

Update to RFC 3484 Default Address Selection for IPv6

[draft-ietf-6man-RFC3484-revise-01.txt](#)

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draft-ietf-6man-rfc3484-revise



- -00 version
 - Adopted as a wg item at IETF 78.
 - Which was one of the conclusions of the Address Selection Design Team
- -01 version
 - restructured so that it describes “update proposal” rather than “considerations”.



Current Contents

- Change Private IPv4 Address Scope to Global
- Updates to the Default Policy Table
- A change to Longest Matching Rule

1. Change Private IPv4 Address Scope to Global



- It's already implemented in major OSs.
- It's reasonable now that IPv4 private address is NATed to global everywhere.

2. Updates to the Default Policy Table



- ULA(fc00::/7) is assigned its own label
 - to prioritize “ULA to ULA” access than “Global to Global”
 - to deprioritize “ULA to Global” than IPv4
- Teredo(2001::/32) is assigned its own label
 - used for only “Teredo to Teredo” access
- Deprecated addresses are assigned its own label and lower precedence not to be used

Prefix	Precedence	Label
::1/128	60	0
fc00::/7	50	1
::/0	40	2
::ffff:0:0/96	30	3
2002::/16	20	4
2001::/32	10	5
::/96	1	10
fec::/16	1	11



3. Change Longest Matching Rule

- To limit the calculation of common prefixes to a maximum length equal to the length of the subnet prefix.
- to avoid non-sense bias between the destination address in the same subnet.

When DA and DB belong to the same address family:

If $\text{CommonPrefixLen}(\text{DA} \ \& \ \text{Netmask}(\text{Source}(\text{DA})), \text{Source}(\text{DA})) > \text{CommonPrefixLen}(\text{DB} \ \& \ \text{Netmask}(\text{Source}(\text{DB})), \text{Source}(\text{DB}))$, then prefer DA.

Similarly, if $\text{CommonPrefixLen}(\text{DA} \ \& \ \text{Netmask}(\text{Source}(\text{DA})), \text{Source}(\text{DA})) < \text{CommonPrefixLen}(\text{DB} \ \& \ \text{Netmask}(\text{Source}(\text{DB})), \text{Source}(\text{DB}))$, then prefer DB.



One More Rule

- A new rule discussion started on the ML.

Prefer an address as the source address that is assigned by/associated with the next-hop

- It is a simple extension of the existing interface based address selection (source selection rule #5)
 - It can solve some cases related to multihoming.
 - Such as ingress filtering, and rogue RA.



Next Step

- I had several good discussion on the ML. Mostly settled after 2 years passed.
- The remaining issues:
 - the new rule is good enough ?
 - prefix for NAT64 64:ff9b::/96 in Policy Table ?
 - The longest match rule should be scrapped ?
- Reviewers are wanted towards WGLC.

Address Selection Policy Enforcement

draft-fujisaki-6man-addr-select-opt-00
draft-hain-ipv6-rpf-icmp-00





History of these 5 years

- Problem Statement and Requirements RFCs published '08.
- The DT discussed intensively, and concluded with RFC 3484bis and Policy Table distribution.
- In Maastricht, the adoption of policy table distribution was delayed due to a upcoming proposal.
 - But, it was not new. It's already in the analysis document: [draft-ietf-6man-addr-select-sol](#)



Next Step

- Consensus call for adoption here ?
 - The protocol itself defined in draft-fujisaki-6man-addr-select-opt-00 is not changed for these 3 years.
- Or, consensus call in 6man mailing lists ?
 - to kick-start discussion, and make the remaining issues clearer.