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Extension Registry for the Extensible Provisioning Protocol
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Abstract

The Extensible Provisioning Protocol (EPP) includes features to add functionality by extending the protocol. It does not, however, describe how those extensions are managed. This document describes a procedure for the registration and management of extensions to EPP, and it specifies a format for an IANA registry to record those extensions.

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

Domain name registries implement a variety of operational and business models. The differences in these models make it impossible to develop a "one size fits all" provisioning protocol; the Extensible Provisioning Protocol [STD69] was designed to focus on a minimal set of common functionality with built-in extension capabilities that allow new features to be specified on an "as needed" basis. Guidelines for extending EPP are documented in RFC 3735 [RFC3735].

RFCs 3735 and 5730 do not describe how extension development can be managed and coordinated. This has led to a situation in which server operators can develop different extensions to address similar needs, such as the provisioning of Value Added Tax (VAT) information. Clients then need to support multiple extensions that serve similar purposes, and interoperability suffers as a result.

An IANA registry can be used to help manage and coordinate the development of protocol extensions. This document describes an IANA registry that will be used to coordinate the development of EPP extensions.

This update was written to address a few issues that were identified with RFC 7451 [RFC7451] over time. The name of the mailing list used to review and discuss registration requests was changed from "eppext" to "regext" throughout the document. Text has been added to describe reviewer responsibility to confirm correctness of URIs used in extension registration requests. "Other" has been added to the set of document status values for the registry to avoid confusion with "Informational" RFCs. Section 2.2.3 has been updated to note that registry entries can be removed with IESG approval. Section 2.2.2 has been updated by changing "<registrant name>, <email address>" to "<name>, <address>" to meet right margin constraints.

1.1. Conventions Used in This Document

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.

2. Extension Specification and Registration Procedure

This section describes the format of an IANA registry and the procedures used to populate and manage registry entries.

2.1. Extension Specification

This registry uses the "Specification Required" policy described in RFC 8126 [RFC8126]. An English language version of the extension specification will be referenced from the registry, though non-English versions of the specification may also be provided. Note that Section 2.1 of RFC 3735 [RFC3735] provides specific guidelines for documenting EPP extensions.

The "Specification Required" policy requires review by a designated expert. Section 5 of RFC 8126 [RFC8126] describes the role of designated experts and the function they perform. This policy also requires "a permanent and readily available public specification". RFC documents meet that requirement. Proprietary specifications may meet that requirement, depending on how they are archived and accessible. Internet-Draft documents do not meet that requirement. RFC 2026 [RFC2026] notes that "Internet-Drafts have no formal status, and are subject to change or removal at any time".

2.1.1. Designated Expert Evaluation Criteria

A high-level description of the role of the designated expert is described in Section 5.2 of RFC 8126 [RFC8126]. Specific guidelines for the appointment of designated experts and the evaluation of EPP extensions are provided here.

The IESG should appoint a small pool of individuals (perhaps 3 - 5) to serve as designated experts, as described in Section 5.2 of RFC 8126 [RFC8126]. The pool should have a single administrative chair who is appointed by the IESG. The designated experts MUST use the existing regext mailing list (regext@ietf.org) or its successor for public discussion of registration requests.

Extensions should be evaluated for architectural soundness using the guidelines described in RFC 3735 [RFC3735], including the Security Considerations section of that document. Expert evaluation should explicitly include consideration of the privacy consequences of proposed extensions, and, at a minimum, ensure that any privacy considerations are fully documented in the relevant specification(s). URIs proposed in extensions (XML namespace and schema registration requests are commonly found in EPP extensions) should be evaluated for both syntactic and semantic correctness. XML schemas, XML schema URIs, and XML namespace URIs defined in the extension specification MUST be registered in the IETF XML Registry using the procedures described in RFC 3688 [RFC3688]. IETF namespaces MUST be reserved for IETF specifications. Non-IETF namespaces MUST be used for non-IETF specifications (which includes RFC documents published using the Independent Submission stream); the designated experts may need to work with a registrant to identify URIs that can be added to the IETF XML Registry. Extensions and any normative reference necessary to implement the extension MUST NOT be denoted with "work in-progress" or any similar description.

