IT Department
Documentation

# EPP Rules, Policies and Protocol description

Version 16

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# Document control

## Document information and security

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| 2008-10-10 | 1.1 | • Fix xml namespaces<br>• VATNO format<br>• Added <iis:clientDelete/> information<br>• Add <msgQ/> to poll request answer |
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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 EPP-server.

## 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 .SE

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

.SE is an independent non-profit organisation, supporting the positive development of the Internet in Sweden. Through .SE's Internet Fund, the Foundation annually donates means to projects supporting the development and utilisation of the Internet.

# 2 Overview

## 2.1 General

The purpose of this document is to describe the existing EPP commands and policies of the .SE EPP-server. 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 EPP server; domain objects, contact objects and host objects. Domain objects contain all data necessary to represent internet domain names, contact objects contains all necessary data to represent persons or companies and host objects contains all data necessary to represent name servers in the registry.

The object commands contains 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.

Readers should also have a look at the EPP FAQ for further details.

## 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-1.0” |
| xmlns:secDNS | “urn:ietf:params:xml:ns:secDNS-1.1” |
| xmlns:iis | ”urn:se:iis:xml:epp:iis-1.2“ |

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 .SE registrar agreement. It is not technical information, but needs to be pointed out to all that are using the .SE EPP server.

According to the .SE 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
- VAT registration number (only for foreign legal entities within the EU)
- Address
- City

- Postal code
- 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 EPP server is 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 180 commands per minute. The check is performed on a rolling 60 second basis. If more than 180 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 180 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 10 minutes.
- On the test servers XML validation is performed and non validating commands are rejected. This is not done on the production servers. Production servers will try to execute commands to their best ability.

## 2.5 Client Certificate

The EPP server does require SSL connections with client certificates. The client certificate has to be issued from:

- VeriSign (email and SSL)
- Thawte (only SSL-certificates)
- GlobalSign (email and SSL)
- GeoTrust (email and SSL. Certificates issued by RapidSSL is not supported, although they are owned by GeoTrust)
- CACert

Before you can connect to the EPP server you need to send the public key in PEM format to registry@iis.se. You also need to fill in the form "*Registration of public key to connect to .SE:s EPP server*", you will find the form on the registrar web, http://registrar.iis.se. You will also find further information regarding the routine on the registrar web.

## 2.6 Data format

| | |
|---|---|
| <clTRID> | Max 63 characters (ASCII) |

## 2.7 RFC 5910 DNSSec Extension

The server follows RFC5910 section 2 “Migration fom RFC 4310”. Therefore the server specifies both extensions in the <greeting/> message and allows clients to specify both as <extURI/> in the <login/> command.

## 2.8 .SE EPP Test platform

.SE is providing a .SE EPP test platform where any registrar can test the EPP system. 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 them self’s.

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.

There is a web interface provided with the test system where registrars can simulate things like domain deactivations to generate all messages.

## 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 EPP protocol, .SE will put up information about the changes 6 month in advance, and will update the testplatform as soon as possible.

This gives every registrar possibility to test the new system, and so make sure that the epp client can work with the new protocol.

We do recommend that you start the test procedure early, to avoid last minute problems.

## 2.10 EPP Forum

.SE is not providing any support for EPP clients, but Registrars.se – the non profit trade organisation for registrars under the national top-domain .SE – is providing a forum, in both English and Swedish for help and questions about clients, epp protocol, and other relates questions.

The address is http://www.registrars.se/forum/

# 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>epp.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-1.0</extURI>
        <extURI>urn:ietf:params:xml:ns:secDNS-1.1</extURI>
        <extURI>urn:se:iis:xml:epp:iis-1.2</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. For DNSSec none, one or both namespaces following RFC 4310 and RFC 5910 can be given. See RFC 5910 section 2 for details.

**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-1.0</extURI>
          <extURI>urn:ietf:params:xml:ns:secDNS-1.1</extURI>
          <extURI>urn:se:iis:xml:epp:iis-1.2</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.

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 |

**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.se</domain:name>
        <domain:roid>DOMAIN-1234</domain:roid>
        <domain:status s="ok"/>
        <domain:registrant>abcdef0705-00001</domain:registrant>
        <domain:contact type="admin">abcdef0705-00002</domain:contact>
        <domain:contact type="tech">abcdef0705-00003</domain:contact>
        <domain:ns>
          <domain:hostObj>ns1.example1.se</domain:hostObj>
          <domain:hostObj>ns1.example2.se</domain:hostObj>
        </domain:ns>
        <domain:host>ns.example.se</domain:host>
        <domain:host>ns1.example.se</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>2000-11-01</iis:deactDate>
        <iis:delDate>2000-11-11</iis:delDate>
        <iis:clientDelete>0</iis:clientDelete>
      </iis: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="12346"/>
    <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.
- Max five admin contacts per domain name but stating an admin contact is optional.
- Max five tech contacts per domain name but stating a tech contact is optional.
- Max one billing contact per domain name but stating a billing contact is optional.

