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Registry Maintenance Notifications for the Extensible Provisioning Protocol (EPP) draft-sattler-epp-registry-maintenance-07

Abstract

This document describes an Extensible Provision Protocol (EPP) mapping for the Registry Maintenance Notifications used when Domain Name Registries will conduct a maintenance, and for retrieving these information.

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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This Internet-Draft will expire on February 8, 2019.

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1. Introduction

This document describes an Extensible Provision Protocol (EPP) [RFC5730] mapping for the Registry Maintenance Notifications used when Domain Name Registries will conduct a maintenance, and for retrieving these information.

1.1. Terminology and Definitions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC2119] when specified in their uppercase forms.

XML is case sensitive. Unless stated otherwise, XML specifications and examples provided in this document MUST be interpreted in the character case presented in order to develop a conforming implementation.

In examples, "C:" represents lines sent by a protocol client and "S:" represents lines returned by a protocol server. Indentation and white space in examples are provided only to illustrate element relationships and are not a REQUIRED feature of this protocol.

2. Object Attributes

2.1. Internationalized Domain Names

Names of affected hosts MUST be provided in Punycode according to [RFC5891].

2.2. Dates and Times

All dates and times attribute values MUST be expressed in Universal Coordinated Time (UTC) using the Gregorian calendar. The extended date-time form using upper case "T" and "Z" characters defined in ISO 8601 [RFC3339] MUST be used to represent date-time values.

2.3. Maintenance Elements

The <maint:maint> element describes a single domain name registry maintenance event during a specific time period. This element will be used at EPP <poll> messages and to extend the EPP <info> command.

For creating a new maintenance the attribute <maint:status> MUST be 'active', the attribute <maint:crDate> MUST be set and the attribute <maint:upDate> SHALL NOT be present.

For updating a maintenance the attribute <maint:status> MUST be 'active', the attributes <maint:crDate> and <maint:upDate> MUST be set.

For deleting a maintenance the attribute <maint:status> MUST be 'inactive', and the attributes <maint:crDate> and <maint:upDate> MUST be set.

<maint:id>
MUST be present and an UUID according [RFC4122] and SHALL NOT be changed if maintenance got updated or deleted. A human-readable description of the maintenance is identified via an OPTIONAL "msg" attribute.

<maint:systems>
MUST be present and contains one or more <maint:system> elements. The server SHOULD NOT list systems which are not affected by the maintenance.

<maint:system>
MUST be present at least once and is an element of <maint:name>, <maint:host> and <maint:impact>

<maint:name>
MUST be present and indicates the name of the affected system, such as 'EPP', 'WHOIS', 'DNS', 'Portal', etc.

<maint:host>
MUST be present and indicates the affected maintained system (host or IP address).
Hostname SHALL be Punycode according [RFC5891].
IPv4 addresses SHALL be dotted-decimal notation.
An example of this textual representation is "192.0.2.0".
IPv6 addresses SHALL be according [RFC5952].
An example of this textual representation is "2001:db8::1:0:0:1".

```
      <maint:impact>
        MUST be present and contains the impact level; values SHOULD
        either be 'blackout' or 'partial'

    <maint:environment>
      MUST be present and indicates the type of the affected system;
      values SHOULD either be 'production', 'ote', 'staging' or 'dev'

    <maint:start>
      MUST be present and indicates the start of the maintenance
      according ISO 8601 [RFC3339]
      Format: YYYY-MM-DDThh:mm:ssTZ

    <maint:end>
      MUST be present and indicates the end of the maintenance
      according ISO 8601 [RFC3339], and MUST be equal to or greater
      than <maint:start>
      Format: YYYY-MM-DDThh:mm:ssTZ

    <maint:reason>
      MUST be present and contains the reason behind the maintenance;
      values SHOULD either be 'planned' or 'emergency'

    <maint:detail>
      MAY be present and contains URI to detailed maintenance
      description

    <maint:description>
      MAY be present and provides a freeform description of the
      maintenance without having to create and traverse an external
      resource. The maximum length MUST NOT exceed 1024 bit.

    <maint:tlds>
      MUST be present and contains <maint:tld> elements

      <maint:tld>
        MUST be present and contains the affected top-level domain.
        Punycode encoded according [RFC5891]

    <maint:intervention>
      MUST be present and contains <maint:connection> and
      <maint:implementation>

      <maint:connection>
        MUST be present and indicates if a client needs to do something
        that is connection related, such as a reconnect. The value
        SHALL boolean.

      <maint:implementation>
        MUST be present and indicates if a client needs to do something
```

that is implementation related, such as a code change. The value SHALL be boolean.