The results of the evaluation MUST be shared via email with the registrant and the regext mailing list. Issues discovered during the evaluation can be corrected by the registrant, and those corrections can be submitted to the designated experts until the designated experts explicitly decide to accept or reject the registration request. The designated experts MUST make an explicit decision and that decision MUST be shared via email with the registrant and the regext mailing list. If the specification for an extension is an IETF Standards Track document, no review is required by the designated expert.

Designated experts should be permissive in their evaluation of requests to register extensions that have been implemented and deployed by at least one registry/registrar pair. This implies that

it may indeed be possible to register multiple extensions that provide the same functionality. Requests to register extensions that have not been deployed should be evaluated with a goal of reducing functional duplication. A potential registrant who submits a request to register a new, un-deployed extension that includes similar functionality to an existing, registered extension should be made aware of the existing extension. The registrant should be asked to reconsider their request given the existence of a similar extension. Should they decline to do so, perceived similarity SHOULD NOT be a sufficient reason for rejection as long as all other requirements are met.

2.2. Registration Procedure

The registry contains information describing each registered extension. Registry entries are created and managed by sending forms to IANA that describe the extension and the operation to be performed on the registry entry.

2.2.1. Required Information

Name of Extension: A case-insensitive, ASCII text string that contains the name of the extension specification. Non-ASCII representations of the extension name can be included in the "Notes" described below.

Document Status: The document status of the specification document. For RFC documents, the possible set of values includes "Standards Track", "Informational", "Experimental", "Historic", and "BCP" as described in Sections 4 and 5 of RFC 2026 [RFC2026]. For documents that are not RFCs, this will always be "Other".

Reference: A permanent, publicly available reference to the specification of this extension. This could be an RFC number or some other pointer to the document defining the extension that meets the "Specification Required" registry policy.

Registrant Name and Email Address: The name and email address of the person that is responsible for managing the registry entry. If the extension is registered by an IETF stream RFC, this can simply be listed as "IETF, <iesg@ietf.org>".

TLDs: A text string containing the top-level domain name (or domain names), including the preceding ".", for which the extension has been specified (e.g., ".org"). If there are multiple TLDs, they are given as a list of domain names separated by commas, (e.g. ".com", ".net"). Internationalized Domain Name (IDN) TLDs MUST be specified in A-label [RFC5890] format. If the extension is not associated with a specific

top-level domain, the case-insensitive text string "Any" can be used to indicate that. If the extension is not associated with domain name processing, the case-insensitive text string "N/A" (Not Applicable) can be used to indicate that.

IPR Disclosure: A pointer to any Intellectual Property Rights (IPR) disclosure document(s) related to this extension, or "None" MAY be used if there are no such disclosures. This can be an IPR disclosure filed with the IETF in accordance with RFC 8179 [RFC8179] if the extension is part of an IETF Contribution, or it can be other IPR disclosure documents identifying the claimed intellectual property rights and terms of use for extensions that are not part of an IETF Contribution.

Status: Either "Active" or "Inactive". The "Active" status is used for extensions that are currently implemented and in use. The "Inactive" status is used for extensions that are not implemented or are otherwise not being used. "Inactive" can also be used for extensions for which a reference specification becomes unavailable as described in Section 2.2.4.

Notes: Either "None" or other text that describes optional notes to be included with the registered extension. If the Status value is "Inactive", text MUST be included to describe how and when this state was reached.

2.2.2. Registration Form

The required information MUST be formatted consistently using the following registration form. Form field names and values MAY appear on the same line.

```
-----BEGIN FORM-----
Name of Extension: <text string> (quotes are optional)

Document Status: <document status>

Reference: <RFC number, URL, etc.>

Registrant Name and Email Address: <name>, <address>

TLDs: "Any"|"N/A"|<one or more TLD text strings separated by commas>

IPR Disclosure: "None"|<URL>

Status: "Active"|"Inactive"

Notes: "None"|<optional text>
```

```
    -----END FORM-----
```

Example form with RFC specification:

```
    -----BEGIN FORM-----
    Name of Extension:
    "An Extension RFC for the Extensible Provisioning Protocol (EPP)"

    Document Status:  Standards Track

    Reference:  RFC XXXX

    Registrant Name and Email Address:  IETF, <iesg@ietf.org>

    TLDs: Any

    IPR Disclosure: None

    Status: Active

    Notes: None
    -----END FORM-----
```

