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Redesignation of 240/4 from "Future Use" to "Private Use"
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Abstract

This document directs the IANA to designate the block of IPv4 addresses from 240.0.0.0 to 255.255.255.255 (240.0.0.0/4) as unicast address space for Private Use.

1. Redesignation of 240.0.0.0/4

This document directs the IANA to designate the block of IPv4 addresses from 240.0.0.0 to 255.255.255.255 (240.0.0.0/4) as unicast address space for Private Use.

The address block spanning 240.0.0.0 to 255.255.255.255 (240.0.0.0/4), formerly designated as "Class E", and noted as being "Reserved" in the IANA IPv4 address registry, is no longer to be held in reserve by IANA for the IETF.

IANA is directed to redesignate the address block 240.0.0.0/4 as unicast address space intended for Private Use. While the particular form of private use is not specified here, it is envisaged that this address prefix would have use in large private Internets that require more address space than is available in the private use address space designated by [[RFC1918](#)] during the dual stack transition to IPv6.

Potential users of this address space need to ensure that their envisaged deployment can satisfy the caveats noted here.

2. Caveats of Use

Many implementations of the TCP/IP protocol stack have the 240.0.0.0/4 address block marked as experimental, and prevent the host from forwarding IP packets with addresses drawn from this address block.

For this reason, it is strongly suggested that private network addressing requirements which can be fulfilled from the private use address space designated by [[RFC1918](#)] should continue to use that space. Network administrators with very large scale requirements for private use address space who wish to use addresses drawn from 240.0.0.0/4 are advised to conduct appropriate tests to ensure that such addresses can be used in their envisaged private use context.

[Note: not for publication. It is suggested that in order to assist with verification of equipment compatibility, a separate informational RFC or other mechanism be developed to assist with the recording of specific test results, upgrade status, etc.]

3. Considerations

Note: This section is to assist in the discussion of the recommendation proposed in this draft. It is intended that this section would be removed prior to publication.

The option of using this "top part" of the IPv4 address space as a means of mitigating to some extent the issues related to the exhaustion of the IPv4 unallocated address pool date back to at least 1998, if not earlier [[Lear](#)].

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A related internet-draft, [[ID.240space](#)], advocates changing the designation of this address prefix to that of a "useable" unicast address block, without specifying whether the designation should be for private or public use, so the "reserved" status was proposed in this draft for the 240.0.0.0/address block. This proposal differs from [[ID.240space](#)] in advocating that the address block not be used for publically routed address space, but is to be limited to private use contexts. The reason for this decision to propose a designation of Private Use is that for public use the entire installed base of IPv4 hosts on the public Internet, as well as associated private Internet realms that are attached to the public internet via NATs need to be able to generate and forward IPv4 packets that are addressed to 240.0.0.0/4 addresses. The set of changes to host systems may not be undertaken to a generally useful extent within any

reasonable timeframe. The alternative approach is to limit its intended use of 240.0.0.0/4 to private network realms where the population of end devices and forwarding systems that need to support

the use of 240.0.0.0/4 address space is limited. In private use contexts the utility of using this space in a private context is a local decision that is not impacted by any external factors of private use elsewhere.

It has been noted that many end host operating system protocol stacks

do not support the use of 240.0.0.0/4 address space. However, [[ID.240space](#)] reported in March 2008 that:

"Apple OSX has been confirmed to support the use of 240.0.0.0/4 as

unicast address space. Changes have been incorporated into recent

versions of Sun Solaris and have been submitted for inclusion in the Linux kernel tree. No plans have been announced for modifications to any version of Microsoft Windows, in part because

of uncertainty over how to perform 6-to-4 tunneling in the absence

of a definitive statement on whether 240.0.0.0/4 is "public" or "private" space.

This draft advocates the adoption of a definitive statement in the IPv4 address registry that 240.0.0.0/4 is Private Use space to allow transitional tunnelling mechanisms to perform correctly in the context

of use of 6to4 [[RFC3056](#)], Teredo [[RFC4380](#)], and similar forms of IPv6

transitional mechanisms that use IPv6 tunnelling as an overlay on an IPv4 substrate.

It has been commented that this draft requires a similar level of

effort in terms of deployment overheads to that involved in the deployment of IPv6 itself. This observation has been used to argue against adopting this proposal and instead reiterate the calls for the adoption of IPv6 and avoid any unnecessary distraction of effort in artificially prolonging the useful lifespan of IPv4. In response

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to such arguments it is noted that the adoption of IPv6 in an orderly transition context requires the extended use of dual stack support in networks where both IPv6 and IPv4 is available for use. The problem is that the transition phase is now anticipated to last for far longer than the remaining lifetime of the unallocated address pool of IPv4 addresses, and in supporting the dual stack IPv6 transition, there is a need for additional IPv4 addresses in any case. The 240.0.0.0/4 address block allows service provider infrastructure to be numbered in a manner that would not conflict with either customer private address space use from [[RFC1918](#)] space, or public address space.

This private use address pool is intended to assist in the IPv6 transition of larger networks who are using IPv4 in the context of a dual stack deployment. In such contexts it is reported to be the case that the reuse of network 10.0.0/8 is not an option because of existing use and potential address clashes [[ID.1918bis](#)]. The use of 240.0.0.0/4 offers a more conventional method to interconnect CPE NATs and network border carrier NATs without having to use more involved solutions such as [[ID.DualStackLite](#)] or [[ID.NAT464](#)].

4. Security Considerations

Equipment deployed on the public Internet is configured by default to treat addresses in the block 240.0.0.0/4 as experimental addresses that cannot be forwarded. This implies that accidental leakage of packets destined to such addresses would conventionally be discarded.

5. IANA Considerations

The IANA is directed to redesignate the block of IPv4 addresses from 240.0.0.0 to 255.255.255.255 as unicast address space reserved for "Private Use".

6. Acknowledgements

The authors would like to acknowledge the thoughtful assistance of David Conrad, Andy Davidson and Robert Seastrom in the preparation of this document.

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7.1. Normative References

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240.0.0.0/4 Private Use

September

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