<maint:status>
MUST be present and indicates the status of the maintenance.
The value SHALL be either 'active' or 'inactive'

<maint:crDate>
MUST be present and contains the creation date of the maintenance
according ISO 8601 [RFC3339]
Format: YYYY-MM-DDThh:mm:ssTZ

<maint:upDate>
MAY be present and contains the updated date of the maintenance
according ISO 8601 [RFC3339], and if set MUST be equal to or
greater than <main:crDate>
Format: YYYY-MM-DDThh:mm:ssTZ

3. EPP Command Mapping

A detailed description of the EPP syntax and semantics can be found in the EPP core protocol specification [RFC5730]. The command mappings described here are specifically for the use to notify of Registry Maintenances and Registry Maintenance object mapping.

3.1. EPP Query Commands

EPP [RFC5730] provides three commands to retrieve object information: <check> to determine if an object is known to the server, <info> to retrieve detailed information associated with an object, and <transfer> to retrieve object transfer status information.

3.1.1. EPP <check> Command

Available check semantics do not apply to maintenance objects, so there is no mapping defined for the EPP <check> command.

3.1.2. EPP <transfer> Command

Transfer semantics do not apply to maintenance objects, so there is no mapping defined for the EPP <transfer> command.

3.1.3. EPP <info> Command

EPP provides the <info> command that is used to retrieve registry maintenance information. In addition to the standard EPP command elements, the <info> command MUST contain a <maint:info> element that identifies the maintenance namespace. The <maint:info> element MUST contain a child element. It is either <maint:id> to retrieve a specific maintenance notification or <maint:list> to query all maintenance notifications.

Example <info> command with <maint:id> to get one specific maintenance:

```
C:<?xml version="1.0" encoding="UTF-8" standalone="no"?>
C:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
C:  <command>
C:    <info>
C:      <maint:info
C:        xmlns:maint="urn:ietf:params:xml:ns:maintenance-0.2">
C:        <maint:id>2e6df9b0-4092-4491-bcc8-9fb2166dcee6</maint:id>
C:      </maint:info>
C:    </info>
C:    <clTRID>ABC-12345</clTRID>
C:  </command>
C:</epp>
```

Example <info> response for one specific maintenance notification:

```
S:<?xml version="1.0" encoding="UTF-8"?>
S:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
S:   <response>
S:      <result code="1000">
S:         <msg>Command completed successfully</msg>
S:      </result>
S:      <resData>
S:        <maint:infData
S:          xmlns:maint="urn:ietf:params:xml:ns:maintenance-0.2">
S:          <maint:maint>
S:            <maint:id>2e6df9b0-4092-4491-bcc8-9fb2166dcee6
S:            </maint:id>
S:            <maint:systems>
S:              <maint:system>
S:                <maint:name>EPP</maint:name>
S:                <maint:host>epp.registry.example</maint:host>
S:                <maint:impact>blackout</maint:impact>
S:              </maint:system>
S:            </maint:systems>
S:            <maint:environment type="production"/>
S:            <maint:start>2017-09-30T06:00:00Z</maint:start>
S:            <maint:end>2017-09-30T14:25:57Z</maint:end>
S:            <maint:reason>planned</maint:reason>
S:            <maint:detail>
S:              https://www.registry.example/notice?123
S:            </maint:detail>
```

```
S:            <maint:description>free text</maint:description>
S:            <maint:tlds>
S:              <maint:tld>example</maint:tld>
S:              <maint:tld>test</maint:tld>
S:            </maint:tlds>
S:            <maint:intervention>
S:              <maint:connection>false</maint:connection>
S:              <maint:implementation>false</maint:implementation>
S:            </maint:intervention>
S:            <maint:status>active</maint:status>
S:            <maint:crDate>2017-03-08T22:10:00Z</maint:crDate>
S:          </maint:maint>
S:        </maint:infData>
S:      </resData>
S:      <trID>
S:         <clTRID>ABC-12345</clTRID>
S:         <svTRID>54321-XYZ</svTRID>
S:      </trID>
S:   </response>
S:</epp>
```

