
EPP RGP Poll Mapping Guide

Version 1.1

May 23, 2004



VeriSign Naming and Directory Services Proprietary Information

This document is the property of VeriSign Naming and Directory Services. It may be used by recipient only for the purpose for which it was transmitted and must be returned upon request or when no longer needed by recipient. It may not be copied or communicated without the prior written consent of VeriSign Naming and Directory Services.

COPYRIGHT NOTIFICATION

Copyright © 2003 VeriSign Inc. All rights reserved.

DISCLAIMER AND LIMITATION OF LIABILITY

VeriSign, Inc. has made efforts to ensure the accuracy and completeness of the information in this document. However, VeriSign, Inc. makes no warranties of any kind (whether express, implied or statutory) with respect to the information contained herein.

VeriSign, Inc. assumes no liability to any party for any loss or damage (whether direct or indirect) caused by any errors, omissions or statements of any kind contained in this document. Further, VeriSign, Inc. assumes no liability arising from the application or use of the product or service described herein and specifically disclaims any representation that the products or services described do not infringe upon any existing or future intellectual property rights. Nothing herein grants the reader any license to make, use, or sell equipment or products constructed in accordance with this document. Finally, all rights and privileges related to any intellectual property right described in this document are vested in the patent, trademark, or service mark owner, and no other person may exercise such rights without express permission, authority, or license secured from the patent, trademark, or service mark owner.

VeriSign Inc. reserves the right to make changes to any information herein without further notice.

NOTICE AND CAUTION

Concerning U.S. Patent or Trademark Rights

The inclusion in this document, the associated on-line file, or the associated software of any information covered by any patent, trademark, or service mark rights will not constitute nor imply a grant of, or authority to exercise, any right or privilege protected by such patent, trademark, or service mark. All such rights and privileges are vested in the patent, trademark, or service mark owner, and no other person may exercise such rights without express permission, authority, or license secured from the patent, trademark, or service mark owner.

This publication was created using Microsoft® Word 2000 for Windows® by Microsoft Corporation.
Microsoft is a registered trademark and Windows is a trademark of Microsoft Corporation.



VeriSign® Naming and Directory Services

21345 Ridgetop Circle

Dulles, VA 20166-6503

E-mail: info@verisign-grs.com

Internet: <http://www.verisign.com/nds>

Change Log

Author(s)	Date	Revision	Description
Colin Lloyd	05/01/2004	1.0	Initial Revision
James Gould	05/23/2004	1.1	Some editorial changes like the EPP RFC reference

Definitions, Acronyms, and Abbreviations

Term	Description
EPP	Extensible Provisioning Protocol
IETF	http://www.ietf.org/
RFC	Request for Comments
SDK	Software Development Kit
VNDS	VeriSign Naming and Directory Services
XML	http://www.w3c.org/XML/

Table of Contents

<u>1.</u>	<u>ABSTRACT</u>	6
	<u>CONVENTIONS USED IN THIS DOCUMENT</u>	6
<u>2.</u>	<u>INTRODUCTION</u>	6
<u>3.</u>	<u>EPP COMMAND MAPPING</u>	7
<u>3.1</u>	<u>EPP <POLL> COMMAND</u>	7
<u>4.</u>	<u>FORMAL SYNTAX</u>	11
<u>5.</u>	<u>INTERNATIONALIZATION CONSIDERATIONS</u>	12
<u>6.</u>	<u>URL</u>	12
<u>7.</u>	<u>SECURITY CONSIDERATIONS</u>	12
<u>8.</u>	<u>ACKNOWLEDGEMENTS</u>	12
<u>9.</u>	<u>REFERENCES</u>	13

1. Abstract

This document describes an Extensible Provisioning Protocol (EPP) mapping for the Registry Grace Period (RGP) Poll Notification. An account will be notified whenever an RGP report is required.

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 [RFC2119].

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

2. Introduction

This mapping is specified using the Extensible Markup Language (XML) 1.0 as described in [XML] and XML Schema notation as described in [XMLS-1] and [XMLS-2]. [EPP] 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.

