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Early IANA Allocation of Standards Track Code Points
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Abstract

This memo describes the process for early allocation of code points by IANA from registries for which "Specification Required", "RFC Required", "IETF Review", or "Standards Action" policies apply. This process can be used to alleviate the problem where code point allocation is needed to facilitate desired or required implementation and deployment experience prior to publication of an RFC that would normally trigger code point allocation.

This document obsoletes [RFC 4020](#).

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[1.](#) Introduction

In protocol specifications documented in RFCs, there is often a need to allocate code points for various objects, messages, or other protocol entities so that implementations can interoperate. Many of these code point spaces have registries handled by the Internet Assigned Number Authority (IANA). Several IANA allocation policies are described in [RFC 5226](#) [[RFC5226](#)]. Some of them, such as "First Come First Served" or "Expert Review", do not require a formal IETF action before the IANA performs allocation. However, in situations where code points are a scarce resource and/or the IETF community wishes to retain tight control of the protocol, policies such as "IETF Review" (formerly "IETF Consensus"), or "Standards Action" have been used. Such allocation policies represents a problem in situations where implementation and/or deployment experience are desired or required before the document becomes an RFC.

To break the deadlock, document authors often choose some "seemingly unused" code points, often by selecting the next available value from the registry; these may turn out to be different from those later assigned by IANA. To make this problem worse, "pre-RFC"

implementations are often developed and deployed based on these code point selections. This creates several potential interoperability problems between early implementations and implementations of the final standard, as described below:

1. IANA allocates code points different from those that early implementations assumed would be allocated. Early implementations won't interoperate with standard ones.
2. IANA allocates code points for one extension while a "pre-RFC" implementation of a different extension chooses the same code point. The different extensions will collide on the same code point in the field.

This gets in the way of the main purpose of standards; namely, to facilitate interoperable implementations.

It is easy to say that pre-RFC implementations should be kept private and should not be deployed; however, both the length of the standards process and the immense value of early implementations and early deployments suggest finding a better solution. As an example, in the case of documents produced by Working Groups in the Routing Area, a pre-RFC implementation is highly desirable and sometimes even required [[RFC4794](#)], and early deployments provide useful feedback on the technical and operational quality of the specification.

This memo addresses the early allocation of code points so that reservations are made in the IANA registries before the publication of an RFC. The early allocation mechanisms are applied only to spaces whose allocation policy is "Specification Required" (where an RFC is used as the stable reference), "RFC Required", "IETF Review", or "Standards Action". For an explanation of these allocation policies, see [[RFC5226](#)].

A policy for IANA early allocations was previously described in [[RFC4020](#)]. This document obsoletes [RFC 4020](#) and adds other registration procedures to the types of registries that can qualify for early allocation.

[2.](#) Conditions for Early Allocation

The following conditions must hold before a request for early allocation of code points will be considered by IANA:

- a. The code points must be from a space designated as "Specification Required" (where an RFC will be used as the stable reference), "RFC Required", "IETF Review", or "Standards Action".
- b. The format, semantics, processing, and other rules related to handle the protocol entities defined by the code points (henceforth called "specifications") must be adequately described in an Internet-Draft.

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- c. The specifications of these code points must be stable; i.e., if there is a change, implementations based on the earlier and later specifications must be seamlessly interoperable.
- d. There is sufficient interest in early (pre-RFC) implementation and deployment in the community as judged by working group chairs or ADs.

If conditions (a) or (b) are not met, then the processes in this memo do not apply.

[3.](#) Process for Early Allocation

There are three processes associated with early allocation: making the request for code points; following up on the request; and revoking an early allocation. It cannot be emphasized enough that these processes must have a minimal impact on IANA itself, or they will not be feasible.

The processes described below assume that the document in question is the product of an IETF Working Group. If this is not the case, replace "WG chairs" below with "Shepherding Area Director".

[3.1.](#) Request

The process for requesting and obtaining early allocation of code points is as follows:

1. The authors (editors) of the document submit a request for early

allocation to the Working Group chairs, specifying which code points require early allocation and which document they should be assigned to.

