INTERNET STIFTELSEN

.se and .nu EPP Rules,

Policies and Protocol description

Version 2.1

Document control

Document information and security

Revisions

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2019-09-30	1.1	Minor adjustment to IDN-tables
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2022-08-18	1.5	Added a description in chapter 6.1 and 6.10 regarding <iis:clientDelete/> about an optional client delete attribute in the domain update command
2022-09-12	1.6	RFC 4310 (secDNS-1.0) is not supported anymore. Document updated accordingly.
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2026-07-13	2.1	Clarification regarding renew

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1 Introduction

1.1 This document

This document is meant to give a brief overview over the existing EPP commands and policies of the .se and .nu EPP-servers.

1.2 Abbreviations & Definition of words

EPP	*Extensible Provisioning Protocol*, "An XML text protocol that permits multiple service providers to perform object provisioning operations using a shared central object repository" ([1]).
DNSSEC	*Domain Name System Security Extensions.*
Sponsoring Client	The registrar responsible for an object in EPP.

1.3 References

[1] Extensible Provisioning Protocol (EPP), IETF RFC 5730.

[2] Extensible Provisioning Protocol (EPP) Domain Name Mapping, IETF RFC 5731.

[3] Extensible Provisioning Protocol (EPP) Host Mapping, IETF RFC 5732.

[4] Extensible Provisioning Protocol (EPP) Contact Mapping, IETF RFC 5733.

[5] Domain Name System (DNS) Security Extensions Mapping for the Extensible Provisioning Protocol (EPP), IETF RFC 4310, IETF RFC 5910

[6] Extensible Provisioning Protocol (EPP) Transport over TCP, IETF RFC 5734.

[7] Guidelines for Extending the Extensible Provisioning Protocol (EPP), IETF RFC 3735

[8] E.164 Number Mapping for the Extensible Provisioning Protocol (EPP), IETF RFC 4114

[9] Punycode: A Bootstring encoding of Unicode for Internationalized Domain Names in Applications (IDNA), IETF RFC 3492

1.4 About Internetstiftelsen (The Swedish Internet Foundation)

Internetstiftelsen (The Swedish Internet Foundation) is responsible for the Internet top-level domain for Sweden. As the central registry, Internetstiftelsen manages domain name registrations and the administrative and technical operation of the national domain name system for .se.

As part of its responsibility to support development and utilization of the Internet in Sweden, Internetstiftelsen has agreed to accept the role as registry services operator and administrator for the .nu top domain, as assigned by WorldNames, Inc. under an agreement with The IUSN Foundation, the charitable foundation assigned by ICANN to manage the .nu top domain.

2 Overview

2.1 General

The purpose of this document is to describe the existing EPP commands and policies of the .se and .nu EPP-servers. Readers are assumed to be familiar with the EPP-protocol as we will not cover this in this document. Please refer to the RFC:s listed in section 1.3 for more information on the EPP-protocol.

The EPP-commands are, in this document, divided into three main categories, session commands (section 4), message commands (section 5) and object commands (sections 6-8).

Session commands are used for session management. These include a command to initiate a session (login), end a session (logout) and the hello command used to gain information about the server.

Message commands are restricted to the poll command used to fetch and acknowledge queued messages.

Object commands are used to query and transform objects at the registry. There are three kinds of objects used by the .se and .nu EPP servers; domain objects, contact objects and host objects. Domain objects contain all data necessary to represent internet domain names, contact objects contains data to represent persons or companies and host objects contains all data necessary to represent name servers in the registry.

The object commands contain commands for checking if objects exist, to query for information about objects, to create/update/delete objects etc. Some of these commands use EPP extensions to facilitate extra information or extra services for the object.

2.2 XML

All through this documentation we will use descriptive prefix names for all object

namespaces: xmlns:host	”urn:ietf:params:xml:ns:host-1.0”
xmlns:contact	”urn:ietf:params:xml:ns:contact-1.0”
xmlns:domain	”urn:ietf:params:xml:ns:domain-1.0”
xmlns:secDNS	“urn:ietf:params:xml:ns:secDNS-1.1”
xmlns:iis	”urn:se:iis:xml:epp:iis-1.2“
xmlns:rl	”urn:se:iis:xml:epp:registryLock-1.0”

It is not guaranteed that the EPP server will use the same prefixes in its answers. The prefixes used by the EPP server can change at any time without notice.

2.3 Rules and Policies

This is a highlight of some of the aspects in the Internetstiftelsens registrar agreement. It is not technical information but needs to be pointed out to all that are using the .se and .nu EPP servers.

According to the Internetstiftelsens registrar agreement section 9.1, the registrar shall request the following information from the domain owner:

- Full company name and contact person or if a private individual, their first and last name
- Corporate identity number/personal identification number
- Telephone number
- E-mail address

The registrar shall not undertake any registration services until the domain owner has provided this information.

2.4 Server Usage

The use of the .se and .nu EPP servers are restricted as follows:

- Connections can be made from four IP addresses which must be submitted through the registrar web.
- Only four connections per registrar, if a fifth connection is opened the oldest connection is closed automatically.
- Max 360 commands per minute. The check is performed on a rolling 60 second basis. If more than 360 commands per minute are detected the server will slow all connections for the client until the requirement is fulfilled.
- All commands are counted toward the 360 commands limit. Every command is counted as one command except the check command.
- The check command counts as so many commands as the number of checks that are contained in the command. Five commands checking one domain count as much as one command checking five domains. Same goes for hosts and contacts.
- Max session time is one hour.
- Idle time is 350 seconds.

2.5 Client Certificate

The EPP server does require SSL connections with client certificates. You need to upload a valid client certificate through the registrar web to be able to connect to the EPP-servers.

2.6 Data format

<clTRID>	Max 63 characters (ASCII)

2.7 Registry lock extension

The server has support for a registry lock extension which is specified in the greeting message. This extension <extURI/> is optional for registrars to use but allows clients to specify it in the <login/> command. The extension is to be used when creating or updating

a domain name. The extension is described in more detail later in this document.

2.8 EPP Test platform

Internetstiftelsen is providing a EPP test platform where any registrar can test the EPP system, domains in the test environment ends with .test. The test environment provides a safe 'sandbox' for registrars to test their system without affecting data on the 'live' registry system.

The test database is not linked with the live system in any way and no data is provided. All data in the system has to be generated by registrars themselves.

It is important to note that data, like host that exists in the live system is not in the test system and if you want to use hosts for name servers in domain you have to create them.

2.9 Changes in Rules and Policies

Changes to rules and policies will be informed well in advance to registrars, and if there are changes to the .se and .nu EPP protocol that requires the registrar to update their EPP client, Internetstiftelsen will put up information about the changes 6 month in advance and will update the test platform as soon as possible.

2.10 EPP Support

Internetstiftelsen is not providing any support for EPP clients.

3 Response

If not stated otherwise all commands will be answered with a response following RFC 5730.

