Expanding the IPv6 Documentation Space

Abstract

The document describes the reservation of an additional IPv6 address prefix for use in documentation. The reservation of a /20 prefix allows documented examples to reflect a broader range of realistic current deployment scenarios.

Discussion Venues

This note is to be removed before publishing as an RFC.

Discussion of this document takes place on the IPv6 Operations Working Group mailing list (v6ops@ietf.org), which is archived at https://mailarchive.ietf.org/arch/browse/v6ops/.

Source for this draft and an issue tracker can be found at https://github.com/buraglio/draft-ghnb-v6ops-rfc3849-update.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of BCP 78 and BCP 79.

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at https://datatracker.ietf.org/drafts/current/.

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This Internet-Draft will expire on 17 May 2024.
1. Introduction

[RFC3849] introduced 2001:db8::/32, describing the use of the IPv6 address prefix 2001:DB8::/32 as a reserved prefix for use in documentation. The rationale for this reservation was to reduce the likelihood of conflict and confusion when relating documented examples to deployed systems.

As the global deployment of IPv6 expands and evolves, individual IPv6 network deployment scenarios have also increased in size and diversity, and there is a requirement for documentation to reflect this increased diversity and scope. The original 2001:DB8::/32 reservation is inadequate to describe many realistic current deployment scenarios.

Without this additional address allocation, documentation address prefixes are drawn from address blocks already allocated or assigned to existing organizations or to well known ISPs, or drawn from the currently unallocated address pool. Such use conflicts with existing or future allocations or assignments of IPv6 address space. The reservation of a further /20 IPv6 address prefix from the Global
Unicast Address pool [RFC4291] for documentation purposes avoids such conflicts.

2. Current Assignment and Allocation Data

According to the allocation and assignment data published by the Regional Internet Registries, [NROStatsReport], in August 2023 some 25.9% of all 62,770 recorded IPv6 unicast allocations and assignments are larger than a /32 in size. The most common allocation or assignment size is a /29, used in 24.8% of cases.

The four largest assignments made to end users have been /19s, but these allocations were made before the RIRs' address allocation policies moved away from the use of a fixed /48 site address prefix IPv6 address assignment policies, and in the foreseeable future its unlikely that individual networks require more than a /20. It is believed that a reservation of a /20 would cover the documentation needs as they relate the broad range of realistic network deployments.

3. Filtering and appropriate use

Documentation prefixes are for the use or relaying configuration and documentation examples and as such MUST NOT be used for actual traffic, MUST NOT be globally advertised, and SHOULD NOT be used internally for routed production traffic or other connectivity. Documentation prefixes should be considered bogon and filtered in routing advertisements as appropriate.

4. Conventions and Definitions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

5. Security Considerations

IPv6 addressing documents do not have any direct impact on Internet infrastructure security.

6. IANA Considerations

IANA is to record the reservation of TBD::/20 in the IANA IPv6 [IANAIPv6SPAR]. The Source, Destination, Forwardable, Globally Reachable and Reserved-by-Protocol fields should be recorded as False. There is no Termination Date for this entry. The name of the reservation is "Documentation".
7. References

7.1. Normative References


7.2. Informative References


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Authors' Addresses

Geoff Huston
APNIC
Email: gih@apnic.net

Nick Buraglio
Energy Sciences Network
Email: buraglio@forwardingplane.net