464XLAT Deployment Guidelines in Operator Networks

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History

• Discussion in IETF regarding using only NAT64 in our network

• Suggested deploying 464XLAT instead

• Discussion: DNS64 breaks DNSSEC

• 464XLAT can be used w/o DNS64, which is not possible for (only) NAT64
464XLAT Deployment

• 464XLAT has been deployed only in cellular networks with a great success
  – The most successful protocol in terms of number of users
  – More than all the other protocols together

• There is some initial deployment in non-cellular networks
  – Very convenient for operators with both types of networks
464XLAT Multiservice Network

CLAT

Cellular network

PLAT
DNS64/NAT64

464XLAT Residential network

464XLAT Corporate network
Goal (1)

- Originally:
  - Document deploying it w/o DNS64 in IETF network

- RFC6877 is Informational
  - Why not making it STD?

- This document can tackle the issue, a BCP that gives a more formal “status” to 464XLAT

- Single place as guideline to operators:
  - At least 10 documents
Goal (2)

• 464XLAT perceived as “only-for-cellular”

• “IPv4-as-a-service”:
  – Used while needed by customers
    • “on demand”
  – Nothing ”extra” in the operator network
  – Nothing to “remove” when is not used

• So, document as BCP to describe how to deploy it, issues and solutions
DNSSEC Considerations

• Main issues related to DNSSEC and workarounds:
  – DNSSEC validator aware of DNS64
  – Stub validator
  – CLAT with DNS proxy and validator
  – ACL of clients
  – Mapping-out IPv4 addresses
464XLAT with/without DNS64

- 464XLAT could be deployed without DNS64
  - Only if clients have dual-stack “access”
  - Not valid for IPv6-only clients

- Pros and Cons
  - With DNS64
  - Without DNS64
Other Sections

• DNS64 and Reverse Mapping

• CLAT Translation Considerations
  – Dedicated /64 for the NAT46 (stateless)

• Summary of deployment recommendations
Next steps

• Questions ?

• Become a WG item ?

• Inputs ?