Example <info> command with <maint:list> to query all maintenances:

```
C:<?xml version="1.0" encoding="UTF-8" standalone="no"?>
C:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
C:  <command>
C:    <info>
C:      <maint:info
C:        xmlns:maint="urn:ietf:params:xml:ns:maintenance-0.2">
C:        <maint:list/>
C:      </maint:info>
C:    </info>
C:    <clTRID>ABC-12345</clTRID>
C:  </command>
C:</epp>
```

Example <info> response querying all maintenances:

```
S:<?xml version="1.0" encoding="UTF-8"?>
S:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
S:   <response>
S:      <result code="1000">
S:         <msg>Command completed successfully</msg>
S:      </result>
S:      <resData>
S:        <maint:infData
S:          xmlns:maint="urn:ietf:params:xml:ns:maintenance-0.2">
```

```
S:          <maint:list>
S:            <maint:maint>
S:              <maint:id>2e6df9b0-4092-4491-bcc8-9fb2166dcee6
S:              </maint:id>
S:              <maint:start>2017-04-30T06:00:00Z</maint:start>
S:              <maint:end>2017-04-30T07:00:00Z</maint:end>
S:              <maint:crDate>2017-02-08T22:10:00Z</maint:crDate>
S:            </maint:maint>
S:            <maint:maint>
S:              <maint:id>91e9dabf-c4e9-4c19-a56c-78e3e89c2e2f
S:              </maint:id>
S:              <maint:start>2017-06-15T04:30:00Z</maint:start>
S:              <maint:end>2017-06-15T05:30:00Z</maint:end>
S:              <maint:crDate>2017-02-08T22:10:00Z</maint:crDate>
S:              <maint:upDate>2017-03-08T20:11:00Z</maint:upDate>
S:            </maint:maint>
S:          </maint:list>
S:        </maint:infData>
S:      </resData>
S:      <trID>
S:         <clTRID>ABC-12345</clTRID>
S:         <svTRID>54321-XYZ</svTRID>
S:      </trID>
S:   </response>
S:</epp>
```

3.1.4. EPP <poll> Command

The EPP <poll> command and response is defined in Section 2.9.2.3 of [RFC5730]. The Registry Maintenance Notification is included in the EPP <poll> response of [RFC5730].

For the Registry Maintenance Notification, there are three types of poll messages. The poll messages apply whenever the domain name registry creates, updates or deletes a maintenance. In the case of a Registry Maintenance specific message, a <maint:infData> element will be included within the <resData> element of the standard <poll> response.

The <maint:infData> element will include a reference to the Registry Maintenance namespace. EPP data contained within the <maint:infData> element is formatted according to the maintenance-poll schema.

Example <poll> command:

```
C:<?xml version="1.0" encoding="UTF-8" standalone="no"?>
C:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
C:  <command>
C:  <poll op="req"/>
C:    <clTRID>ABC-12345</clTRID>
C:  </command>
C:</epp>
```

Example <poll> response with the Registry Maintenance poll message:

```
S:<?xml version="1.0" encoding="UTF-8" standalone="no"?>
S:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
S:  <response>
S:    <result code="1301">
S:      <msg>Command completed successfully; ack to dequeue</msg>
S:    </result>
S:  <msgQ count="1" id="12345">
S:    <qDate>2017-02-08T22:10:00Z</qDate>
S:    <msg>Registry Maintenance Notification</msg>
S:  </msgQ>
S:  <resData>
S:    <maint:infData
S:      xmlns:maint="urn:ietf:params:xml:ns:maintenance-0.2">
S:      <maint:maint>
S:        <maint:id>2e6df9b0-4092-4491-bcc8-9fb2166dcee6</maint:id>
S:        <maint:systems>
S:          <maint:system>
S:            <maint:name>EPP</maint:name>
S:            <maint:host>epp.registry.example</maint:host>
S:            <maint:impact>blackout</maint:impact>
S:          </maint:system>
S:        </maint:systems>
S:        <maint:environment type="production"/>
S:        <maint:start>2017-10-30T06:00:00Z</maint:start>
S:        <maint:end>2017-10-30T14:25:57Z</maint:end>
S:        <maint:reason>planned</maint:reason>
S:        <maint:detail>
S:          https://www.registry.example/notice?123
S:        </maint:detail>
S:        <maint:tlds>
S:          <maint:tld>example</maint:tld>
S:          <maint:tld>test</maint:tld>
S:        </maint:tlds>
S:        <maint:intervention>
S:          <maint:connection>false</maint:connection>
S:          <maint:implementation>false</maint:implementation>
S:        </maint:intervention>
```

```
S:        <maint:status>active</maint:status>
S:        <maint:crDate>2017-02-08T22:10:00Z</maint:crDate>
S:      </maint:maint>
S:    </maint:infData>
S:  </resData>
S:  <trID>
S:    <clTRID>ABC-12345</clTRID>
S:    <svTRID>54321-XYZ</svTRID>
S:  </trID>
S:  </response>
S:</epp>
```

