

IETF 113 – 6lo

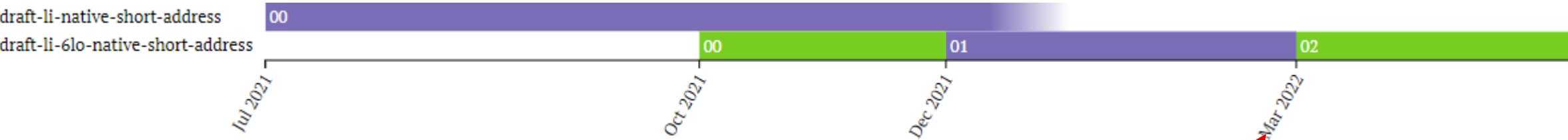
Native Short Addressing for LLN Expansion

draft-li-6lo-native-short-address update

IETF 113 – Vienna

Since IETF 112

- Two revisions submitted



draft-li-6lo-native-short-address-01.txt
December 2021

draft-li-6lo-native-short-address-02.txt
March 2022

Main changes 00 => 01

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A lot of text revision

- Clarification about being in scope of 6lo WG
 - Lot of changes in the text to make clear the solution is about addressing and stateless forwarding
- Clarification about applicability of NSA
 - Pascal T. help a lot in clarifying the applicability context of NSA
 - Static deployment (no dynamic topology update)
- Clarification about Allocation Function
 - Simplicity vs optimality
- Welcome Rong Long as additional co-author

Main changes 01 => 02

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A lot of text revision and new stuff added

- Further clarification on applicability scope
 - Also moved earlier in the document
- Clarification Architectural overview
- Clarification of nodes role
 - Revised and detailed the different roles of the node (root/forwarder/leaf)
- Detailed the address assignment procedure
 - Added two Neighbor Discovery options (including request to IANA)
 - See following slides

Address Configuration based on 6LOWPAN-ND

- Leverage on Neighbor discovery available in 6LoWPAN [RFC6775]
 - RS (Router Solicitation)
 - solicited RA (Router Advertisement)
- NSA node send Routed Solicitation with **NSA Request Address Option (NRAO)**
- Corresponding solicited Router Advertisement will contain **NSA Assign Address Option (NAAO)** with the assigned address

IANA is requested to allocate two values from the "IPv6 Neighbor Discovery Option Formats" registry to be used by NRAO and NAAO.

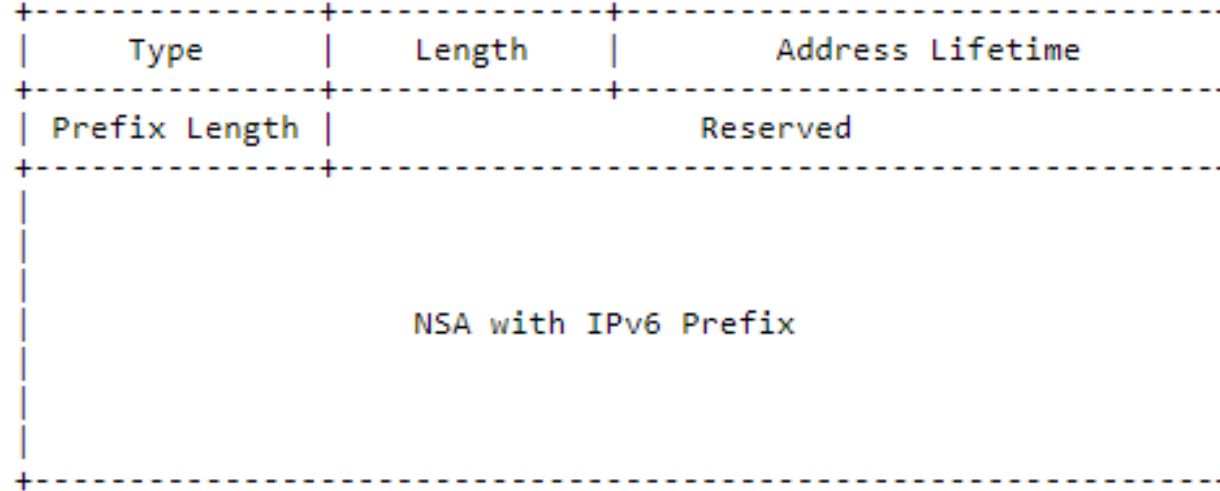
Code	Description	Reference
136	NSA Request Address Option	[This Document]
137	NSA Assign Address Option	[This Document]

NSA Request Address Option (NRAO)

Type	Length	Expected Address Lifetime
Reserved		

- * Expected Address Lifetime: The sender of RS notify the node that assigns the address for how long is expected to be valid. The receiver may ignore this field. The unit is 1 second. This field should be set to zero by sender if there is no requirement on the lifetime.

NSA Assign Address Option (NAAO)



- * Address Lifetime: The maximum seconds for the NSA being valid. The node with this address MUST stop using this address for packet transmission when the life time expires. When the Address Lifetime is zero, the node must drop the address immediately. When the lifetime field is 0xFFFF, the address will be valid forever until the node sends another NAAO to update the lifetime.
- * Prefix Length: This field will notify the receiver the length of the the IPv6 prefix.
- * Reserved: These fields are unused. They MUST be initialized to zero by the sender and MUST be ignored by the receiver.
- * NSA with IPv6 Prefix: This field is filled by the node with the IPv6 prefix (according with the length field), the NSA address as the least significant bit of the IPv6 address, and filling the remaining bits in the middle with zeros.

Next Steps

- Ongoing NSA Evaluation (see next presentation)
- Incorporate further feedback:
 - From Brian Carpenter
 - From Adnan Rashid
 - See: <https://mailarchive.ietf.org/arch/msg/6lo/UJvsew0KR5VmMYks6t3p25Rjmq8/>
- Status:
 - Core elements stable
 - Revision -03 expected right after IETF 113
 - (see above)
 - Consider Adoption?

THANKS!

Welcome **Feedback**