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**Validate Mapping for the Extensible Provisioning Protocol (EPP)
draft-ietf-regext-validate-00**

Abstract

This document describes an Extensible Provisioning Protocol (EPP) mapping for the validation of contact and eligibility data.

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[1.](#) Introduction

This document describes a Validate mapping for version 1.0 of the Extensible Provisioning Protocol (EPP) [[RFC5730](#)]. This EPP mapping specifies a flexible schema by which EPP clients and servers can reliably validate contact and eligibility data.

With the increased number of restrictions on contacts and required data points (license, ids, etc.) to register a domain name, a way to validate the data points prior to issuing a transform command is becoming more important.

[1.1.](#) Conventions Used in This Document

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 [RFC 2119](#) [[RFC2119](#)].

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

A EPP validation object has attributes and associated values that can be viewed by the client. This section describes each attribute type in detail.

2.1. Key Value

Key Value provides a flexible mechanism to share data between the client and the server. The `<validate:kv>` element defines the data, with two required simple attributes, key and value, and an optional `contactType` attribute for specificity in the response, more details below.

- o An example `<validate:kv key="VATID" value="0123456789"/>`.
- o An example `<validate:kv contactType="Admin" key="contact:cc" value="Invalid country code for admin contact, must be MX."/>`.

3. EPP Command Mapping

A detailed description of the EPP syntax and semantics can be found in [RFC5730]. The command mappings described here are specifically for the Validate Extension

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.

3.1.1. EPP `<check>` Command

The EPP `<check>` command is used to validate a list of contact information. The `<check>` command MUST contain a `<validate:check>` element that identifies the validate namespace. The `<validate:check>` element contains the following child elements:

- o one or more <validate:contact> element(s) for each contact that is to be validated that contains the contact type of the contact to be validated.

The <validate:contact> element MUST contain the following child elements:

- o one <validate:cd> element.
- o zero or more <validate:kv> elements.

The <validate:cd> element MUST contain the following child elements:

- o one <validate:id> element.
- o an OPTIONAL <validate:postalInfo> element.
- o an OPTIONAL <validate:voice> element.
- o an OPTIONAL <validate:fax> element.
- o an OPTIONAL <validate:email> element.
- o an OPTIONAL <validate:authInfo> element.
- o an OPTIONAL <validate:disclose> element.

The following is an example <check> command.

```
C:<?xml version="1.0" encoding="UTF-8" standalone="no"?>
C:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
C:  xmlns:validate="urn:ietf:params:xml:ns:validate-0.1"
C:  xmlns:contact="urn:ietf:params:xml:ns:contact-1.0">
C:  <command>
C:    <check>
C:      <validate:check>
C:        <validate:contact contactType="registrant" tld="COM">
C:          <validate:cd>
C:            <validate:id>sh8013</validate:id>
C:            <validate:postalInfo type="int">
C:              <contact:name>John Doe</contact:name>
C:              <contact:org>Example Inc.</contact:org>
C:              <contact:addr>
C:                <contact:street>123 Example Dr.</contact:street>
C:                <contact:street>Suite 100</contact:street>
C:                <contact:city>Dulles</contact:city>
C:                <contact:sp>VA</contact:sp>
C:                <contact:pc>20166-6503</contact:pc>
C:                <contact:cc>US</contact:cc>
C:              </contact:addr>
C:            </validate:postalInfo>
C:            <validate:voice>+1.7035555555</validate:voice>
C:            <validate:fax>+1.7035555556</validate:fax>
C:            <validate:email>jdoe@example.com</validate:email>
C:            <validate:authInfo>
```



```
C:      <contact:pw>2fooBAR</contact:pw>
C:      </validate:authInfo>
C:      <validate:disclose flag="0">
C:          <contact:voice/>
C:          <contact:email/>
C:      </validate:disclose>
C:      </validate:cd>
C:      <validate:kv key="VAT" value="1234567890"/>
C:  </validate:contact>
C:  <validate:contact contactType="tech" tld="COM">
C:      <validate:cd>
C:          <validate:id>sh8013</validate:id>
C:      </validate:cd>
C:  </validate:contact>
C:  <validate:contact contactType="admin" tld="COM">
C:      <validate:cd>
C:          <validate:id>sh8014</validate:id>
C:          <validate:postalInfo type="int">
C:              <contact:name>John Doe</contact:name>
C:              <contact:org>Example Inc.</contact:org>
C:              <contact:addr>
C:                  <contact:street>123 Example Dr.</contact:street>
C:                  <contact:street>Suite 100</contact:street>
C:                  <contact:city>Dulles</contact:city>
C:                  <contact:sp>VA</contact:sp>
C:                  <contact:pc>20166-6503</contact:pc>
C:                  <contact:cc>US</contact:cc>
C:              </contact:addr>
C:          </validate:postalInfo>
C:          <validate:voice>+1.7035555555</validate:voice>
C:          <validate:fax>+1.7035555556</validate:fax>
C:          <validate:email>jdoe@example.com</validate:email>
C:          <validate:authInfo>
C:              <contact:pw>2fooBAR</contact:pw>
C:          </validate:authInfo>
C:          <validate:disclose flag="0">
C:              <contact:voice/>
C:              <contact:email/>
C:          </validate:disclose>
C:      </validate:cd>
C:  </validate:contact>
C:  <validate:contact contactType="billing" tld="COM">
C:      <validate:cd>
C:          <validate:id>sh8014</validate:id>
C:      </validate:cd>
C:  </validate:contact>
C: </validate:check>
C: </check>
```



```
C:    <clTRID>ABC-12345</clTRID>
C:  </command>
C:</epp>
```

