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Domain Expiry Synchronisation Extension Mapping for EPP



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Revision History

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Document Purpose

This document describes an Extensible Provisioning Protocol (EPP) extension mapping for the synchronisation of domain name registration period expiration dates. Specified in XML, this mapping extends the EPP domain name mapping to provide features that allow a protocol client to end a domain name registration period on a specific date and time.

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# Introduction

This document describes an extension mapping for version 1.0 of the Extensible Provisioning Protocol (EPP). This mapping, an extension of the domain name mapping described in [1], is specified using the Extensible Markup Language (XML) 1.0 as described in [5] and XML Schema notation as described in [6] and [7].

 The EPP core protocol specification [2] provides a complete description of EPP command and response structures. A thorough understanding of the base protocol specification is necessary to understand the mapping described in this document.

The Domain Expiry Synchronisation service will allow registrants, through their current registrar, to set a specific expiration date for all of their domain name registration periods. This will provide a means to synchronise renewals for large group of names, or even simply set a desired date of expiration date for a single domain name. The service will be fulfilled at the registry by the current registrar of record for any given domain name registration. Restrictions on which dates and times can be entered may be set by the Registry Operator.

# Conventions

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 [3].

In examples, "C:" and "S:" indicate lines sent by the client and server respectively. Indentation and white space in examples is provided only to illustrate element relationships and is not a mandatory feature of this protocol.

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.

# Object Attributes

This extension adds elements to the EPP domain name mapping [1]. Only new element descriptions are described here.

## Dates and Times

Date and time attribute values MUST be represented in Universal Coordinated Time (UTC) using the Gregorian calendar. The extended date-time form using upper case "T" and "Z" characters defined in [4] MUST be used to represent date-time values as XML Schema does not support truncated date-time forms or lower case "T" and "Z" characters.

# EPP Command Mapping

A detailed description of the EPP syntax and semantics can be found in the EPP core protocol specification [2]. The command mappings described here are specifically for use in domain name expiry dates synchronisation processes via EPP.

## 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.

### EPP <check> Command

This extension does not add any elements to the EPP <check> command or <check> response described in the EPP domain mapping [1].

### EPP <info> Command

This extension does not add any elements to the EPP <info> command or <info> response described in the EPP domain mapping [1].

### EPP <transfer> Command

This extension does not add any elements to the EPP <transfer> command or <transfer> response described in the EPP domain mapping [1].

## 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.

### EPP <create> Command

This extension does not add any elements to the EPP <create> command or <create> response described in the EPP domain mapping [1].

### EPP <delete> Command

This extension does not add any elements to the EPP <delete> command or <delete> response described in the EPP domain mapping [1].

### EPP <renew> Command

This extension does not add any elements to the EPP <renew> command or <renew> response described in the EPP domain mapping [1].

### EPP <transfer> Command

This extension does not add any elements to the EPP <transfer> command or <transfer> response described in the EPP domain mapping [1].

### EPP <update> Command

This extension defines additional elements to extend the EPP <update> command described in the EPP domain mapping [1] to synchronise registration period expiration dates.

 The EPP <update> command provides a transform operation that allows a client to change the state of a domain object. The Domain Expiry Synchronisation extension modifies base update processing to allow specification of a desired expiration date prior to the current expiration date.

 Section 3.2.5 of the EPP domain mapping describes the elements that have to be specified within an <update> command. Given that the synchronisation of a domain name's expiration date should be processed exclusively of any other domain object modification, an <update> command SHOULD NOT contain any <add>, <rem> or <chg> elements. If any of these elements are present, they MUST be empty.

 In addition to the EPP command elements described in the EPP domain mapping [1], the <update> command MUST contain an <extension> element. The <extension> element MUST contain a child <update> element that identifies the sync-1.0 namespace. The <update> element MUST contain a single <exDate> element that describes the desired date and time for the new registration period expiration date.

Example <update> 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: <update>C: <update xmlns="urn:ietf:params:xml:ns:domain-1.0">C: <name>example.com</name>C: </update>C: </update>C: <extension>C: <update xmlns="urn:X-ar:params:xml:ns:sync-1.0">C: <exDate>2010-04-03T22:00:00.0Z</exDate>C: </update>C: </extension>C: <clTRID>ABC-12345</clTRID>C: </command>C: </epp> |

When an extended <update> command has been processed successfully, the EPP response is as described in the EPP domain mapping [1].

# Formal Syntax

An EPP protocol 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 xmlns="http://www.w3.org/2001/XMLSchema" xmlns:sync="urn:X-ar:params:xml:ns:sync-1.0" targetNamespace="urn:X-ar:params:xml:ns:sync-1.0" elementFormDefault="qualified"> <annotation> <documentation> Extensible Provisioning Protocol v1.0 domain name extension schema for expiration date synchronisation. </documentation> </annotation> <!-- Child elements found in EPP commands. --> <element name="update" type="sync:updateType" /> <!-- Child elements of the <update> command. --> <complexType name="updateType"> <sequence> <element name="exDate" type="dateTime" /> </sequence> </complexType> <!-- End of schema. --></schema>END |

# Internationalization Considerations

EPP is represented in XML, which provides native support for encoding information using the Unicode character set and its more compact representations, including UTF-8 [8]. Conformant XML processors recognize both UTF-8 and UTF-16 [9]. Though XML includes provisions to identify and use other character encodings through use of an "encoding" attribute in an <?xml?> declaration, use of UTF-8 is RECOMMENDED in environments where parser encoding support incompatibility exists.

As an extension of the EPP domain mapping [1], the elements, element content, attributes, and attribute values described in this document MUST inherit the internationalization conventions used to represent higher-layer domain and core protocol structures present in an XML instance that includes this extension.

# Security Considerations

The mapping extensions described in this document do not provide any security services beyond those described by the EPP core protocol specification [2], the EPP domain name mapping [1], and protocol layers used by EPP. The security considerations described in these other specifications apply to this specification as well.

As with other domain object updates, synchronisation of a domain name registration period MUST be restricted to the sponsoring client. Any attempt to update a domain object by any client other than the sponsoring client or the registry operator MUST be rejected with an appropriate EPP authorisation error.

# References

## Normative References

[1] Hollenbeck, S., "Extensible Provisioning Protocol (EPP) Domain Name Mapping", RFC 5731, August 2009.

[2] Hollenbeck, S., "Extensible Provisioning Protocol (EPP)", RFC 5730, August 2009.

[3] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[4] Klyne, G. and C. Newman, "Date and Time on the Internet: Timestamps", RFC 3339, July 2002.

## Informative References

[5] Maler, E., Yergeau, F., Paoli, J., Bray, T., and C. Sperberg-McQueen, "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>.

[6] Thompson, H., Maloney, M., Mendelsohn, N., and D. Beech, "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>.

[7] 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>.

[8] Yergeau, F., "UTF-8, a transformation format of ISO 10646", STD 63, RFC 3629, November 2003.

[9] Hoffman, P. and F. Yergeau, "UTF-16, an encoding of ISO 10646", RFC 2781, February 2000.