3.2. EPP Transform Commands

EPP provides five commands to transform objects: <create> to create an instance of an object, <delete> to delete an instance of an object, <renew> to extend the validity period of an object, <transfer> to manage object sponsorship changes, and <update> to change information associated with an object.

3.2.1. EPP <create> Command

Create semantics do not apply to maintenance objects, so there is no mapping defined for the EPP <create> command.

3.2.2. EPP <delete> Command

Delete semantics do not apply to maintenance objects, so there is no mapping defined for the EPP <delete> command.

3.2.3. EPP <renew> Command

Renew semantics do not apply to maintenance objects, so there is no mapping defined for the EPP <renew> command.

3.2.4. EPP <transfer> Command

Transfer semantics do not apply to maintenance objects, so there is no mapping defined for the EPP <transfer> command.

3.2.5. EPP <update> Command

Update semantics do not apply to maintenance objects, so there is no mapping defined for the EPP <update> command.

4. Formal Syntax

One schema is presented here that is the EPP Registry Maintenance schema.

The formal syntax presented here is a complete schema representation of the object mapping suitable for automated validation of EPP XML instances. The BEGIN and END tags are not part of the schema; they are used to note the beginning and ending of the schema for URI registration purposes.

4.1. Registry Maintenance EPP Mapping Schema

```
BEGIN
<?xml version="1.0" encoding="UTF-8"?>
  <schema targetNamespace="urn:ietf:params:xml:ns:maintenance-0.2"
    xmlns:eppcom="urn:ietf:params:xml:ns:eppcom-1.0"
    xmlns:epp="urn:ietf:params:xml:ns:epp-1.0"
    xmlns:maint="urn:ietf:params:xml:ns:maintenance-0.2"
    xmlns="http://www.w3.org/2001/XMLSchema"
    elementFormDefault="qualified">

  <!--
  Import common element types
  -->
  <import namespace="urn:ietf:params:xml:ns:eppcom-1.0"/>
  <import namespace="urn:ietf:params:xml:ns:epp-1.0"/>

  <annotation>
    <documentation>
      Extensible Provisioning Protocol v1.0
      Maintenance Mapping Schema.
    </documentation>
  </annotation>

  <!--
  Child elements found in EPP commands.
  -->
  <element name="info" type="maint:infoType"/>

  <!--
   Child elements of the <info> command.
  -->
  <complexType name="infoType">
    <sequence>
      <choice>
        <element name="list">
          <complexType/>
```

```
          </element>
          <element name="id" type="maint:idType"/>
        </choice>
      </sequence>
    </complexType>

    <!--
    Human-readable text may be expresses the maintenance
    -->
    <complexType name="idType">
      <simpleContent>
        <extension base="normalizedString">
          <attribute name="msg" type="token"/>
        </extension>
      </simpleContent>
    </complexType>

    <!--
     Info Response element
    -->
    <element name="infData" type="maint:infDataType"/>

    <!--
     <info> response elements.
    -->
    <complexType name="infDataType">
      <choice>
        <element name="list" type="maint:listDataType"/>
        <element name="maint" type="maint:maintDataType"/>
      </choice>
    </complexType>

    <!--
     Attributes associated with the list info response
    -->
    <complexType name="listDataType">
      <sequence>
        <element name="maint" type="maint:maintItemType"
         minOccurs="0" maxOccurs="unbounded"/>
      </sequence>
    </complexType>

    <!--
     Attributes associated with the list item info response
    -->
    <complexType name="maintItemType">
      <sequence>
        <element name="id" type="maint:idType"/>
        <element name="start" type="dateTime" minOccurs="0"/>
```

```
        <element name="end" type="dateTime" minOccurs="0"/>
        <element name="crDate" type="dateTime"/>
        <element name="upDate" type="dateTime" minOccurs="0"/>
      </sequence>
    </complexType>
```

```
    <!--
     Attributes associated with the maintenance info response
    -->
    <complexType name="maintDataType">
      <sequence>
        <element name="id" type="maint:idType"/>
        <element name="systems" type="maint:systemsType"/>
        <element name="environment" type="maint:envType"/>
        <element name="start" type="dateTime"/>
        <element name="end" type="dateTime"/>