| Tagname/attribute | |
|---|---|
| <domain:name/> | 2-63 characters a-z,0-9,-. IDN domains in punycode – RFC 3492 |
| <domain:period/> | 1 to 10 years or 12 to 120 months are allowed |
| <domain:ns/> | Only <domain:hostObj/> is supported.<br>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/> | Minimum 9 characters, one of a-z, one of A-Z, one of 0-9 and at least one character not in a-z,A-Z,0-9. |
| <domain:status/> | Only clientHold is supported.<br>If clientHold is set the domain will no longer be accessible through DNS. |
| <iis:clientDelete/> | To cancel a domain before expiration (update command)<br>1 = cancel domain<br>0 = do not cancel domain<br>show if domain has been cancelled (info command)<br>1 = cancelled<br>0 = not cancelled |
| <domain:curExpDate/> | Only the date in format yyyy-mm-dd is allowed<br>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. |

## 6.2 DNSSEC

- More than one DS record for a domain name is okay
- Maximum are six DS record per domain
- Any algorithm number from 1 to 254 is ok
- Any digest type from 1 to 255 is ok

**DNSSEC-keys at .SE:** We strongly advise not to use RSA-MD5 as DNSKEY.

## 6.3 Valid Domain Name characters

.SE support domain names in idn or in latin.

Valid Domain Name characters that .SE supports is:

| Unicode | Character | UTF 8 | Name of letter | Comb |
|---|---|---|---|---|
| U+002d | - | 2d | Minus | All |
| U+0030 - U+0039 | 0-9 | 30 – 39 | Numbers | All |
| U+0061 - U+007a | a-z | 61 – 7a | Lowercase letters | A |
| U+00E1 | á | c3 a1 | a with acute | A |
| U+00E0 | à | c3 a0 | a with grave | A |
| U+01CE | ǎ | c7 8e | a with caron | A |
| U+00E2 | â | c3 a2 | a with circimflex | A |
| U+00E5 | å | c3 a5 | a with ring above | A |
| U+00E4 | ä | c3 a4 | a with diaeresis | A |
| U+00E6 | æ | c3 a6 | ligature ae | A |
| U+0107 | ć | c4 87 | c with acute | A |
| U+010D | č | c4 8d | c with caron | A |
| U+00E7 | ç | c3 a7 | c with cedilla | A |
| U+0111 | đ | c4 91 | d with stroke | A |
| U+00F0 | ð | c3 b0 | Eth | A |
| U+00E9 | é | c3 a9 | e with acute | A |
| U+00E8 | è | c3 a8 | e with grave | A |
| U+00EA | ê | c3 aa | e with circumflex | A |
| U+011B | ě | c4 9b | e with caron | A |
| U+00EB | ë | c3 ab | e with diaeresis | A |
| U+0259 | ə | c9 99 | schwa | A |
| U+01E7 | ǧ | c7 a7 | g with caron | A |
| U+01E5 | ǥ | c7 a5 | g with stroke | A |
| U+00ED | í | c3 ad | i with acute | A |
| U+00EC | ì | c3 ac | i with grave | A |
| U+00EE | î | c3 ae | i with circumflex | A |
| U+01D0 | ǐ | c7 90 | i with caron | A |
| U+00EF | ï | c3 af | i with diaeresis | A |
| U+01E9 | ǩ | c7 a9 | k with caron | A |
| U+0142 | ł | c5 82 | l with stroke | A |
| U+0144 | ń | c5 88 | n with acute | A |
| U+00F1 | ñ | c3 b1 | n with tilde | A |
| U+014B | ŋ | c5 8b | eng | A |
| U+00F3 | ó | c3 b3 | o with acute | A |
| U+00F2 | ò | c3 b2 | o with grave | A |
| U+00F4 | ô | c3 b4 | o with circumflex | A |
| U+01D2 | ǒ | c7 92 | o with caron | A |
| U+00F5 | õ | c3 b5 | o with tilde | A |
| U+00F6 | ö | c3 b6 | o with diaeresis | A |
| U+00F8 | ø | c3 b8 | o with stroke | A |
| U+0159 | ř | c5 99 | r with caron | A |
| U+015B | ś | c5 9b | s with acute | A |
| U+0161 | š | c5 a1 | s with caron | A |
| U+0163 | ţ | c5 a3 | t with cedilla | A |
| U+0167 | ŧ | c5 a7 | t with stroke | A |
| U+00FA | ú | c3 ba | u with acute | A |
| U+00F9 | ù | c3 b9 | u with grave | A |
| U+01D4 | ǔ | c7 94 | u with caron | A |
| U+00FC | ü | c3 bc | u with diaeresis | A |
| U+00FD | ý | c3 bd | y with acute | A |

