The IPv6 Loopback Address Prefix

draft-6man-ipv6-loopback-01

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The Proposal

- To alter the IPv6 Address Architecture to augment the existing IPv6 Loopback address (::1/128) with a larger address prefix dedicated to support Loopback
- The draft proposes that this space be expanded to a TDB/48 IPv6 prefix formally defined as Node-Local Unicast space.

WG Discussion

Section 11.1 of RFC 4007 explicitly excludes the loopback address (::1) from carrying a zone_id, so the draft states: “Because addresses drawn from the TBD/48 prefix are strictly host-internal and do not associate with physical links, they MUST NOT be qualified with a zone identifier in user interfaces or socket APIs.”

Brian Carpenter: “ So that MUST NOT is wrong - you could reasonably require a null value, or perhaps state that the value supplied MUST be ignored. However, the ground truth is that a programmer must supply a value for sin6_scope_id in real life”

WG Discussion

Adopting "Node-Local Unicast" terminology

Michael Richardson noted that "loopback" strictly implies a single loopback interface, whereas modern use cases (like container environments and service meshes) involve routing across multiple local virtual interfaces.

- How we addressed it: We've formally embraced the "Node-Local Unicast" terminology throughout the text. We explain that while the document is historically named after "loopback", the actual semantic of this space is a "Node-Local Unicast Prefix" designed for strictly isolated, host-internal communication.

WG Discussion

Moving to a /48 prefix size

Maciej Żenczykowski and others commented on the initial proposal of a /96 as being somewhat of an oddity

We've requested allocation size of a /48 in the draft. This ensures that operators can slice up multiple standard /64 subnets for host-internal use without any weird non-64-bit boundaries.

We think that it would be useful to have a loopback / "Node-Local Unicast Prefix" which can be broken up into smaller, usable networks that can still be assigned to virtual interfaces. A /48 doesn't seem "large" but still provides the possibility more than one "interface".

Today’s Request

- Ready for WGLC?