Example form with non-RFC specification:

```
    -----BEGIN FORM-----
    Name of Extension:
    "An Example Extension for the .example Top-Level Domain"

    Document Status: Other

    Reference:
    https://www.example.com/html/example-epp-ext.txt

    Registrant Name and Email Address: John Doe, jdoe@example.com

    TLDs: .example

    IPR Disclosure:
    https://www.example.com/ipr/example-epp-ext-ipr.html

    Status: Active

    Notes: None
    -----END FORM-----
```

2.2.3. Registration Processing

Registrants should send each registration form to IANA with a single record for incorporation into the registry. Send the form via email to <iana@iana.org> or complete the online form found on the IANA web site. The subject line MUST indicate whether the enclosed form represents an insertion of a new record (indicated by the word "INSERT" in the subject line), replacement of an existing record (indicated by the word "MODIFY" in the subject line), deactivation of an existing record (indicated by the word "DEACTIVATE" in the subject line), or removal of an existing record (indicated by the word "REMOVE" in the subject line). Registrations created through IETF consensus can only be removed or deactivated with IESG Approval (see [RFC8126]). Registrations not created through IETF consensus can be removed or deactivated with the approval of the IESG, in consultation with or at the request of the Designated Experts. Registrations not created through IETF consensus can also be removed or deactivated by the original registrant, in consultation with the Designated Experts. On receipt of a registration request, IANA will initiate review by the designated expert(s), who will evaluate the request using the criteria in Section 2.1.1 in consultation with the current working group mailing list focused on the development of EPP extensions.

2.2.4. Updating Registry Entries

When submitting changes to existing registry entries, include text in the "Notes" field of the registration form describing the change. Under normal circumstances, registry entries are only to be updated by the registrant. If the registrant becomes unavailable or otherwise unresponsive, the designated expert can submit a registration form to IANA to update the registrant information. Entries can change state from "Active" to "Inactive" and back again as long as state-change requests conform to the processing requirements identified in this document. In addition to entries that become "Inactive" due to a lack of implementation, entries for which a specification becomes consistently unavailable over time should be marked "Inactive" by the designated expert until the specification again becomes reliably available.

3. IANA Considerations

IANA has created the "Extensions for the Extensible Provisioning Protocol (EPP)" registry to manage EPP extensions. This registry has its own heading on IANA’s protocol listings. The information to be registered and the procedures to be followed in populating the registry are described in Section 2.

Name of registry: Extensions for the Extensible Provisioning Protocol (EPP)

Section at https://www.iana.org/protocols:
Registry Title:
Extensions for the Extensible Provisioning Protocol (EPP)
Registry Name:
Extensions for the Extensible Provisioning Protocol (EPP)
Registration Procedure:
Specification Required
Reference:
This document
Required information:
See Section 2.2.1
Review process:
"Specification Required" as described in RFC 8126 [RFC8126]
Size, format, and syntax of registry entries:
See Section 2.2.1
Initial assignments and reservations:
Preserved from the existing registry. Please change all non-RFC entries in the registry that have document status "Informational" to document status "Other".

In addition, the form used to populate and manage the registry has been added to the table of Protocol Registration Forms maintained by IANA. IANA is further requested to forward all designated expert review requests to both the designated expert and the "regext" mailing list or its successor.

4. Security Considerations

This document introduces no new security considerations to EPP. However, extensions should be evaluated according to the Security Considerations of RFC 3735 [RFC3735] and STD 69 [STD69].

5. References

5.1. Normative References

[STD69] Internet Standard 69,
<https://www.rfc-editor.org/info/std69>.
At the time of writing, this STD comprises the following:

Hollenbeck, S., "Extensible Provisioning Protocol (EPP)", STD 69, RFC 5730, DOI 10.17487/RFC5730, August 2009, <https://www.rfc-editor.org/info/rfc5730>.

Hollenbeck, S., "Extensible Provisioning Protocol (EPP) Domain Name Mapping", STD 69, RFC 5731, DOI 10.17487/RFC5731, August 2009, <https://www.rfc-editor.org/info/rfc5731>.

Hollenbeck, S., "Extensible Provisioning Protocol (EPP) Host Mapping", STD 69, RFC 5732, DOI 10.17487/RFC5732, August 2009, <https://www.rfc-editor.org/info/rfc5732>.