Example:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <resData>
        ...
    </resData>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <msgQ count="6" id="21"/>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>5431</svTRID>
    </trID>
  </response>
</epp>
```

Note that the response MIGHT contain a msgQ element if there are messages queued.

4 Session Commands

4.1 Hello and Greeting

<hello/> and <greeting/> follow RFC 5730.

As indicated in RFC 5730 <hello/> can be used as a keep alive message at any time during a connection.

Example <hello/>:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <hello/>
</epp>
```

Example <greeting/>:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <greeting>
    <svID>epptest.iis.se</svID>
    <svDate>2000-06-08T22:00:00.0Z</svDate>
    <svcMenu>
      <version>1.0</version>
      <lang>en</lang>
      <objURI>urn:ietf:params:xml:ns:domain-1.0</objURI>
      <objURI>urn:ietf:params:xml:ns:contact-1.0</objURI>
      <objURI>urn:ietf:params:xml:ns:host-1.0</objURI>
      <svcExtension>
        <extURI>urn:ietf:params:xml:ns:secDNS-1.1</extURI>
        <extURI>urn:se:iis:xml:epp:iis-1.2</extURI>
        <extURI> urn:se:iis:xml:epp:registryLock-1.0</extURI>
      </svcExtension>
    </svcMenu>
    <dcp>
      <access><all/></access>
      <statement>
        <purpose><prov/></purpose>
        <recipient><ours/><public/></recipient>
        <retention><stated/></retention>
      </statement>
    </dcp>
  </greeting>
</epp>
```

4.2 Login

This command is used to start a session on the server before you have logged in you can only use <hello/> and <login/>.

<newPW/> is not supported.

<objURI/> is optional, but at least one of domain, host or contact object uri following RFC 5731, 5732, 5733 mut be given.

<extURI/> is optional but without iis there is not much you can do. The Registry lock extension is optional and only supports locking, unlock is not supported by the server.

Example <login/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <login>
      <clID>ClientX</clID>
      <pw>foo-BAR2</pw>
      <options>
        <version>1.0</version>
        <lang>en</lang>
      </options>
      <svcs>
        <objURI>urn:ietf:params:xml:ns:domain-1.0</objURI>
        <objURI>urn:ietf:params:xml:ns:contact-1.0</objURI>
        <objURI>urn:ietf:params:xml:ns:host-1.0</objURI>
        <svcExtension>
          <extURI>urn:ietf:params:xml:ns:secDNS-1.1</extURI>
          <extURI>urn:se:iis:xml:epp:iis-1.2</extURI>
          <extURI>urn:se:iis:xml:epp:registryLock-1.0</extURI>
        </svcExtension>
      </svcs>
    </login>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54321-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

4.3 Logout

This command is used to log out from the session and disconnect from the server. Implementation follows RFC 5730.

Example <logout/> command:

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

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1500">
      <msg>Command completed successfully; ending session</msg>
    </result>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54321-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

5 Message commands

5.1 Poll

For all changes to a domain, contact or host object initiated by the registry, a message is queued for the sponsoring client to fetch. All registrars are expected to fetch and acknowledge messages regularly using the poll command. Messages which are not fetched by the registrar may be deleted by the registry after a certain amount of time.

The EPP standard has no definition of messages without an initiating request by the registrar. In that case no clTRID can be supplied and therefore the registrar doesn't know what kind of action has been taken.

We have added four tags with the purpose to let the receiver of a message know what kind of action lead to the notification.

<createNotify/>	sent when a host, contact or domain has been created, contains infData for the created object
<updateNotify/>	sent when a host, contact or domain has been updated, contains infData for the updated object
<deleteNotify/>	sent when a host, contact or domain has been deleted, contains host:delete, domain:delete or contact:delete.
<transferNotify/>	sent to the former registrar when a domain has been transferred, contains trnData for a domain or host

- reID - Registrar requesting the transfer
- reDate - The time the transfer request was initiated
- acID - Previous registrar for the domain
- acDate - The time the transfer was or will be finalized

Example <poll/> command:

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

Example response

```
     <epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1301">
      <msg>Command completed successfully; ack to dequeue</msg>
    </result>
    <msgQ count="60" id="1">
        <qDate>2008-10-07T10:49:36</qDate>
        <msg lang="en">   </msg>
    </msgQ>
    <resData>
      <iis:updateNotify xmlns:iis="urn:se:iis:xml:epp:iis-1.2"
       xsi:schemaLocation="urn:se:iis:xml:epp:iis-1.2 iis-1.2.xsd">
      <domain:infData
         xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
         xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
         domain-1.0.xsd">
        <domain:name>example.test</domain:name>
        <domain:roid>DOMAIN-1234</domain:roid>
        <domain:status s="ok"/>
        <domain:registrant>abcdef0705-00001</domain:registrant>
        <domain:ns>
          <domain:hostObj>ns1.example1.test</domain:hostObj>
          <domain:hostObj>ns1.example2.test</domain:hostObj>
        </domain:ns>
        <domain:host>ns.example.test</domain:host>
        <domain:host>ns1.example.test</domain:host>
        <domain:clID>ClientX</domain:clID>
        <domain:crID>ClientY</domain:crID>
        <domain:crDate>1999-04-03T22:00:00.0Z</domain:crDate>
        <domain:upID>ClientX</domain:upID>
        <domain:upDate>1999-12-03T09:00:00.0Z</domain:upDate>
        <domain:exDate>2005-04-03T22:00:00.0Z</domain:exDate>
        <domain:trDate>2000-04-08T09:00:00.0Z</domain:trDate>
      </domain:infData>
      </iis:updateNotify>
    </resData>
    <extension>
      <secDNS:infData
       xmlns:secDNS="urn:ietf:params:xml:ns:secDNS-1.1"
       xsi:schemaLocation="urn:ietf:params:xml:ns:secDNS-1.1
       secDNS-1.1.xsd">
        <secDNS:dsData>
          <secDNS:keyTag>12345</secDNS:keyTag>
          <secDNS:alg>3</secDNS:alg>
          <secDNS:digestType>1</secDNS:digestType>
          <secDNS:digest>49FD46E6C4B45C55D4AC</secDNS:digest>
        </secDNS:dsData>
      </secDNS:infData>
      <iis:infData xmlns:iis="urn:se:iis:xml:epp:iis-1.2"
       xsi:schemaLocation="urn:se:iis:xml:epp:iis-1.2 iis-1.2.xsd">
        <iis:deactDate>2000-11-03T00:00:00.0Z</iis:deactDate>
        <iis:delDate>2000-11-03T00:00:00.0Z</iis:delDate>
        <iis:clientDelete>0</iis:clientDelete>
      </iis:infData>
      <rl:infData xsi:schemaLocation="urn:se:iis:xml:epp:registryLock-1.0 registryLock-1.0.xsd”
xmlns:rl="urn:se:iis:xml:epp:registryLock-1.0">
         <rl:locked>1</rl:locked>
         <rl:unlockedUntil>2019-03-01T03:45:00Z</rl:unlockedUntil>
      </rl:infData>
    </extension>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>5432</svTRID>
    </trID>
  </response>
</epp>
```

Example acknowledgement command:

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

Example acknowledgement response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <msgQ count="4" id="12345"/>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>7433</svTRID>
    </trID>
  </response>
</epp>
```