        <element name="reason" type="maint:reasonEnum"/>
        <element name="detail" type="token" minOccurs="0"/>
        <element name="description" type="maint:descriptionType"
         minOccurs="0"/>
        <element name="tlds" type="maint:tldsType"/>
        <element name="intervention" type="maint:interventionType"/>
        <element name="status" type="maint:statusEnum"/>
        <element name="crDate" type="dateTime"/>
        <element name="upDate" type="dateTime" minOccurs="0"/>
      </sequence>
    </complexType>

    <!--
     systems element
    -->
    <complexType name="systemsType">
      <sequence>
        <element name="system" type="maint:systemType"
         maxOccurs="unbounded"/>
      </sequence>
    </complexType>

    <!--
     Enumerated list of impacts
    -->
    <simpleType name="impactEnum">
      <restriction base="token">
        <enumeration value="partial"/>
        <enumeration value="blackout"/>
      </restriction>
    </simpleType>

    <!--
     description element
    -->
    <complexType name="descriptionType">
      <restriction base="string">
        <maxLength value="1024"/>
      </restriction>
```

```
    </complexType>

    <!--
     system element
    -->
```

```
    <complexType name="systemType">
      <sequence>
        <element name="name" type="token"/>
        <element name="host" type="token"/>
        <element name="impact" type="maint:impactEnum"/>
      </sequence>
    </complexType>

    <!--
     Enumerated list of environments
    -->
    <simpleType name="envEnum">
      <restriction base="token">
        <enumeration value="production"/>
        <enumeration value="ote"/>
        <enumeration value="staging"/>
        <enumeration value="dev"/>
        <enumeration value="custom"/>
      </restriction>
    </simpleType>

    <!--
     environment element
    -->
    <complexType name="envType">
      <simpleContent>
        <extension base="token">
          <attribute name="type" type="maint:envEnum" use="required"/>
          <attribute name="name" type="token" use="optional"/>
        </extension>
      </simpleContent>
    </complexType>

    <!--
     Enumerated list of reasons
    -->
    <simpleType name="reasonEnum">
      <restriction base="token">
        <enumeration value="planned"/>
        <enumeration value="emergency"/>
      </restriction>
    </simpleType>

    <!--
     tlds element
    -->
    <complexType name="tldsType">
      <sequence>
        <element name="tld" type="eppcom:labelType"
```

```
          maxOccurs="unbounded"/>
        </sequence>
      </complexType>
```

```
    <!--
     intervention element
    -->
    <complexType name="interventionType">
      <sequence>
        <element name="connection" type="boolean"/>
        <element name="implementation" type="boolean"/>
      </sequence>
    </complexType>

    <!--
     Enumerated list of statuses
    -->
    <simpleType name="statusEnum">
      <restriction base="token">
        <enumeration value="active"/>
        <enumeration value="deleted"/>
      </restriction>
    </simpleType>

    <!--
     End of schema.
    -->
    </schema>
   END
```

5. IANA Considerations

TBD

6. Security Considerations

The mapping extensions described in this document do not provide any security services beyond those described by EPP [RFC5730] and protocol layers used by EPP. The security considerations described in these other specifications apply to this specification as well.

7. Implementation Status

Note to RFC Editor: Please remove this section and the reference to [RFC7942] before publication.

This section records the status of known implementations of the protocol defined by this specification at the time of posting of this Internet-Draft, and is based on a proposal described in [RFC7942]. The description of implementations in this section is intended to assist the IETF in its decision processes in progressing drafts to RFCs. Please note that the listing of any individual implementation here does not imply endorsement by the IETF. Furthermore, no effort has been spent to verify the information presented here that was supplied by IETF contributors. This is not intended as, and must not be construed to be, a catalog of available implementations or their features. Readers are advised to note that other implementations may exist.

