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**Expanding IPv6 Lab Use Space
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Abstract

To reduce the likelihood of addressing conflicts and confusion between lab deployments and non-lab (i.e., production) deployments, an IPv6 unicast address prefix is reserved for use in lab, proof-of-concept, and validation networks as well as for any similar use case. This document describes the use of the IPv6 address prefix 0200::/7 as a prefix reserved for this purpose (repurposing the deprecated OSI NSAP-mapped prefix).

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Table of Contents

- [1.](#) Introduction [2](#)
- [2.](#) New Lab IPv6 Address Prefix [3](#)
- [3.](#) Operational Implications [3](#)
- [4.](#) IANA Considerations [3](#)
- [5.](#) Security Considerations [3](#)
- [6.](#) Acknowledgements [3](#)
- [7.](#) References [4](#)
 - [7.1.](#) Normative References [4](#)
 - [7.2.](#) Informative References [4](#)
- Authors' Addresses [5](#)

1. Introduction

The address architecture for IPv6 ([\[RFC4291\]](#)) does not explicitly define any prefixes allocated exclusively for lab use, nor is such address space allocated in [\[RFC6890\]](#). While lab deployments could potentially use IPv6 address prefixes typically assigned and configured in non-lab network, the use of such addressing in lab environments may create addressing conflicts and operational confusion. For instance, designing labs utilizing ULA `fc00::/7` [\[RFC4193\]](#) is problematic due to the random global ID requirement preventing hierarchical network prefix design possibilities. Further, default address selection behavior [\[RFC6724\]](#) by end nodes may result in a depreferencing of such addresses and prevent lab deployments from accurately modeling their desired non-lab equivalents.

To resolve these problems involved in building large scale lab networks, and pre-staging large-scale networks for deployment, this document allocates the IPv6 address prefix `0200::/7` for these purposes.

2. New Lab IPv6 Address Prefix

The prefix reserved for lab and testing purposes is 0200::/7.

3. Operational Implications

This space SHOULD NOT be employed for addressing use cases which are already defined in other RFCs, such as addresses set apart for documentation, testing, etc.

Because this address prefix has previously been used for the OSI NSAP-mapped prefix set in [[RFC4048](#)] and [[RFC4548](#)], and deprecated, this address prefix is already limited in its usability. In addition, the address prefix was returned to IANA and is available to be marked for lab or other purposes.

This assignment implies that IPv6 network operators SHOULD add this address prefix to the list of non-routeable IPv6 address space, and if packet filters are deployed, then this address prefix SHOULD be added to packet filters. This is not a local-use address prefix so these filters may be used in both local and public contexts.

4. IANA Considerations

IANA is to record the reservation of the IPv6 global unicast address prefix 0200::/7 as a lab-only prefix in the IPv6 address registry. No end party is to be assigned this address.

5. Security Considerations

The addresses assigned for lab and staging use SHOULD be filtered as noted above.

Setting aside address space for lab and staging use, and adding this address space to common filters to prevent destinations in this space from being routed in production networks (including the global Internet) improves security by preventing the leakage of prefixes used for testing into production environments. As such, setting aside this space improves the overall security posture of the Internet.

6. Acknowledgements

The authors acknowledge the work of Bob Hinden and Stephen Deering, in authoring the protocol standard and the addressing architecture for IPv6.

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