Example response to note an empty message queue:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1300">
      <msg>Command completed successfully; no messages</msg>
    </result>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>7433</svTRID>
    </trID>
  </response>
</epp>
```

6 Domain Objects

Domain objects contain all data necessary to represent an internet domain name.

6.1 Domain Rules and Policies

- Max ten name servers per domain name, at least two name servers not on the same AS are recommended.

Tagname/ attribute	
<domain:name/>	1-63 characters a-z,0-9,-. IDN domains in punycode – RFC 3492
<domain:period/>	1 to 10 years or 12 to 120 months are allowed. If no period is given the domain name will be renewed with a period of 12 months.
<domain:ns/>	Only <domain:hostObj/> is supported. A maximum of 10 hosts can be associated to a domain at any given time.
<domain:hostObj/>	Max 255 characters, a-z, 0-9, -
<domain:pw/>	The EPP-server only supports the value “auto” to request the Registry to generate the authorization code. The response will than contain an extension </iis:updData> or </iis:creData> which will include the authorization code set by the Registry.
<domain:status/>	Only clientHold is supported for the registrar to set. If clientHold is set the domain will no longer be accessible through DNS.
<iis:clientDelete/>	**To cancel a domain before expiration (update command) with immediate deactivation**: 1 = cancel and deactivate domain 0 = do not cancel domain (reactivate) **To cancel a domain at its expiration date with use of an optional atExpDate attribute in the domain update command:** <iis:clientDelete atExpDate=”true”>1</iis:clientDelete> **show if domain has been cancelled (info command):** 1 = cancelled (deactivated) 0 = not cancelled

<domain:curExpDate/>	Only the date in format yyyy-mm-dd is allowed Time zone cannot be specified
<iis:ns/>	Extension for the domain:transfer command. Should contain a list of name server as <iis:hostObj/>. This list will replace the current list of name servers. Additionally all DS records will be removed from the domain.
<rl:locked/>	Extension for Registry lock. Used together with <rl:unlock/> to lock a domain for all type of updates except renewals. The server only supports the “outofband” unlock mechanism. <rl:unlock>outofband</rl:unlock> The Registry lock extension can be used when creating a domain or to update (lock) an existing domain.
<iis:eid/>	Extension for domain create and is optional to use. When set to “true” the Registrar verifies that an electronic identification of the Registrant has been made, and a discount for the domain registration is given. When set to “false” no electronic identification of the Registrant has been made and no discount is given. <extension xmlns:iis="urn:se:iis:xml:epp:iis-1.2"> <iis:eid verified="false"/> </extension>

6.2 DNSSEC

- More than one DS record for a domain name is okay.
- Maximum are six DS record per domain
- Adding new DS-records with digest type 1 or algorithms (SHA-1) is not accepted and will generate an error “2004 Parameter value range error”.

a) digest-type cannot be 1

b) algorithm cannot be 1,2,3,5,6 or 7

- According to RFC 5910 - Maximum signature lifetime (maxSigLife) is an OPTIONAL child preference for the number of seconds after signature generation when the parent's signature on the DS information provided by the child will expire. This value IS NOT supported and will be ignored by the EPP-server.
- According to RFC 5910 there are two types of interfaces regarding DS-information; DS Data Interface and Key Data interface. The EPP-server supports only the DS Data Interface.

6.3 Valid Domain Name characters for .se

.se supports domain names using the characters below. Some restrictions on the combination of the characters apply, which are listed below the table.

Unicode	Char.	Name of character	Set
U+002D	-	Hyphen-Minus	Hyph
U+0030 – U+0039	0 – 9	Digit Zero – Nine	Digits
U+0061 – U+007A	a – z	Latin small letter A – Z	Latin
U+00E0	à	Latin small letter A with grave	Latin
U+00E1	á	Latin small letter A with acute	Latin
U+00E2	â	Latin small letter A with circumflex	Latin
U+00E4	ä	Latin small letter A with diaeresis	Latin
U+00E5	å	Latin small letter A with ring above	Latin
U+00E6	æ	Latin small letter AE	Latin
U+00E7	ç	Latin small letter C with cedilla	Latin
U+00E8	è	Latin small letter E with grave	Latin
U+00E9	é	Latin small letter E with acute	Latin
U+00EA	ê	Latin small letter E with circumflex	Latin
U+00EB	ë	Latin small letter E with diaeresis	Latin
U+00EC	ì	Latin small letter I with grave	Latin
U+00ED	í	Latin small letter I with acute	Latin
U+00EE	î	Latin small letter I with circumflex	Latin
U+00EF	ï	Latin small letter I with diaeresis	Latin
U+00F0	ð	Latin small letter ETH	Latin
U+00F1	ñ	Latin small letter N with tilde	Latin
U+00F2	ò	Latin small letter O with grave	Latin
U+00F3	ó	Latin small letter O with acute	Latin
U+00F4	ô	Latin small letter O with circumflex	Latin
U+00F5	õ	Latin small letter O with tilde	Latin
U+00F6	ö	Latin small letter O with diaeresis	Latin
U+00F8	ø	Latin small letter O with stroke	Latin
U+00F9	ù	Latin small letter U with grave	Latin
U+00FA	ú	Latin small letter U with acute	Latin
U+00FC	ü	Latin small letter U with diaeresis	Latin
U+00FD	ý	Latin small letter Y with acute	Latin
U+00FE	þ	Latin small letter THORN	Latin
U+0107	ć	Latin small letter C with acute	Latin
U+010D	č	Latin small letter C with caron	Latin
U+0111	đ	Latin small letter D with stroke	Latin
U+011B	ě	Latin small letter E with caron	Latin
U+0142	ł	Latin small letter L with stroke	Latin
U+0144	ń	Latin small letter N with acute	Latin
U+014B	ŋ	Latin small letter ENG	Latin
U+0159	ř	Latin small letter R with caron	Latin
U+015B	ś	Latin small letter S with acute	Latin
U+0161	š	Latin small letter S with caron	Latin
U+0163	ţ	latin small letter T with cedilla	Latin
U+0167	ŧ	latin small letter T with stroke	Latin
U+017A	ź	Latin small letter Z with acute	Latin
U+017E	ž	Latin small letter Z with caron	Latin
U+01CE	ǎ	Latin small letter A with caron	Latin
U+01D0	ǐ	Latin small letter I with caron	Latin
U+01D2	ǒ	Latin small letter O with caron	Latin
