              Early IANA Allocation of Standards Track Code Points

Status of This Memo

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Abstract

   This memo discusses earlier allocation of code points by IANA as a
   remedy to the problem created by the "Standards Action" IANA policy
   for protocols for which, by the IETF process, implementation and
   deployment experience is desired or required prior to publication.

1. Introduction

   In Standards Track 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 2434 [2434]. 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 is willing to retain tight
   control of the protocol, policies such as IESG Approval, IETF
   Consensus, or Standards Action have been used. The Standards Action
   policy represents a problem in situations where implementation and/or
   deployment experience are desired or required for the Standards
   Action.

   To break the deadlock, "pre-RFC" implementations have sometimes
   simply chosen some "seemingly unused" code points; these may turn out
   to be different from those later assigned by IANA. To make matters
   worse, these "pre-RFC" implementations are often deployed. 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 used silently for other extensions.
   Different extensions will collide.

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, and early deployments provide useful feedback on the
technical and operational quality of the specification.

This memo proposes that, under strictly controlled circumstances,
IANA make an early allocation of code points. The memo lays out the
conditions for early allocation, as well as the process to be
followed; it also says how these allocations are dealt with in the
event of a failure in the process (such as the RFC not being
published).

This memo only addresses the early allocation of code points from
spaces whose allocation policy is "Standards Action" [2434] AND that
have been amended to permit early allocation. This permission must
be granted by the IESG, and code spaces with permission for early
allocation must be marked as such in the IANA registry.

2. Conditions for Early Allocation

   The following conditions must hold before a request may be made for
   early allocation of code points:

   a) The code points must be from a space designated as "Standards
      Action", amended by IESG approval to permit Early Allocation.

   b) The format, semantics, processing, and other rules related to
      handling the protocol entities defined by the code points
      (henceforth called "specifications") must be adequately described
      in an Internet draft that is proposed as Standards Track.

   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.

   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 it is, with the approval of the Area Director(s), the WG chairs
      request IANA to make an early allocation.

   5) 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 allocation 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 follow an abbreviated version of 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 a Standards Track 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).

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 should 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 Standards Action policy and as such directly affects IANA functions.

5. Normative References

[2434] Narten, T. and H. Alvestrand, "Guidelines for Writing an IANA Considerations Section in RFCs", BCP 26, RFC 2434, October 1998.

6. 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 to ensure this.

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