view from Remi that 464XLAT should be informational or experimental:

  At least two points (both valuable IMHO) specify new behaviors:
  - In section 3: "The CLAT does not comply with the sentence "Both IPv4-translatable IPv6 addresses and IPv4-converted IPv6 addresses SHOULD use the same prefix." that is described on Section 3.3 in [RFC6052] due to using different IPv6 prefixes for CLAT-side and PLAT-side IPv4 addresses. >>
  - There is a request to IANA in section 10.

  BCP is therefore inappropriate AFAIK.
  http://www.ietf.org/mail-archive/web/v6ops/current/msg13427.html
Next Step

- WGLC?
Backup Slides
Scarcity is the fundamental economic problem of having humans who have unlimited wants and needs in a world of limited resources.

Scarcity is the fundamental Network Engineering Problem of having IPv4 nodes who have unlimited connectivity wants and needs in a world of limited addressing resources.

Scarcity is 4 Billion IPv4 addresses and 50 Billion networked nodes

Scarcity is #3 and #4 wireless providers in the USA use IPv4 “squat space” for users, and #1 and #3 launched LTE without IPv6

Observation – IPv4 has run out, and IPv6 is not ready
Uniqueness From Softwires WG

– Does not rely on DHCPv6 which is not supported in UMTS / LTE
– Available host / router implementations
– Does not rely on fixed IP / port mappings, which are not feasible in very IPv4 constrained environments
– Does not require tunneling technologies which can breaking traffic engineering and charging policies
Network architecture

- This architecture consists of CLAT and PLAT with applicability to wireline network (e.g. FTTH) and mobile network (e.g. 3GPP).
References

- Android-CLAT (CLAT code for Android)
  [https://android-review.googlesource.com/34490](https://android-review.googlesource.com/34490)
- n900ipv6 (CLAT code for Nokia n900)
  [https://code.google.com/p/n900ipv6/wiki/Nat64D](https://code.google.com/p/n900ipv6/wiki/Nat64D)
- 464XLAT experiences in JPIX
  [http://www.apricot2012.net/program/ipv6-conference](http://www.apricot2012.net/program/ipv6-conference)
- NEC AccessTechnica CLAT for wireline.
  - This CPE is used for JPIX trial service and WIDE Camp Spring 2012.
  - Multi-vendor interoperability already proven.
    (Cisco, Juniper, A10, and F5 as a PLAT)