U+01D4	ǔ	Latin small letter U with caron	Latin
U+01E5	ǥ	Latin small letter G with stroke	Latin
U+01E7	ǧ	Latin small letter G with caron	Latin
U+01E9	ǩ	Latin small letter K with caron	Latin
U+01EF	ǯ	Latin small letter Ezh with caron	Latin
U+0259	ə	Latin small letter SCHWA	Latin
U+0292	ʒ	Latin small letter Ezh	Latin
U+05D0	א	Hebrew letter ALEF	Hebr
U+05D0 + U+05B7	אַ	Hebrew letter ALEF + Hebrew point PATAH	Hebr

Unicode	Char.	Name of character	Set
U+05D0 + U+05B8	אָ	Hebrew letter ALEF + Hebrew point QAMATS	Hebr
U+05D1	ב	Hebrew letter BET	Hebr
U+05D1 + U+05BF	בֿ	Hebrew letter BET + Hebrew point RAFE	Hebr
U+05D2	ג	Hebrew letter GIMEL	Hebr
U+05D3	ד	Hebrew letter DALET	Hebr
U+05D4	ה	Hebrew letter HE	Hebr
U+05D5	ו	Hebrew letter VAV	Hebr
U+05D5 + U+05BC	וּ	Hebrew letter VAV + Hebrew point DAGESH or MAPIQ	Hebr
U+05D6	ז	Hebrew letter ZAYIN	Hebr
U+05D7	ח	Hebrew letter HET	Hebr
U+05D8	ט	Hebrew letter TET	Hebr
U+05D9	י	Hebrew letter YOD	Hebr
U+05D9 + U+05B4	יִ	Hebrew letter YOD + Hebrew point HIRIQ	Hebr
U+05DA	ך	Hebrew letter final KAF	Hebr
U+05DB	כ	Hebrew letter KAF	Hebr
U+05DB + U+05BC	כּ	Hebrew letter KAF + Hebrew point DAGESH or MAPIQ	Hebr
U+05DC	ל	Hebrew letter LAMED	Hebr
U+05DD	ם	Hebrew letter final MEM	Hebr
U+05DE	מ	Hebrew letter MEM	Hebr
U+05DF	ן	Hebrew letter final NUN	Hebr
U+05E0	נ	Hebrew letter NUN	Hebr
U+05E1	ס	Hebrew letter SAMEKH	Hebr
U+05E2	ע	Hebrew letter AYIN	Hebr
U+05E3	ף	Hebrew letter final PE	Hebr
U+05E4	פ	Hebrew letter PE	Hebr
U+05E4 + U+05BC	פּ	Hebrew letter PE + Hebrew point DAGESH OR MAPIQ	Hebr
U+05E4 + U+05BF	פֿ	Hebrew letter PE + Hebrew point RAFE	Hebr
U+05E5	ץ	Hebrew letter final TSADI	Hebr
U+05E6	צ	Hebrew letter TSADI	Hebr
U+05E7	ק	Hebrew letter QOF	Hebr
U+05E8	ר	Hebrew letter RESH	Hebr
U+05E9	ש	Hebrew letter SHIN	Hebr
U+05E9 + U+05C2	שׂ	Hebrew letter SHIN + Hebrew point SIN DOT	Hebr
U+05EA	ת	Hebrew letter TAV	Hebr
U+05EA + U+05BC	תּ	Hebrew letter TAV + Hebrew point DAGESH OR MAPIQ	Hebr
U+05F2 + U+05B7	ײַ	Hebrew ligature Yiddish double YOD + Hebrew	Hebr

"Domain name" in this document refer to what we find before ".se", not the entire domain name including .se.

Restrictions

- Characters from Latin set and Hebrew (Hebr) set must not be mixed in the same domain name.
- Domain name must not start or end with Hyphen-Minus ("-").
- Domain name must not have Hyphen-Minus in both position three and four.
- If a domain name contains a Hebrew character, it must not start or end with a character from the Digits set.

Reference

The Unicode code charts with Unicode codes and characters are found at https://www.unicode.org/charts/

Revision C, 2020-10-02.
Latest version of this document can always be found at
https://dotse.github.io/IDN-tables/IDN_table_se.pdf

6.4 Valid Domain Name characters for .nu

.nu supports domain names using the characters below. Some restrictions on the combination of the characters apply, which are listed below the table.

Unicode	Char.	Name of character
U+002D	-	Hyphen-Minus
U+0030 – U+0039	0 – 9	Digit Zero – Nine
U+0061 – U+007A	a – z	Latin small letter A – Z
U+00E0	à	Latin small letter A with grave
U+00E1	á	Latin small letter A with acute
U+00E2	â	Latin small letter A with circumflex
U+00E3	ã	Latin small letter A with tilde
U+00E4	ä	Latin small letter A with diaeresis
U+00E5	å	Latin small letter A with ring above
U+00E6	æ	Latin small letter AE
U+00E7	ç	Latin small letter C with cedilla
U+00E8	è	Latin small letter E with grave
U+00E9	é	Latin small letter E with acute
U+00EA	ê	Latin small letter E with circumflex
U+00EB	ë	Latin small letter E with diaeresis
U+00EC	ì	Latin small letter I with grave
U+00ED	í	Latin small letter I with acute
U+00EE	î	Latin small letter I with circumflex
U+00EF	ï	Latin small letter I with diaeresis
U+00F0	ð	Latin small letter ETH
U+00F1	ñ	Latin small letter N with tilde
U+00F2	ò	Latin small letter O with grave
U+00F3	ó	Latin small letter O with acute
U+00F4	ô	Latin small letter O with circumflex
U+00F5	õ	Latin small letter O with tilde
U+00F6	ő	Latin small letter O with diaeresis
U+00F8	ø	Latin small letter O with stroke
U+00F9	ù	Latin small letter U with grave
U+00FA	ú	Latin small letter U with acute
U+00FB	û	Latin small letter U with circumflex
U+00FC	ü	Latin small letter U with diaeresis
U+00FD	ý	Latin small letter Y with acute
U+00FE	þ	Latin small letter THORN
U+00FF	ÿ	Latin small letter Y with diaeresis
U+0101	ā	Latin small letter A with macron
U+0113	ē	Latin small letter E with macron
U+012B	ī	Latin small letter I with macron
U+014B	ŋ	Latin small letter ENG
U+014D	ō	Latin small letter O with macron
U+016B	ū	Latin small letter U with macron

"Domain name" in this document refer to the what we find before ".nu", not the entire domain name including .nu.

Note on German Sharp S

The character "Latin small letter sharp S" (U+00DF, "ß") can only be used in a domain name after conversion to the sequence "ss".

Restrictions

- Domain name must not start or end with Hyphen-Minus ("-").
- Domain name must not have Hyphen-Minus in both position three and four.

Reference

The Unicode code charts with Unicode codes and characters are found at https://www.unicode.org/charts/

Revision C, 2020-10-02.Latest version of this document can always be found at https://dotse.github.io/IDN-tables/IDN_table_nu.pdf

6.5 Check

Follows RFC 5730 and RFC 5731.

Example <check/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <check>
      <domain:check xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
       domain-1.0.xsd">
        <domain:name>example.test</domain:name>
        <domain:name>example2.test</domain:name>
      </domain:check>
    </check>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <resData>
      <domain:chkData xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
       domain-1.0.xsd">
        <domain:cd>
          <domain:name avail="1">example.test</domain:name>
        </domain:cd>
        <domain:cd>
          <domain:name avail="0">example2.test</domain:name>
          <domain:reason>In use</domain:reason>
        </domain:cd>
      </domain:chkData>
    </resData>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>5431</svTRID>
    </trID>
  </response>
</epp>
```