According to [RFC7942], "this will allow reviewers and working groups to assign due consideration to documents that have the benefit of running code, which may serve as evidence of valuable experimentation and feedback that have made the implemented protocols more mature. It is up to the individual working groups to use this information as they see fit".

Add implementation details once available.

8. References

8.1. Normative References

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

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

8.2. Informative References

[RFC3339] Klyne, G., Ed. and C. Newman, "Date and Time on the Internet: Timestamps", RFC 3339, July 2002, <https://www.rfc-editor.org/info/rfc3339>.

[RFC5891] Klensin, J., "Internationalized Domain Names in Applications (IDNA): Protocol", RFC 5891, August 2010, <https://www.rfc-editor.org/info/rfc5891>.

[RFC4122] Leach, P., Mealling, M. and Salz, R., "A Universally Unique IDentifier (UUID) URN Namespace", RFC 4122, July 2015, <https://www.rfc-editor.org/info/rfc4122>.

[RFC5952] Kawamura, S. and Kawashima, M., "A Recommendation for IPv6 Address Text Representation", RFC 5952, August 2010, <https://www.rfc-editor.org/info/rfc5952>.

[RFC7942] Sheffer, Y. and Farrel, A., "Improving Awareness of Running Code: The Implementation Status Section", RFC 7942, July 2016, <https://www.rfc-editor.org/info/rfc7942>.

Appendix A. Change History

A.1. Change from 00 to 01

Removed JSON Schema. Clarified unique id with UUID. Added Common Data Structures for better explanation. Fixed EPP poll response example. Added und fixed References.

A.2. Change from 01 to 02

Clarified host field. Added TLDs to Common Data Structure. Added Internationalization Considerations. Changed authors address and contact details.

A.3. Change from 02 to 03

Added date-time Values to Internationalization Considerations. Sorted Terminology and Definitions alphabetically. Changed start and end date-time. Changed Reference URI to HTTPS.

A.4. Change from 03 to 04

Added Acknowledgements. Clarified UUID field to be not changed at all Clarified environment field with production, ote, staging and dev. Clarified connection and implementation fields. Fixed writing of systems field. Removed author's private address. Moved this draft from Experimental to Standard Track.

A.5. Change from 04 to 05

Changed title of this draft to be more specific. Added Change Log. Split References into Normative and Informative References. Clarified Common Data Types. Rephrased Abstract and Introduction. Added Implementation Status Section.

A.6. Change from 05 to 06

Added IANA Considerations. Changed URIs from http to https. Added new main Section 4. EPP Command Mapping. Added new JSON field purpose for announce, change or cancel of a maintenance notification.

A.7. Change from 06 to 07

Fixed typo in Section 3.4. and added missing comma in the example of Section 4.1. Added the field specification to help facilitate the adoption of this document. Changed possible purposes to create, update and delete to be closer to the EPP syntax. Cleaned whitespaces. Updated Acknowledgements.

A.8. Change from 07 to EPPMAINT 00

Removed JSON payload in <poll> message and switched to specific EPP <poll> message. Extended EPP <info> command to provide details on specific maintenance or list all maintenances.

A.9. Change from EPPMAINT 00 to EPPMAINT 01

Fixed typos and added missing change log text for EPPMAINT 00. Added BEGIN and END flag to XML schema. Removed Character Encoding Section. Fixed indentation in Section 2.3.

A.10. Change from EPPMAINT 01 to EPPMAINT 02

Changed the element <maint:remark> to <maint:detail>. Fixed indentation in Section 4.1. Cleaned up whitespaces.

A.11. Change from EPPMAINT 02 to EPPMAINT 03

Changed reference from RFC3492 to RFC5891. Fixed minor typos. Added <maint:description> for a freeform maintenance description with a maximum length of 1024. Added optional "msg" attribute to <maint:id> and <maint:maint>.

A.12. Change from EPPMAINT 03 to EPPMAINT 04

Fixed minor typos and added one acknowledgement.

A.13. Change from EPPMAINT 04 to EPPMAINT 05

Added missing whitespace. Fixed dates in examples. Added clarification that <maint:end> must be equal to or greater than <maint:start>, same applies for <maint:upDate> and <maint:crDate> if set.

A.14. Change from EPPMAINT 05 to EPPMAINT 06

Added Roger Carney and Jody Kolker as Co-Authors to this draft.

A.15. Change from EPPMAINT 06 to EPPMAINT 07

Changed Acknowledgements.

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