When a <check> command has been processed successfully, the EPP <resData> element MUST contain a child <validate:chkData> element that identifies the validate namespace. The <validate:chkData> element MUST contain a <validate:cd> element for each <validate:check> element contained in the <check> command. The <validate:cd> element MUST contain the following child elements:

- o one <validate:id> element.
- o one <validate:response> element.
- o zero or more <validate:kv> elements.

The following is an example of the <check> response.

```
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="1000">
S:      <msg>Command completed successfully</msg>
S:    </result>
S:    <resData>
S:      <validate:chkData
S:        xmlns:validate="urn:ietf:params:xml:ns:validate-0.1">
S:        <validate:cd>
S:          <validate:id>sh8013</validate:id>
S:          <validate:response>1000</validate:response>
S:        </validate:cd>
S:        <validate:cd>
S:          <validate:id>sh8014</validate:id>
S:          <validate:response>2306</validate:response>
S:          <validate:kv key="contact:city" value="City not valid
S:            for state."/>
S:          <validate:kv contactType="Admin" key="contact:cc"
S:            value="Invalid country code for admin, must be mx."/>
S:          <validate:kv contactType="Billing" key="VAT" value="VAT
S:            required for Billing contact."/>
S:        </validate:cd>
S:      </validate:chkData>
S:    </resData>
S:    <trID>
S:      <clTRID>ABC-12345</clTRID>
S:      <svTRID>54321-ZYX</svTRID>
S:    </trID>
S:  </response>
S:</epp>
```


3.1.2. EPP <info> Command

Info semantics do not apply to validate objects, so there is no mapping defined for the EPP <info> command.

3.1.3. EPP <transfer> Command

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

3.2. EPP Transform Commands

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

3.2.1. EPP <create> Command

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

3.2.2. EPP <delete> Command

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

3.2.3. EPP <renew> Command

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

3.2.4. EPP <transfer> Command

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

3.2.5. EPP <update> Command

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

4. Formal Syntax

One schema is presented here that is the EPP Validate Extension 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.](#) Validate Extension Schema