6.6 Info

Follows RFC 5730 and RFC 5731 with the following exceptions:

- <domain:authInfo/> is not supported, there are no access restrictions
- <domain:authInfo/> will not be returned in <domain:infData/>. For security reasons the Registry will only save a hash of the authInfo password and is therefore unable to return the data.

Extensions

<iis:infData/> will be returned in <extension/>. It can contain:

<iis:clientDelete/>	- the clienteDelete state of the domain
<iis:deactDate/>	- the date when the domain will be deactivated
<iis:delDate/>	- the date when the domain will be deleted
<iis:relDate/>	- the date when the domain will be released
<iis:state/>	- the state of the domain
<rl:locked/>	- indicates if the domain is locked or not. 1 = locked 0 = unlocked.
<rl:unlockedUntil/>	- temporary unlocked domain. When the date and time specified is passed the domain name will be locked again

<iis:state/> <iis:clientDelete/> and <rl:locked/> will always be given, the other fields are optional and will be returned only if set. <rl:unlockedUntil/> will only be returned if set and only to the sponsoring client.

Example <info/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <info>
      <domain:info
       xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
       domain-1.0.xsd">
        <domain:name hosts="all">example.test</domain:name>
      </domain:info>
    </info>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <resData>
      <domain:infData
       xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
       domain-1.0.xsd">
        <domain:name>example.test</domain:name>
        <domain:roid>DOMAIN-1234</domain:roid>
        <domain:status s="ok"/>
        <domain:registrant>abcdef0705-00001</domain:registrant>
        <domain:ns>
          <domain:hostObj>ns1.example1.test</domain:hostObj>
          <domain:hostObj>ns1.example2.test</domain:hostObj>
        </domain:ns>
        <domain:host>ns.example.test</domain:host>
        <domain:host>ns1.example.test</domain:host>
        <domain:clID>ClientX</domain:clID>
        <domain:crID>ClientY</domain:crID>
        <domain:crDate>1999-04-03T22:00:00.0Z</domain:crDate>
        <domain:upID>ClientX</domain:upID>
        <domain:upDate>1999-12-03T00:00:00.0Z</domain:upDate>
        <domain:exDate>2005-04-03T00:00:00.0Z</domain:exDate>
        <domain:trDate>2000-04-08T00:00:00.0Z</domain:trDate>
      </domain:infData>
    </resData>
    <extension>
      <sec:infData
       xmlns:sec="urn:ietf:params:xml:ns:secDNS-1.1"
       xsi:schemaLocation="urn:ietf:params:xml:ns:secDNS-1.1
       secDNS-1.1.xsd">
        <sec:dsData>
          <sec:keyTag>12345</sec:keyTag>
          <sec:alg>3</sec:alg>
          <sec:digestType>1</sec:digestType>
          <sec:digest>49FD46E6C4B45C55D4AC</sec:digest>
        </sec:dsData>
      </sec:infData>
      <iis:infData xmlns:iis="urn:se:iis:xml:epp:iis-1.2"
       xsi:schemaLocation="urn:se:iis:xml:epp:iis-1.2 iis-1.2.xsd">
        <iis:deactDate>2000-11-03T00:00:00.0Z</iis:deactDate>
        <iis:delDate>2000-11-03T00:00:00.0Z</iis:delDate>
        <iis:state>expired</iis:state>
        <iis:clientDelete>0</iis:clientDelete>
      </iis:infData>
      <rl:infData xsi:schemaLocation="urn:se:iis:xml:epp:registryLock-1.0 registryLock-1.0.xsd"
xmlns:rl="urn:se:iis:xml:epp:registryLock-1.0">
        <rl:locked>1</rl:locked>
        <rl:unlockedUntil>2019-03-01T03:45:00Z</rl:unlockedUntil>
      </rl:infData>
      </extension>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>5432</svTRID>
    </trID>
  </response>
</epp>
```

6.7 Transfer

Follows RFC 5730 and RFC 5731 with the following exceptions:

- Only op=”request” is supported. All transfers are rejected or executed immediately, therefore “query”, “approve”, “reject” is not supported.
- <domain:pw/> attribute roid is not supported. The password (authorization code) of the domain must be given.
- <domain:period/> is not supported. Transfer does not renew a domain name
- A transfer of a domain does clear <iis:clientDelete/>

Additionally, we have added the possibility to submit new host objects with a transfer request. When new name servers are submitted in the transfer command, the old name servers will be replaced with the new list and all DNSSEC DS records will be removed from the domain.

Example <transfer/> request command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <transfer op="request">
      <domain:transfer
       xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
       domain-1.0.xsd">
        <domain:name>example.test</domain:name>
        <domain:authInfo>
          <domain:pw>foobar</domain:pw>
        </domain:authInfo>
      </domain:transfer>
    </transfer>
    <extension>
      <iis:transfer xmlns:iis="urn:se:iis:xml:epp:iis-1.2"
       xsi:schemaLocation="urn:se:iis:xml:epp:iis-1.2 iis-1.2.xsd">
        <iis:ns>
          <iis:hostObj>ns.exempel.test</iis:hostObj>
        </iis:ns>
      </iis:transfer>
    </extension>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example <transfer/> request response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <resData>
      <domain:trnData
       xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
       domain-1.0.xsd">
        <domain:name>example.test</domain:name>
        <domain:trStatus>serverApproved</domain:trStatus>
        <domain:reID>ClientX</domain:reID>
        <domain:reDate>2000-06-08T22:00:00.0Z</domain:reDate>
        <domain:acID>ClientX</domain:acID>
        <domain:acDate>2000-06-08T22:00:00.0Z</domain:acDate>
      </domain:trnData>
    </resData>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54322-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

6.8 Create

- Follows RFC 5730 and RFC 5731.
- <domain:period/> can be any value between 12 and 120 months. Additionally values of 1 to 10 years are supported.
- </domain:pw> only supports “auto” as input to let Registry Services set the authorization. The new authorization code will be a part of the response message. If anything else than “auto” is given the server will respond with an error (2004 Parameter value range error).

Example <create/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-
     1.0"xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-
     1.0.xsd">
     <command>
    <create>
      <domain:create
       xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
       domain-1.0.xsd">
        <domain:name>examples.nu</domain:name>
        <domain:period unit="y">1</domain:period>
        <domain:ns>
          <domain:hostObj>ns1.example1.test</domain:hostObj>
          <domain:hostObj>ns2.example2.test</domain:hostObj>
        </domain:ns>
        <domain:registrant>jd-1234</domain:registrant>
        <domain:authInfo>
          <domain:pw>auto</domain:pw>
        </domain:authInfo>
      </domain:create>
    </create>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example <create/> response

The response will also contain an extension </iis:creData> which will include the authorization code set by the Registry.

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <resData>
      <dom:creData xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0 domain-
1.0.xsd" xmlns:dom="urn:ietf:params:xml:ns:domain-1.0">
        <dom:name>examples.nu</dom:name>
        <dom:crDate>2023-06-26T00:00:00Z</dom:crDate>
        <dom:exDate>2024-06-26T00:00:00Z</dom:exDate>
      </dom:creData>
    </resData>
    <extension>
      <iis:creData xsi:schemaLocation="urn:se:iis:xml:epp:iis-1.2 iis-1.2.xsd"
xmlns:iis="urn:se:iis:xml:epp:iis-1.2">
        <iis:pw>NU-230710-TESTAB-3c406b1b-5a1a-4d10-add7-faf352ca3ee0</iis:pw>
      </iis:creData>
    </extension>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>2e108e49-c8b3-43d4-9050-33c334b05788</svTRID>
    </trID>
  </response>
```

