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Change Extension Mapping for the Extensible Provisioning Protocol
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Abstract

This document describes an Extensible Provisioning Protocol (EPP) extension of the domain name mapping and the host mapping to link transform commands to a change request described in the EPP Change Mapping.

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 16 September 2026.

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1. Introduction

This document describes the change extension mapping for version 1.0 of the Extensible Provisioning Protocol (EPP). This mapping, an extension of the domain name mapping described in [7], and an extension of the host mapping described in [8], is specified using the Extensible Markup Language (XML) 1.0 as described in [1] and XML Schema notation as described in [2] and [3].

This document describes an Extensible Provisioning Protocol (EPP) extension of the domain name mapping described in [7] and the host mapping described in [8] to link transform commands to a change request described in the EPP Change Mapping - Add link TBD.

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 [4] when, and only when, they appear in all capitals, as shown here.

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 is provided only to illustrate element relationships and is not a REQUIRED feature of this specification.

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

The XML namespace prefix "changeExt" is used for the namespace "http://www.verisign-grs.com/epp/changeExt-1.0", but implementations MUST NOT depend on it; instead, they should employ a proper namespace-aware XML parser and serializer to interpret and output the XML documents.

2. Object Attributes

This extension adds additional elements to the domain name mapping described in [7] and the host mapping described in [8]. Only new elements are described here.

2.1. Request Identifier

The request identifier is used to identify the target Change Request object that the EPP operation is intended for. The request identifier uses the <changeExt:requestId> element, and is defined in section 2.1 of the EPP Change Mapping - Add link TBD.

3. EPP Command Mapping

A detailed description of the EPP syntax and semantics can be found in the EPP core protocol specification [6].

3.1. EPP Query Commands

EPP 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.

The syntax of the Change extension is identical for all types of EPP commands.

3.1.1. EPP <check> Command

This extension does not add any elements to the EPP <check> command or <check> response described in the EPP domain mapping [7] and the EPP host mapping [8].

3.1.2. EPP <info> Command

This extension does not add any elements to the EPP <info> command or <info> response described in the EPP domain mapping [7] and the EPP host mapping [8].

3.1.3. EPP <transfer> Command

This extension does not add any elements to the EPP <transfer> query command or <transfer> query response described in the EPP domain mapping [7] and the EPP host mapping [8].

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.

The syntax of the Change extension is identical for all types of EPP commands. Please see the <create> Command, in section 3.2.1, for a detailed description of command syntax.

3.2.1. EPP <create> Command

This extension defines additional elements for the EPP <create> command.

The EPP <create> command provides a transform operation that allows a client to create a domain or host object. In addition to the EPP command elements described in [EPP-D] and [EPP-H], the command MAY contain an <extension> element. The <extension> element MUST contain a child <changeExt:changeExt> element that contains the following child elements:

* A <changeExt:requestID> element that MUST contain a request identifier, defined in section 2.1, specifying the target Change Request object.

Example <create> 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:    <create>
C:      <domain:create
C:       xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
C:        <domain:name>example</domain:name>
C:        <domain:period unit="y">1</domain:period>
C:        <domain:ns>
C:          <domain:hostObj>ns1.example.com</domain:hostObj>
C:          <domain:hostObj>ns1.example.net</domain:hostObj>
C:        </domain:ns>
C:        <domain:authInfo>
C:          <domain:pw>2fooBAR</domain:pw>
C:        </domain:authInfo>
C:      </domain:create>
C:    </create>
C:    <extension>
C:      <changeExt:changeExt
C:       xmlns:changeExt="http://www.verisign-grs.com/epp/changeExt-1.0">
C:         <changeExt:requestID>tk421</changeExt:requestID>
C:      </changeExt:changeExt>
C:    </extension>
C:    <clTRID>ABC-12345</clTRID>
C:  </command>
C:</epp>
```

Figure 1

3.2.2. EPP <create> Response

When a <create> command has been processed successfully, the server MUST respond with an EPP response with no <resData> element.

Example <create> response:

```
S:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0">
S:  <response>
S:    <result code="1001">
S:      <msg>Command completed successfully; action pending</msg>
S:    </result>
S:    <trID>
S:      <clTRID>ABC-12345</clTRID>
S:      <svTRID>SRV-43659</svTRID>
S:    </trID>
S:  </response>
S:</epp>
```

Figure 2

An EPP error response MUST be returned if a <create> command can not be processed for any reason

TBD - The response has a pending action and the server MUST notify the client when offline processing of the action has been completed using the Change Request Poll message as defined by the EPP Change Mapping - Add link TBD.

3.2.3. EPP <delete> Command

(see section 3.2.1)

3.2.4. EPP <delete> Response

(see section 3.2.2)

3.2.5. EPP <renew> Command

(see section 3.2.1)

3.2.6. EPP <renew> Response

(see section 3.2.2)

3.2.7. EPP <transfer> Command

(see section 3.2.1)

3.2.8. EPP <transfer> Response

(see section 3.2.2)

3.2.9. EPP <update> Command

(see section 3.2.1)

3.2.10. EPP <update> Response

(see section 3.2.2)

4. Formal Syntax

An EPP object mapping is specified in XML Schema notation. 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.

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

  <import namespace="urn:ietf:params:xml:ns:eppcom-1.0"
    schemaLocation="eppcom-1.0.xsd"/>
  <import namespace="urn:ietf:params:xml:ns:epp-1.0"
    schemaLocation="epp-1.0.xsd"/>

  <annotation>
    <documentation>
      Extensible Provisioning Protocol v1.0
      Change extension schema
    </documentation>
  </annotation>

  <element name="changeExt" type="changeExt:changeExtType"/>

  <complexType name="changeExtType">
    <sequence>
      <element name="requestID" type="epp:trIDStringType"/>
    </sequence>
  </complexType>

</schema>
END
```

5. IANA Considerations

5.1. XML Namespace

This document uses URNs to describe XML namespaces and XML schemas conforming to a registry mechanism described in [5]. The following URI assignment has been made by IANA:

Registration request for the Change Extension namespace:

URI: http://www.verisign-grs.com/epp/changeExt-1.0
Registrant Contact: VeriSign Inc., <epp-registry@verisign.com>
XML: None. Namespace URIs do not represent an XML specification.

Registration request for the Change Extension XML Schema:

URI: http://www.verisign-grs.com/epp/changeExt-1.0
Registrant Contact: VeriSign Inc., <epp-registry@verisign.com>
XML: See the "Formal Syntax" section of this document.

5.2. EPP Extension Registry

The EPP extension described in this document has been registered by IANA in the "Extensions for the Extensible Provisioning Protocol (EPP)" registry described in [9]. The details of the registration are as follows:

Name of Extension: "Change Extension Mapping for the Extensible Provisioning Protocol"
Document Status: Informational
Reference: (insert reference to RFC version of this document)
Registrant Name and Email Address: VeriSign Inc., <epp-registry@verisign.com>
TLDs: Any
IPR Disclosure: None
Status: Active
Notes: None

6. Security Considerations

The mapping extensions described in this document do not provide any security services beyond those described by EPP [6], the EPP domain name mapping [7], the EPP host mapping [8] and protocol layers used by EPP. The security considerations described in these other specifications apply to this specification as well.

7. References

7.1. Normative References

[1] Bray, T., Paoli, J., Sperberg-McQueen, C., Maler, E., and F. Yergeau, ""Extensible Markup Language (XML) 1.0 (Third Edition)", World Wide Web Consortium FirstEdition REC-xml-20040204", February 2004, <http://www.w3.org/TR/2004/REC-xml-20040204>.

[2] Thompson, H., Beech, D., Maloney, M., and N. Mendelsohn, ""XML Schema Part 1: Structures Second Edition", World Wide Web Consortium Recommendation REC-xmlschema-1-20041028", October 2004, <http://www.w3.org/TR/2004/REC-xmlschema-1-20041028>.

[3] Biron, P. and A. Malhotra, ""XML Schema Part 2: Datatypes Second Edition", World Wide Web Consortium Recommendation REC-xmlschema-2-20041028", October 2004, <http://www.w3.org/TR/2004/REC-xmlschema-2-20041028>.

[4] Best Current Practice 14, <https://www.rfc-editor.org/info/bcp14>. At the time of writing, this BCP comprises the following:

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>.

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>.

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

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

[7] 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>.

[8] 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>.

7.2. Informative References

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

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