Hollenbeck, S., "Extensible Provisioning Protocol (EPP) Contact Mapping", STD 69, RFC 5733, DOI 10.17487/RFC5733, August 2009, <https://www.rfc-editor.org/info/rfc5733>.

Hollenbeck, S., "Extensible Provisioning Protocol (EPP) Transport over TCP", STD 69, RFC 5734, DOI 10.17487/RFC5734, August 2009, <https://www.rfc-editor.org/info/rfc5734>.

[RFC2026] Bradner, S., "The Internet Standards Process -- Revision 3", BCP 9, RFC 2026, DOI 10.17487/RFC2026, October 1996, <https://www.rfc-editor.org/info/rfc2026>.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/RFC2119, March 1997, <https://www.rfc-editor.org/info/rfc2119>.

[RFC3688] Mealling, M., "The IETF XML Registry", BCP 81, RFC 3688, DOI 10.17487/RFC3688, January 2004, <https://www.rfc-editor.org/info/rfc3688>.

[RFC3735] Hollenbeck, S., "Guidelines for Extending the Extensible Provisioning Protocol (EPP)", RFC 3735, DOI 10.17487/RFC3735, March 2004, <https://www.rfc-editor.org/info/rfc3735>.

[RFC5890] Klensin, J., "Internationalized Domain Names for Applications (IDNA): Definitions and Document Framework", RFC 5890, DOI 10.17487/RFC5890, August 2010, <https://www.rfc-editor.org/info/rfc5890>.

[RFC7451] Hollenbeck, S., "Extension Registry for the Extensible Provisioning Protocol", RFC 7451, DOI 10.17487/RFC7451, February 2015, <https://www.rfc-editor.org/info/rfc7451>.

[RFC8126] Cotton, M., Leiba, B., and T. Narten, "Guidelines for Writing an IANA Considerations Section in RFCs", BCP 26, RFC 8126, DOI 10.17487/RFC8126, June 2017, <https://www.rfc-editor.org/info/rfc8126>.

[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>.

[RFC8179] Bradner, S. and J. Contreras, "Intellectual Property Rights in IETF Technology", BCP 79, RFC 8179, DOI 10.17487/RFC8179, May 2017, <https://www.rfc-editor.org/info/rfc8179>.

Acknowledgements

The information described in the registry is based on a suggestion posted to the provreg mailing list by Jay Daley in August 2013. The need to update RFC 7451 was first proposed by Gavin Brown. Additional feedback for the update was provided by the following people: Gavin Brown, James Galvin, James Gould, Pawel Kowalik, Andrew Newton, Jasdip Singh.

Change Log

This section is to be removed before publishing as an RFC.

-00: Initial WG version.

-01: WG last call edits: added reference to RFC 2026 to clarify the status of Internet-Draft documents as extension specifications. "IESG approval" -> "IESG Approval" in Section 2.2.3. Added DEACTIVATE and REMOVE request processing to Section 2.2.3. Clarified use of IETF namespaces and "work in progress" specifications in Section 2.2.1. Clarified status values in Section 2.2.1. Updated acknowledgements.

-02: Changed intended status from Informational to BCP. Added text to address Independent Submission stream RFCs to Section 2.1. Noted that the value of the TLDs field (Section 2.2.1) can be "N/A". Added text to Section 2.2.1 to ensure that it’s consistent with Section 2.2.4. Updated examples to use "https" instead of "http". Updated acknowledgements.

-03: Updated to use BCP 14 keywords. Updated Section 2.1 and Section 2.1.1 to clarify ISE RFC use as a reference specification for an extension.

-04: Second WG last call edits: Updated "XML schemas, XML schema URIs, and XML namespace URIs" wording in Section 2.2.1. Noted that the value of "TLDs" can be "N/A" in Section 2.2.2. Updated "removed or deactivated" wording in Section 2.2.3. Changed RFC 3735 from an informative reference to a normative reference. Changed "IESG" to "IETF" in the "Registrant Name and Email Address" description in Section 2.2.1 and the example registration template in Section 2.2.2. Updated obsolete normative references to RFCs 3979 and 4879 (obsoleted by RFC 8179).

-05: Post-WG last call edits: changed "should not" to "SHOULD NOT" in the last sentence of Section 2.1.1. Changed "RFC 5730" to "STD 69" in Section 1 and added "STD 69" to Section 4.

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