6.9 Delete

The delete command is supported. The clientDelete flag will be set, which means that the domain will be deactivated for 60 days and then deleted. See also chapter 6.10 below for the <iis:clientDelete/> extension.

6.10 Update

Follows RFC 5730 and RFC 5731. The following extensions have been added:

- <iis:clientDelete/> - Cancel a domain (1 = cancel, 0 = remove cancel). This flag is automatically set to zero if the domain is transferred. If the domain is cancelled it will be deactivated for 60 days and then deleted. A PendingDelete status will also be applied to the domain as well as ServerHold.

Optional attribute to <iis:clientDelete/>

<iis:clientDelete/> has an optional atExpDate attribute which can be used. If this attribute is used and set to "1" the domain name will be deactivated on its expiration date instead of immediately. If set to "0", or not part of the command at all, the domain name will be deactivated immediately.

<iis:clientDelete atExpDate=”1”>1</iis:clientDelete>

atExpDate=”1” means deactivation on its expiration date
atExpDate=”0” means immediate deactivation

Registry lock

<rl:lock/> - This extension together with <rl:unlock>outofband</rl:unlock> locks a domain name.

Set authorization code

</domain:pw> only supports “auto” as input to let Registry Services set the authorization. The new authorization code will be a part of the response message. If anything else than “auto” is given the server will respond with an error (2004 Parameter value range error).

Example <update/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0
     epp-1.0.xsd">
  <command>
    <update>
      <domain:update
       xmlns:domain="urn:ietf:params:xml:ns:domain
       -1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:do
       main-1.0 domain-1.0.xsd">
        <domain:name>example.se</domain:name>
        <domain:add>
          <domain:ns>
            <domain:hostObj>ns2.example2.test</domain:hostObj>
          </domain:ns>
          <domain:contact type="tech">mak-21</domain:contact>
          <domain:status s="clientHold"
           lang="en">Payment
           overdue.</domain:status>
        </domain:add>
        <domain:rem>
          <domain:ns>
            <domain:hostObj>ns1.example1.test</domain:hostObj>
          </domain:ns>
        </domain:rem>
        <domain:chg>
          <domain:registrant>sh-8013</domain:registrant>
          <domain:authInfo>
            <domain:pw>auto</domain:pw>
          </domain:authInfo>
        </domain:chg>
      </domain:update>
    </update>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example <update/> response

The response will contain an extension </iis:updData> which will include the authorization code set by the Registry.

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
   xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance
   xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
 <response>
  <result code="1000">
   <msg>Command completed successfully</msg>
  </result>
  <extension>
   <iis:updData xsi:schemaLocation="urn:se:iis:xml:epp:iis-1.2 iis-1.2.xsd" xmlns:iis="urn:se:iis:xml:epp:iis-1.2">
    <iis:pw>SE-230710-TESTAB-f8d9f2d1-f464-4891-8797-feeb210aef9e</iis:pw>
   </iis:updData>
  </extension>
  <trID>
   <clTRID>ABC-12345</clTRID>
   <svTRID>38623b69-6f84-4a35-beab-4a1626bb850f</svTRID>
  </trID>
 </response>
</epp>
```

6.11 Renew

- Follows RFC 5730, RFC 5731.
- <domain:period/> can be any value between 12 and 120 months. Additionally values of 1 to 10 years are supported.
- A domain can be renewed at any time, as long as serverRenewProhibited is not set. However, expiry date (year) can be max 10 years away from when the renewal takes place. Renew is possible until one day before <iis:delDate/>.

Example <renew/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <renew>
      <domain:renew
       xmlns:domain="urn:ietf:params:xml:ns:domain-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
       domain-1.0.xsd">
        <domain:name>exempel.test</domain:name>
        <domain:curExpDate>2008-11-05</domain:curExpDate>
        <domain:period unit="m">17</domain:period>
      </domain:renew>
    </renew>
    <clTRID>myTRID-1</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd"
     xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <response>
    <resData>
      <domain:renData
        xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0
        domain-1.0.xsd"
        xmlns:domain="urn:ietf:params:xml:ns:domain-1.0">
        <domain:name>example.test</domain:name>
        <domain:exDate>2010-04-05T00:00:00Z</domain:exDate>
      </domain:renData>
    </resData>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <trID>
      <clTRID>myTRID-1</clTRID>
      <svTRID>40</svTRID>
    </trID>
  </response>
</epp>
```

7 Contact Objects

Follows RFC 5730, RFC 5733. The following extensions are added:

- <iis:orgno/> - personal or organisational number
- <iis:vatno/> - VAT number

7.1 Contact Rules and Policies

7.1.1 <CONTACT:NAME/>

This is required information. In this field the name of the contact person must be stated, but if the field <contact:org> is completed, <contact:name> may be a department or function. If the field <contact:org/> is not completed the contact will be registered as a private person. In that case the, this field MUST BE completed with the holder's first and last name.

7.1.2 <CONTACT:ORG/>

This is required information if the created contact is a legal person. If specified the contact is assumed to be a company. The field must contain the registered company name.

7.1.3 <CONTACT:EMAIL/>

This is required information. Must be a valid email address which is connected to the holder of the contact.

7.1.4 <CONTACT:VOICE/>

Telephone number is required information. Telephone numbers should be given in E.164. Plus sign, ITU country code, dot, 1 to 14 digits, for example +46.84523500.

Extension must be given, but can be empty or 1 to 40 digits 0-9

7.1.5 <IIS:ORGNO/>

A valid personal- or organizational number is required for all contacts, or one who can be identified through proof of registration in a record maintained by a public authority or by an organization with functions comparable to that of a public authority.

For .nu domain names and non-swedish contacts other unique identifiers are allowed as per described in the registrar agreement.

Starts with ISO 3166 Alpha-2 country code in square brackets. If the country code for Sweden is given [SE] a valid Swedish personal or organizational number is to be given (6 digits, dash, 4 digits). For example [SE]802405-0190.

7.1.6 <CONTACT:AUTHINFO>

Contact:Authinfo is not supported for create and update. It is available for "Contact Info" for non-sponsoring clients to get all information for a contact.