BEGIN

```
<?xml version="1.0" encoding="UTF-8"?>
<schema
  targetNamespace="urn:ietf:params:xml:ns:validate-0.1"
  xmlns:validate="urn:ietf:params:xml:ns:validate-0.1"
  xmlns:epp="urn:ietf:params:xml:ns:epp-1.0"
  xmlns:eppcom="urn:ietf:params:xml:ns:eppcom-1.0"
  xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
  xmlns="http://www.w3.org/2001/XMLSchema"
  elementFormDefault="qualified">

  <annotation>
    <documentation>
      Extensible Provisioning Protocol v1.0
      Validate Object Extension
    </documentation>
  </annotation>

  <!-- Import common element types. -->
  <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"/>
  <import namespace="urn:ietf:params:xml:ns:contact-1.0"
    schemaLocation="contact-1.0.xsd"/>

  <!--
  Child elements of the <check> command.
  -->
  <element name="check" type="validate:checkType"/>

  <complexType name="checkType">
    <sequence>
      <element name="contact"
        type="validate:validateContactType"
        maxOccurs="unbounded" />
    </sequence>
  </complexType>

  <complexType name="validateContactType">
```



```
<sequence>
  <element name="cd"
    type="validate:checkDataType"/>
  <element name="kv"
    type="validate:kvType" minOccurs="0"
    maxOccurs="unbounded" />
</sequence>
<attribute name="contactType" type="eppcom:labelType"
  use="required"/>
<attribute name="tld"
  type="eppcom:labelType" use="required"/>
</complexType>
```

```
<complexType name="checkDataType">
  <sequence>
    <element name="id"
      type="eppcom:clIDType" />
    <element name="postalInfo"
      type="contact:postalInfoType"
      minOccurs="0" maxOccurs="2" />
    <element name="voice"
      type="contact:e164Type" minOccurs="0" />
    <element name="fax"
      type="contact:e164Type" minOccurs="0" />
    <element name="email"
      type="eppcom:minTokenType" minOccurs="0"/>
    <element name="authInfo"
      type="contact:authInfoType"
      minOccurs="0"/>
    <element name="disclose"
      type="contact:discloseType"
      minOccurs="0" />
  </sequence>
</complexType>
```

```
<complexType name="kvType">
  <attribute name="contactType"
    type="eppcom:labelType" use="optional" />
  <attribute name="key"
    type="validate:keyType" use="required" />
  <attribute name="value"
    type="validate:valueType" use="required" />
</complexType>
```

```
<simpleType name="keyType">
  <restriction base="token">
    <minLength value="1" />
  </restriction>
```



```
</simpleType>

<simpleType name="valueType">
  <restriction base="token">
    <minLength value="0" />
  </restriction>
</simpleType>

<!--
Child elements of the <check> response.
-->
  <element name="chkData" type="validate:chkDataType" />

  <complexType name="chkDataType">
    <sequence>
      <element name="cd"
        type="validate:resCreateDataType" maxOccurs="unbounded" />
    </sequence>
  </complexType>

  <complexType name="resCreateDataType">
    <sequence>
      <element name="id"
        type="eppcom:clIDType" />
      <element name="response"
        type="epp:resultCodeType" />
      <element name="kv"
        type="validate:kvType"
        minOccurs="0" maxOccurs="unbounded" />
    </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 [[RFC3688](https://tools.ietf.org/html/rfc3688)]. The following URI assignment is requested of IANA:

URI: ietf:params:xml:ns:validate-1.0

Registrant Contact: See the "Author's Address" section of this document.

XML: See the "Formal Syntax" section of this document.

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. Acknowledgements

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8. Change History

8.1. Change from 00 to 01

After review and broad feedback, extensive changes have been made transforming the original document from a standalone extension command to an extension using the <check> command and response framework.

8.2. Change from carney-regext 01 to ietf-regext 00

Updated miscellaneous verbiage to reflect the change from an extension and changed to ietf naming as REGEXT WG will assume this work.

9. Normative References

- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/RFC2119, March 1997, <<http://www.rfc-editor.org/info/rfc2119>>.
- [RFC3688] Mealling, M., "The IETF XML Registry", [BCP 81](#), [RFC 3688](#), DOI 10.17487/RFC3688, January 2004, <<http://www.rfc-editor.org/info/rfc3688>>.
- [RFC5730] Hollenbeck, S., "Extensible Provisioning Protocol (EPP)", STD 69, [RFC 5730](#), DOI 10.17487/RFC5730, August 2009, <<http://www.rfc-editor.org/info/rfc5730>>.

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