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Special Use ASN’s for 44net
draft-hadley-44net-special-asn-allocation-00

Abstract

This document proposes reserving a pool of Autonomous System Numbers (ASNs) for the Amateur Radio Digital Communications Network (44Net, also known as AMPRNet). 44Net traces its origins to the early 1980s when the Class A network 44.0.0.0/8 was set aside for amateur packet radio, enabling worldwide experimental and operational use by licensed radio amateurs. Recent work, including Ursini’s proposal to reserve the IPv6 block 44::/16 for amateur radio, demonstrates ongoing efforts to secure dedicated Internet resources for the community. To complement these efforts, this document recommends reserving approximately 25,000 ASNs for distribution to licensed radio operators and 44Net operators to support past, present, and future allocations, simplify routing and resource management, and make it straightforward to identify 44Net participants on the global Internet.

Status of This Memo

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

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1. Introduction

In 1981, a block of IPv4 addresses (the Class A network 44.0.0.0/8) was assigned for use by licensed amateur radio operators worldwide. This allocation, known as the Amateur Packet Radio Network (AMPRNet or 44Net), provided over 16 million IPv4 addresses dedicated to amateur radio digital communications. The foresight of early amateur digital pioneers like Hank Magnuski (KA6M) ensured that "internet-style networking would be the future" for amateur radio, and they wanted the emerging packet radio networks to participate. Since its allocation in the mid-1980s, 44Net has been used by amateur radio operators for scientific research and experimentation with digital communications over radio, advancing the state of the art in amateur networking and educating operators in these techniques.

Unlike typical commercial ISPs, 44Net is managed by the nonprofit Amateur Radio Digital Communications (ARDC) and operates under amateur radio regulations and community governance. Any licensed radio amateur can request an address in 44Net for experimental use, but commercial use is prohibited and the addresses are provided solely for amateur communications and technical experiments. The social contract of 44Net aligns with amateur radio' s non-pecuniary, public-service ethos, and all usage must comply with applicable radio regulations (e.g. identification, no obscured or encrypted communications except as allowed by law, etc.). These distinctive usage policies and the oversight by the amateur community set 44Net apart from the general Internet. At the same time, 44Net' s IP

addresses are "public, globally routable, and static, no NAT, no CGNAT... IP as it was meant to be." In other words, 44Net is an open network that interconnects with the global Internet, not a closed intranet. When one accesses a 44Net host, they know "it’s provided by a fellow ham in the spirit of amateur radio", yet the packets are carried over standard Internet infrastructure.

44net has historically used Autonomous System Number (ASN) 7377, the University of California, San Diego, as its primary ASN for routing the large prefix’s. However, as the amateur radio community has grown and diversified, there is a need for 44net operators to announce their allocations independently of the IPIP mesh traditionally used with AMPRNet. This led to the use of various ASNs by different 44net operators, often assigned from RIR resources. The process to obtain ASNs from RIRs can be cumbersome for individual amateur operators and small groups, especially given the non-commercial nature of amateur radio. Furthermore, the cost of the obtaining and maintaining ASNs from RIRs can be prohibitive for many amateur operators, who typically operate on a volunteer basis without commercial funding.

This document proposes reserving a contiguous block of 25,000 special-use ASNs for 44net, running from 4199975000 through 4199999999 (inclusive). This block is sized to meet the community’s operational needs while leaving the adjacent 32-bit private ASN range intact; the last ASN in the proposed block (4199999999) sits directly below the start of the 32-bit private ASN range (4200000000). Reserving 41999750004199999999 for amateur radio operators participating in 44net would simplify ASN assignment, reduce reliance on RIR procedures for individual licensed operators, and make it straightforward to identify 44net participants on the global Internet.

2. Requirements Language

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.

3. Problem Statement

Despite the growth of 44net, amateur radio operators have been hindered by the RIR process to obtain resources. These typically include paying other organizations for sponsorship, requiring resource holders to be registered business entities in the region of use, or providing proof of operational needs that 44net operators may not have.

This has led to fragmentation in the use of ASNs within 44net, with different operators using a variety of ASNs obtained from RIRs. This fragmentation complicates routing and management of network traffic within the amateur radio community, as there is no common ASN range that identifies 44net participants. This lack of a dedicated range has led to 44net prefixes being announced to the global Internet from ASNs that may not be recognized as part of the amateur radio community, leading to potential filtering or misrouting of traffic. There is also the operators that have to spend money to have a connection to use that ASN that could be better used for other amateur radio activities and experiments.