The opportunity to obtain all contact information for a holder via the EPP command "Contact Info" if the registrar has the current authorization code for the domain and domain ROID associated with the contact which the non-sponsoring client wants to acquire information about.

<contact:authInfo>

<contact:pw roid="DOMAIN_00000000000-SE">2BARfoo%=</</contact:pw>
</contact:authInfo>

Tagname/attribute	Comment
<contact:id/>	Minimum length 3 characters Maximum length is 1 characters Must contains letters a-z,A-Z or digits 0-9 or dash "-"
<contact:name/>	1 to 255 characters. This is required information
<contact:org/>	1 to 255 characters If specified, the contact is assumed to be a company.

Tagname/attribute	Comment
<contact:voice/>	Required information. Telephone numbers should be given in E.164. Plus sign, ITU country code, dot, 1 to 14 digits Extension must be given, but can be empty or 1 to 40 digits 0-9.
<contact:fax/>	Optional. For format see <contact:voice/>
<contact:email/>	Must be a valid e-mail address.
<contact:authInfo/>	See 7.1.10
<iis:orgno/>	Starts with ISO 3166 Alpha-2 country code in square brackets. If the country code for Sweden is given [SE] a valid Swedish personal or organisational number must be given (6 digits, dash, 4 digits), otherwise 1 to 123 characters can follow. If <contact:org/> is empty and the country code for Sweden [SE] is given. <iis:orgno/> must be a personal number not an organisational number.
<iis:vatno/>	Optional information. Starts with a two-letter country code (uppercase), followed by an optional space, followed by a country specific string containing digits 0-9, and letters a-z and A-Z.

7.2 Check

Follows RFC 5730 and RFC 5733.

Example <check/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <check>
      <contact:check
       xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0
       contact-1.0.xsd">
        <contact:id>abcdef0705-00001</contact:id>
        <contact:id>bcdefg0705-00001</contact:id>
        <contact:id>abcdef0705-00002</contact:id>
      </contact:check>
    </check>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <resData>
      <contact:chkData
       xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0
       contact-1.0.xsd">
        <contact:cd>
          <contact:id avail="1">abcdef0705-00001</contact:id>
        </contact:cd>
        <contact:cd>
          <contact:id avail="0">bcdefg0705-00001</contact:id>
          <contact:reason>In use</contact:reason>
        </contact:cd>
        <contact:cd>
          <contact:id avail="1">abcdef0705-00002</contact:id>
        </contact:cd>
      </contact:chkData>
    </resData>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54322-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

7.3 Info

Follows RFC 5730 and RFC 5733. The response will contain the following extensions:

- <iis:orgno/> - personal or organisational number
- <iis:vatno/> - VAT number
- Only the sponsoring client is allowed to execute this command. Anybody else will receive an error.
- If the info command contains the current authorization code for the domain and domain ROID all contact information can be obtained even if the registrar is not the sponsoring client. More information about this in chapter 7.1.6.

<contact:authInfo>
<contact:roid/> follows RFC5730 with a format like this CONTACT_0000000000-SE.
</contact:authInfo>

Example <info/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <info>
      <contact:info
       xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0
       contact-1.0.xsd">
        <contact:id>sh0808-8013</contact:id>
      </contact:info>
    </info>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <resData>
      <contact:infData
       xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0
       contact-1.0.xsd">
        <contact:id>sh0808-8013</contact:id>
        <contact:roid>CONTACT_0000000000-SE</contact:roid>
        <contact:status s="ok"/>
        <contact:postalInfo type="loc">
          <contact:name>Example Example</contact:name>
          <contact:org>IIS (The IIS)</contact:org>
          <contact:addr>
            <contact:street>Example street 11</contact:street>
            <contact:city>Stockholm</contact:city>
            <contact:pc>11111</contact:pc>
            <contact:cc>SE</contact:cc>
          </contact:addr>
        </contact:postalInfo>
        <contact:voice x="">+46.84523500</contact:voice>
        <contact:fax x="">+46.84523502</contact:fax>
        <contact:email>example@example.test</contact:email>
        <contact:clID>ClientY</contact:clID>
        <contact:crID>ClientX</contact:crID>
        <contact:crDate>1999-04-03T22:00:00.0Z</contact:crDate>
        <contact:upID>ClientX</contact:upID>
        <contact:upDate>1999-12-03T09:00:00.0Z</contact:upDate>
      </contact:infData>
    </resData>
    <extension>
      <iis:infData xmlns:iis="urn:se:iis:xml:epp:iis-1.2"
       xsi:schemaLocation="urn:se:iis:xml:epp:iis-1.2 iis-1.2.xsd">
        <iis:orgno>[SE]802405-0190</iis:orgno>
        <iis:vatno>SE802405019001</iis:vatno>
      </iis:infData>
    </extension>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54322-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

7.4 Transfer

Contacts cannot be transferred.

7.5 Create

Follows RFC 5730 and RFC 5733. The following extensions are supported:

- <iis:orgno/> - personal or organisational number
- <iis:vatno/> - VAT number
- <contact:authInfo/> is not supported.

Example <create/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
```

```
epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <create>
      <contact:create
       xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0
       contact-1.0.xsd">
        <contact:id>abcdef0704-00001</contact:id>
        <contact:postalInfo type="loc">
          <contact:name>Example Example</contact:name>
          <contact:org>IIS</contact:org>
          <contact:addr>
            <contact:street></contact:street>
            <contact:city></contact:city>
            <contact:pc></contact:pc>
            <contact:cc></contact:cc>
          </contact:addr>
        </contact:postalInfo>
        <contact:voice x="">+46.84523500</contact:voice>
        <contact:fax x="">+46.84523502</contact:fax>
        <contact:email>example@example.test</contact:email>
      </contact:create>
    </create>
    <extension>
      <iis:create xmlns:iis="urn:se:iis:xml:epp:iis-1.2"
       xsi:schemaLocation="urn:se:iis:xml:epp:iis-1.2 iis-1.2.xsd">
        <iis:orgno>[SE]802405-0190</iis:orgno>
        <iis:vatno>SE802405019001</iis:vatno>
      </iis:create>
    </extension>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <resData>
      <contact:creData
       xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0
       contact-1.0.xsd">
        <contact:id>abcdef0704-00001</contact:id>
        <contact:crDate>1999-04-03T22:00:00.0Z</contact:crDate>
      </contact:creData>
    </resData>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54321-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

7.6 Delete

- Follows RFC 5730 and RFC 5733.
- Contacts may not be deleted if they are linked to a domain.

Example <delete/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
```

```
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <delete>
      <contact:delete
       xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0
       contact-1.0.xsd">
        <contact:id>abc0704-00001</contact:id>
      </contact:delete>
    </delete>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54321-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

7.7 Update

Follows RFC 5730 and RFC 5733. The following extension is supported:

- <iis:vatno/> - VAT number
- Please note that <iis:orgno/> cannot be updated.
- <contact:authInfo/> and <contact:status/> are not supported.