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.

3. EPP Command Mapping

A detailed description of the EPP syntax and semantics can be found in [EPP]. The command mappings described here are specifically for use in RGP [EPP-RGP] via EPP.

3.1 EPP <poll> Command

NOTE: Text for this section was adapted from Extensible Provisioning Protocol IETF draft v0.9. Additional documentation of the <poll> command may be found in that document. This documentation is intended only to specify the information related to lowbalance specific poll messages.

The EPP <poll> command is used to discover and retrieve service messages queued by a server for individual clients. If the message queue is not empty, a successful response to a <poll> command **MUST** return the first message from the message queue. Each response returned from the server includes a server-unique message identifier that **MUST** be provided to acknowledge receipt of the message, and a counter that indicates the number of messages in the queue.

After a message has been received by the client, the client **MUST** respond to the message with an explicit acknowledgement to confirm that the message has been received. A server **MUST** dequeue the message and decrement the queue counter after receiving acknowledgement from the client, making the next message in the queue (if any) available for retrieval.

The <poll> command **MUST** be represented as an empty element with no child elements. An "op" attribute with value "req" is **REQUIRED** to retrieve the first message from the server message queue. An "op" attribute (with value "ack") and a "msgID" attribute (whose value corresponds to the value of the "id" attribute copied from the <msg> element in the message being acknowledged) are **REQUIRED** to acknowledge receipt of a message.

Servers can occasionally perform actions on objects that are not in direct response to a client request, or an action taken by one client can indirectly involve a second client. Some of the information returned in response to a <poll> command can be object-specific, so some child elements of the <poll> response **MAY** be specified using the EPP extension framework.

For the RGP Poll Notification, poll messages apply whenever an RGP restore command is successfully completed. The RGP Poll message includes the domain name, the restore report request date, the restore report due date, and the current RGP status of the domain. In the case of a RGP specific message, a <rgp-poll:pollData> element will be included within the <resData> element of the standard <poll> response. The <rgp-poll:pollData> element will include a reference to the rgp-poll namespace and schema location. EPP data contained within the <rgp-poll:pollData> element is formatted according to the rgp-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:  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
C:    xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
C:  <command>
C:    <poll op="req"/>
C:      <clTRID>ABC-12345</clTRID>
C:    </command>
C:</epp>
```

The returned result code notes that a message has been returned in response to a <poll> command.

Below is an example <poll> response with RGP specific information. The element <rgp-poll:pollData > contains the RGP specific data.

```
S: <?xml version="1.0" encoding="UTF-8"?>
S: <epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
S:  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
S:  xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
S:  <response>
S:    <result code="1301">
S:      <msg>Command completed successfully; ack to dequeue</msg>
S:    </result>
S:    <msgQ count="5" id="12345">
S:      <qDate>2004-05-03T20:06:17.0002Z</qDate>
S:      <msg>Restore Request Pending</msg>
S:    </msgQ>
S:    <resData>
S:      <rgp-poll:pollData
S:        xmlns:rgp-poll="http://www.verisign.com/epp/rgp-poll-1.0"
S:        xsi:schemaLocation="http://www.verisign.com/epp/rgp-poll-1.0 rgp-poll-1.0.xsd">
S:          <rgp-poll:name>foobar.com</rgp-poll:name>
S:          <rgp-poll:rgpStatus s="pendingDelete"/>
S:          <rgp-poll:reqDate>2004-05-03T20:06:17.0002Z</rgp-
S:          poll:reqDate>
S:          <rgp-poll:reportDueDate>2004-05-03T20:06:17.0002Z</rgp-
S:          poll:reportDueDate>
S:        </rgp-poll:pollData>
S:      </resData>
S:    <trID>
S:      <clTRID>abc-123</clTRID>
S:    </trID>
S:  </response>
S: </epp>
```

An RGP specific <pollData> element MUST consist of the following elements/attributes:

Element	Attribute	Description
<rgp-poll:name>		The domain name that is a candidate for restoration.
<rgp-poll:rgpStatus>	s	The RGP status of the domain as a string
<rgp-poll:reqDate>		The date the server implementation is requesting the client's restore report.
<rgp-poll:reportDueDate>		The date the client's restore report must be received by the server implementation.

A client MUST acknowledge each response to dequeue the message and make subsequent messages available for retrieval. A client acknowledges messages by sending a <poll> command with the op attribute value of "ack" and the msgID attribute value set to the server-provided message id gleaned from the previous <poll> op command.

Example <poll> acknowledgement command:

```
C:<?xml version="1.0" encoding="UTF-8" standalone="no"?>
C:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
C:  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
C:  xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0
C:  epp-1.0.xsd">
C: <command>
C:  <poll op="ack" msgID="12345"/>
C:  <clTRID>ABC-12346</clTRID>
C: </command>
C:</epp>
```

A <poll> acknowledgement response notes the number of messages remaining in the queue and the ID of the next message available for retrieval.

Example <poll> acknowledgement response:

```
S:<?xml version="1.0" encoding="UTF-8" standalone="no"?>
S:<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
S:  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
S:  xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0
S:  epp-1.0.xsd">
S: <response>
S:  <result code="1000">
S:    <msg>Command completed successfully</msg>
S:  </result>
S:  <msgQ count="4" id="12346"/>
S:  <trID>
```

S: <clTRID>ABC-12346</clTRID>
S: <svTRID>54322-XYZ</svTRID>
S: </trID>
S: </response>
S:</epp>

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.

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

  <annotation>
    <documentation>
      Extensible Provisioning Protocol v1.0
      VeriSign poll notification specification for registry grace period
      poll notifications.
    </documentation>
  </annotation>

<!--
Child elements found in EPP commands.
-->
  <element name="pollData" type="rgp-poll:pollDataType"/>

<!--
Child elements of the <notifyData> element for the
redemption grace period.
-->
  <complexType name="pollDataType">
    <sequence>
```

```
<element name="name" type="eppcom:labelType"/>
<element name="rgpStatus" type="rgp:statusType"/>
<element name="reqDate" type="dateTime"/>
<element name="reportDueDate" type="dateTime"/>
</sequence>
</complexType>
<!--
End of schema.
-->
</schema>
```

5. 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. Compliant XML processors are **REQUIRED** to understand both UTF-8 and UTF-16. Though XML includes provisions to identify other character set encoding through use of an "encoding" attribute in an `<?xml?>` declaration, EPP use with character sets other than UTF-8 is **NOT RECOMMENDED**.

All date-time values presented via EPP **MUST** be expressed in Universal Coordinated Time using the Gregorian calendar. XML Schema allows use of time zone identifiers to indicate offsets from the zero meridian, but this option **MUST NOT** be used with EPP. The extended date-time form defined in [ISO8601] **MUST** be used to represent date-time values as XML Schema does not support truncated date-time forms.

6. URL

URL: <http://www.verisign.com/epp/rgp-poll-1.0>

7. Security Considerations

The object mapping described in this document does not provide any security services or introduce any additional considerations beyond those described by [EPP] and protocol layers used by EPP.

8. Acknowledgements

9. References

[EPP] IETF RFC 3730: S. Hollenbeck: "Extensible Provisioning Protocol (EPP)", March 2004.

[EPP-RGP] S. Hollenbeck: "Domain Registry Grace Period Mapping for the Extensible Provisioning Protocol" draft-hollenbeck-epp-rgp-02.txt

[ISO8601] ISO 8601:1988 (E): "Data elements and interchange formats - Information interchange - Representation of dates and times - The International Organization for Standardization".

[RFC2119] S. Bradner: "Key Words for Use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997.

[XML] Editor T. Bray et al.: "Extensible Markup Language (XML) 1.0 (Second Edition)", W3C Recommendation 6 October 2000.

[XMLS-1] Editors H. Thompson et al.: "XML Schema Part 1: Structures", W3C Recommendation 2 May 2001.

[XMLS-2] Editors P. Biron, A. Malhotra: "XML Schema Part 2: Datatypes", W3C Recommendation 2 May 2001.