2. The WG chairs determine whether the conditions for early allocations described in [section 2](#) are met; particularly, conditions (c) and (d).
3. The WG chairs gauge whether there is consensus within the WG that early allocation is appropriate in the case of the given document.
4. If steps 2) and 3) are satisfied, the WG chairs request approval of the Area Director(s). The Area Director(s) may apply judgement to the request especially if there is a risk of registry depletion.
5. The WG chairs request IANA to make an early allocation.

6. IANA makes an allocation from the appropriate registry, marking it as "Temporary", valid for a period of one year from the date of allocation. The date of first allocation the date of expiry should also be recorded in the registry and made visible to the public.

Note that Internet-Drafts should not include a specific value of a code point until this value has been formally allocated by IANA.

[3.2.](#) Follow-Up

It is the responsibility of the document authors and the Working Group chairs to review changes in the document, and especially in the specifications of the code points for which early allocation was requested, to ensure that the changes are backward compatible. If at some point changes that are not backward compatible are nonetheless required, a decision needs to be made as to whether previously allocated code points must be deprecated (see [section 3.3](#) for more information on code point deprecation). The considerations include aspects such as the possibility of existing deployments of the older implementations and, hence, the possibility for a collision between older and newer implementations in the field. If the document

progresses to the point at which IANA normally makes code point allocations, it is the responsibility of the authors and the WG chairs to remind IANA that there were early allocations, and of the code point values so allocated, in the IANA Considerations section of the RFC-to-be. Allocation is then just a matter of removing the "temporary" tag from the allocation description.

[3.3.](#) Expiry

If early allocations expire before the document progresses to the point where IANA normally makes allocations, the authors and WG chairs may repeat the process in [section 3.1](#) to request renewal of the code points. At most, one renewal request may be made; thus, authors should choose carefully when the original request is to be made.

As an exception to the above rule, under rare circumstances, more than one allocation renewal may be justified. All such renewal requests must be reviewed by the IESG. The renewal request to the IESG must include the reasons why such renewal is necessary, and the WG's plans regarding the specification.

If a follow-up request is not made, or the document fails to progress to an RFC, the WG chairs are responsible for informing IANA that the code points are to be marked "deprecated" (and are not to be allocated). The WG chairs are further responsible for informing IANA

when the deprecated code points can be completely de-allocated (i.e., made available for new allocations). Implementers and deployers need to be aware that this deprecation and de-allocation could take place at any time after expiry, and an expired early allocation is therefore best considered as deprecated.

In particular, it is not IANA's responsibility to track the status of allocations, their expiration, or when they may be re-allocated.

Note that if a document is submitted for review to the IESG and at the time of submission some early allocations are valid (not expired), these allocations must not be expired while the document is under IESG consideration or waiting in the RFC Editor's queue after approval by the IESG.

[4.](#) IANA Considerations

This document defines procedures for early allocation of code points in the registries with the "Specification Required", "RFC Required", "IETF Review", and "Standards Action" policies and as such directly affects IANA.

[5.](#) Security Considerations

It is important to keep in mind 'denial of service' attacks on IANA as a result of the processes in this memo. There are two that are immediately obvious: depletion of code space by early allocations and process overloading of IANA itself. The processes described here attempt to alleviate both of these, but they should be subject to scrutiny by IANA to ensure protection, and IANA may at any time request the IESG to suspend the procedures described in this document.

There is a significant concern that the procedures in this document could be used as an end-run on the IETF process to achieve code point allocation when an RFC will not be published. For example, a WG or a WG chair might be put under pressure to obtain an early allocation for a protocol extension for a particular company or for another SDO even though it might be predicted that an IETF LC or IESG Evaluation would reject the approach that is documented. The requirement for AD consent of early review is an important safe-guard, and ADs with any concern are strongly recommended to escalate the issue for IESG-wide discussion.

[6.](#) References

[6.1.](#) Normative References

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[RFC5226] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", [BCP 26](#), [RFC 5226](#), May 2008.

[6.2.](#) Informative References

[RFC4020] Kompella, K. and A. Zinin, "Early IANA Allocation of Standards Track Code Points", [BCP 100](#), [RFC 4020](#), February

2005.

[RFC4794] Fenner, B., "[RFC 1264](#) Is Obsolete", [RFC 4794](#), December 2006.

[Appendix A](#). Acknowledgments

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