Example <update/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <update>
      <contact:update
       xmlns:contact="urn:ietf:params:xml:ns:contact-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:contact-1.0
       contact-1.0.xsd">
        <contact:id>abcdef0704-00001</contact:id>
        <contact:chg>
          <contact:postalInfo type="loc">
            <contact:addr>
              <contact:street></contact:street>
              <contact:city></contact:city>
              <contact:pc></contact:pc>
              <contact:cc></contact:cc>
            </contact:addr>
          </contact:postalInfo>
          <contact:voice x="">+46.84523500</contact:voice>
          <contact:fax x="" />
        </contact:chg>
      </contact:update>
    </update>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54321-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

7.8 Renew

Contacts cannot be renewed.

8 Host Objects

8.1 Host Rules and Policies

- Max ten IP addresses servers per host.
- For hosts outside the .se or .nu zone an internal registrar will automatically be set as sponsoring client
- Hosts outside the .se or .nu zone cannot be updated (name cannot be changed and IP addresses are not needed)
- As result of the automatically assigned sponsoring client hosts outside the .se or .nu zone cannot be deleted
- For hosts in the .se or .nu zone only IP addresses from public IP ranges are accepted. See RFC 1918, RFC 3879, RFC 3927, RFC 4193, RFC 5156, RFC 5735 and RFC6598
- For hosts which act as name server for their parent zone glue must be provided. (This is actively checked by the EPP server). This implies that such a host must have at least one IP address always associated.
- Host names can consist only of small letters.
- Hosts in the .se or .nu zone can only be created if the parent zone is registered.
- Hosts in the .se or .nu zone can only be created by the sponsoring client of the parent zone.

Tagname/attribute	Comment
<host:name/>	Max 255 characters If the host is in the .se or .nu zone the parent domain must exist. Only lower-case characters.
<host:addr/>	Multiple tags may be submitted. The ip attribute can be “v4” or “v6”, if it is not given v4 is assumed.

8.2 Address update with glue record

The EPP Server strictly enforces the rule that glue record must exist for a host that is nameserver for the parent zone. This is enforced even when you do an IP-address update. The server process removes old IP-address before adding of ones, even if the order is sent differently in the same command.

This means that if there is a host with only one IP-address and you try to change that IP-address in one command it will be a policy violation when the old address is removed, and the command will fail.

To solve this, execute the change in 2 commands. First add the new IP-address in one command and then remove the old IP-address in a new command. This way the policy is never broken.

8.3 Check

Follows RFC 5730 and RFC 5732.

Example <check/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <check>
      <host:check
       xmlns:host="urn:ietf:params:xml:ns:host-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:host-1.0
       host-1.0.xsd">
        <host:name>ns1.example.test</host:name>
        <host:name>ns2.example.test</host:name>
        <host:name>ns3.example.test</host:name>
      </host:check>
    </check>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <resData>
      <host:chkData
       xmlns:host="urn:ietf:params:xml:ns:host-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:host-1.0
       host-1.0.xsd">
        <host:cd>
          <host:name avail="1">ns1.example.test</host:name>
        </host:cd>
        <host:cd>
          <host:name avail="0">ns2.example2.test</host:name>
          <host:reason>In use</host:reason>
        </host:cd>
        <host:cd>
          <host:name avail="1">ns3.example3.test</host:name>
        </host:cd>
      </host:chkData>
    </resData>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54322-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

8.4 Info

Follows RFC 5730 and RFC 5732.

Example <info/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <info>
      <host:info
       xmlns:host="urn:ietf:params:xml:ns:host-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:host-1.0
       host-1.0.xsd">
        <host:name>ns1.example.test</host:name>
      </host:info>
    </info>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <resData>
      <host:infData
       xmlns:host="urn:ietf:params:xml:ns:host-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:host-1.0
       host-1.0.xsd">
        <host:name>ns1.example.test</host:name>
        <host:roid>HOST-1234</host:roid>
        <host:status s="ok"/>
        <host:addr ip="v4">192.0.2.2</host:addr>
        <host:addr ip="v4">192.0.2.29</host:addr>
        <host:addr ip="v6">1080:0:0:0:8:800:200C:417A</host:addr>
        <host:clID>ClientY</host:clID>
        <host:crID>ClientX</host:crID>
        <host:crDate>1999-04-03T22:00:00.0Z</host:crDate>
        <host:upID>ClientX</host:upID>
        <host:upDate>1999-12-03T09:00:00.0Z</host:upDate>
      </host:infData>
    </resData>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54322-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

8.5 Transfer

This command is not implemented since subordinate host objects under .se or .nu are transferred together with the domain and host objects outside .se or .nu has no sponsoring client in the registry.

8.6 Create

- Follows RFC 5730 and RFC 5732.
- Hosts in the .se or .nu zone can only be created by the sponsoring client of the parent zone.

Example <create/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <create>
      <host:create
       xmlns:host="urn:ietf:params:xml:ns:host-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:host-1.0
       host-1.0.xsd">
        <host:name>ns1.example.test</host:name>
        <host:addr ip="v4">192.0.2.2</host:addr>
        <host:addr ip="v4">192.0.2.29</host:addr>
        <host:addr ip="v6">1080:0:0:0:8:800:200C:417A</host:addr>
      </host:create>
    </create>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <resData>
      <host:creData
       xmlns:host="urn:ietf:params:xml:ns:host-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:host-1.0
       host-1.0.xsd">
        <host:name>ns1.example.test</host:name>
        <host:crDate>1999-04-03T22:00:00.0Z</host:crDate>
      </host:creData>
    </resData>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54322-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

8.7 Delete

Follows RFC 5730 and RFC 5732.

Note that host objects linked to domain objects cannot be removed.

Example <delete/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <delete>
      <host:delete
       xmlns:host="urn:ietf:params:xml:ns:host-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:host-1.0
       host-1.0.xsd">
        <host:name>ns1.example.test</host:name>
      </host:delete>
    </delete>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54321-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

8.8 Update

- Follows RFC 5730 and RFC 5732.
- <host:status/> is not supported
- <host:name/> cannot be changed.

See 8.2 about updating hosts with glue records.

Example <update/> command:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <command>
    <update>
      <host:update
       xmlns:host="urn:ietf:params:xml:ns:host-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:host-1.0
       host-1.0.xsd">
        <host:name>ns1.example.test</host:name>
        <host:add>
          <host:addr ip="v4">192.0.2.22</host:addr>
        </host:add>
        <host:rem>
          <host:addr ip="v6">1080:0:0:0:8:800:200C:417A</host:addr>
        </host:rem>
      </host:update>
    </update>
    <clTRID>ABC-12345</clTRID>
  </command>
</epp>
```

Example response:

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<epp xmlns="urn:ietf:params:xml:ns:epp-1.0"
     xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:schemaLocation="urn:ietf:params:xml:ns:epp-1.0 epp-1.0.xsd">
  <response>
    <result code="1000">
      <msg>Command completed successfully</msg>
    </result>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54321-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

8.9 Renew

Host objects cannot be renewed.