By reserving a block of ASNs specifically for 44net, amateur radio operators would be able to obtain ASNs easily and without cost, streamlining the process and reducing administrative overhead. This would facilitate better routing and management of network traffic within the amateur radio community, as all 44net participants could be identified by their ASN range.

The Special Purpose ASN range 419997500041999999999 (25,000 ASNs) would provide a dedicated pool of ASNs for 44net operators, simplifying the process of obtaining ASNs and reducing cost and administrative overhead. This would allow any licensed amateur radio operator to easily acquire an ASN for use in 44net, enable network operators to recognize licensed amateur radio operators by ASN, and facilitate better routing and management of network traffic within the amateur radio community.

We also note the draft proposal to allocate the IPv6 block 44::/16 to 44net [draft-ursini-44net-ipv6-allocation-00], which would provide a contiguous block of IPv6 addresses dedicated to amateur radio use. The allocation of special use IPv6 addresses would further enhance the ability of amateur radio operators to participate in 44net and facilitate the development of innovative applications and services. This further illustrates the need for dedicated resources for 44net within the broader Internet infrastructure.

3.1. Benefits of Special Use ASN Allocation

Reserving the ASN range 41999750004199999999 (25,000 ASNs) for 44net would provide several key benefits to the amateur radio community:

1. Simplified Access: Amateur radio operators could easily obtain ASNs without going through the RIR process, reducing administrative overhead and cost.

2. Community Identity: A dedicated ASN range would help identify 44net participants, fostering a sense of community and shared purpose among amateur radio operators.

3. Improved Routing: With a common ASN range, routing and management of network traffic within 44net would be streamlined, reducing complexity and potential misrouting issues.

4. Encouragement of Experimentation: By lowering barriers to entry, more amateur radio operators may be encouraged to experiment with digital communications, advancing the state of the art in amateur networking.

4. IANA Considerations

This document requests that IANA reserve the ASN range 4199975000 through 4199999999 (inclusive) as a Special-Purpose ASN block titled "Special-Purpose ASNs for 44Net" and record that block in the IANA Special-Purpose ASN registry.

IANA is requested to create and maintain a public registry for this block with the following fields: ASN, Assignee Name, Assignee Contact, Purpose, Date of Assignment, and Reference (for example, this document).

Assignments from this block are intended solely for licensed amateur radio operators and entities acting on their behalf for operation within the Amateur Radio Digital Communications Network (44Net). Assignments MUST include documentation demonstrating the assignee’s licensed amateur radio status (or the authority under which the assignee acts) and a brief statement of intended use in 44Net. IANA is requested to record each assignment in the registry defined above.

Operational responsibility for day-to-day allocation and verification may be delegated by IANA to a suitable community-designated steward (for example, ARDC or another qualified organization) by mutual agreement; any such delegation, including the delegated organization's name, scope of authority, and point of contact, SHOULD be recorded in the registry. Any delegation or changes to assignment procedures SHOULD be documented openly and announced to the IETF community.

Requests for assignment or additional operational details SHOULD be sent to the community-designated steward. The steward will vet requests and perform assignments from the reserved block, and will coordinate with IANA and the IETF so that assigned ASNs are recorded in the IANA registry. Where IANA retains final authority over registration, the steward and IANA will cooperate to ensure registry entries are created or updated promptly. This request is made in accordance with the guidance in RFC 8126.

IANA is requested to list this allocation in the "Special-Purpose Autonomous System (AS) Numbers" registry. In addition, IANA (or the appropriate protocol registry operator) is requested to create and maintain a separate ledger titled "Special-Purpose ASNs for 44Net" within the Autonomous System Numbers protocol registries. That ledger SHALL record all assignments made under this allocation and mirror the public registry fields described above so that assignments made by the community-designated steward are visible in both the Special-Purpose ASN registry and the dedicated 44Net ledger.

5. Security Considerations

This document should not affect the security of the Internet.

6. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", March 1997, <https://www.rfc-editor.org/info/rfc2119>.

[RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words", BCP 14, RFC 8174, DOI 10.17487/RFC8174, May 2017, <https://www.rfc-editor.org/info/rfc8174>.

7. Informative References

[draft-ursini-44net-ipv6-allocation-00]
Ursini, P. L., "Reservation of IPv6 Address Block 44::/16 for Amateur Radio Digital Communications (44Net)", 2025, <https://datatracker.ietf.org/doc/html/draft-ursini-44net-ipv6-allocation-00>.

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