| Unicode | Character | UTF 8 | Name of letter | Comb |
|---|---|---|---|---|
| U+017A | ź | c5 ba | z with acute | A |
| U+017E | ž | c5 b5 | z with caron | A |
| U+00FE | þ | c3 be | Thorn | A |
| U+0292 | ʒ | ca 92 | Ezh | A |
| U+01EF | ǯ | c7 af | ezh with caron | A |
| U+05D0 | א | d7 90 | Hebrew letter ALEF | B |
| U+05D0 + U+05B7 | אַ | d7 90 + d6 b7 | Hebrew letter ALEF + Hebrew point PATAH | B |
| U+05D0 + U+05B8 | אָ | d7 90 + d6 b8 | Hebrew letter ALEF + Hebrew point QAMATS | B |
| U+05D1 | ב | d7 91 | Hebrew letter BET | B |
| U+05D1 + U+05BF | בִ | d7 91 + d6 bf | Hebrew letter BET + Hebrew point RAFE | B |
| U+05D2 | ג | d7 92 | Hebrew letter GIMEL | B |
| U+05D3 | ד | d7 93 | Hebrew letter DALET | B |
| U+05D4 | ה | d7 94 | Hebrew letter HE | B |
| U+05D5 | ו | d7 95 | Hebrew letter VAV | B |
| U+05D5 + U+05BC | וּ | d7 95 + d6 bc | Hebrew letter VAV + Hebrew point DAGESH or MAPIQ | B |
| U+05D6 | ז | d7 96 | Hebrew letter ZAYIN | B |
| U+05D7 | ח | d7 97 | Hebrew letter HET | B |
| U+05D8 | ט | d7 98 | Hebrew letter TET | B |
| U+05D9 | י | d7 99 | Hebrew letter YOD | B |
| U+05D9 + U+05B4 | יִ | d7 99 + d6 b4 | Hebrew letter YOD + Hebrew point HIRIQ | B |
| U+05F2 + U+05B7 | ײַ | d7 b2 + d6 b7 | Hebrew ligature Yiddish double YOD + Hebrew point PATAH | B |
| U+05DB + +05BC | כּ | d7 9b + d6 bc | Hebrew letter KAF + Hebrew point DAGESH or MAPIQ | B |
| U+05DB | כ | d7 9b | Hebrew letter KAF | B |
| U+05DA | ך | d7 9a | Hebrew letter Final KAF | B |
| U+05DC | ל | d7 9c | Hebrew letter LAMED | B |
| U+05DE | מ | d7 9e | Hebrew letter MEM | B |
| U+05DD | ם | d7 9d | Hebrew letter Final MEM | B |
| U+05E0 | נ | d7 a0 | Hebrew letter NUN | B |
| U+05DF | ן | d7 9f | Hebrew letter Final NUN | B |
| U+05E1 | ס | d7 a1 | Hebrew letter SAMEKH | B |
| U+05E2 | ע | d7 a2 | Hebrew letter AYIN | B |
| U+05E4 + U+05BC | פּ | d7 a4 + d6 bc | Hebrew letter PE + Hebrew point DAGESH OR MAPIQ | B |
| U+05E4 + U+05BF | פִ | d7 a4 + d6 bf | Hebrew letter PE + Hebrew point RAFE | B |
| U+05E4 | פ | d7 a4 | Hebrew letter PE | B |
| U+05E3 | ף | d7 a3 | Hebrew letter Final PE | B |
| U+05E6 | צ | d7 a6 | Hebrew letter TSADI | B |
| U+05E5 | ץ | d7 a5 | Hebrew letter Final TSADI | B |
| U+05E7 | ק | d7 a7 | Hebrew letter QOF | B |
| U+05E8 | ר | d7 a8 | Hebrew letter RESH | B |
| U+05E9 | ש | d7 a9 | Hebrew letter SHIN | B |
| U+05E9 + U+05C2 | שׂ | d7 a9 + d7 82 | Hebrew letter SHIN + Hebrew point SIN DOT | B |
| U+05EA + U+05BC | תּ | d7 aa + d7 bc | Hebrew letter TAV + Hebrew point DAGESH OR MAPIQ | B |
| U+05EA | ת | d7 aa | Hebrew letter TAV | B |

You can not mix characters between latin characters (A) and Hebrew characters (B). A domain name with Hebrew characters can contain any of the above Hebrew characters (B) as well as minus and digits 0 to 9. Domain names with Latin characters can contain any of the above Latin characters (A) as well as minus and digits 0 to 9.

## 6.4 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.se</domain:name>
        <domain:name>example2.se</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.se</domain:name>
        </domain:cd>
        <domain:cd>
          <domain:name avail="0">example2.se</domain:name>
          <domain:reason>In use</domain:reason>
        </domain:cd>
      </domain:chkData>
    </resData>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>5431</svTRID>
    </trID>
  </response>
</epp>
```

## 6.5 Info

Follows RFC 5730 and RFC 5731 and RFC 4310 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 for the sponsoring client 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 whois state of the domain |

<iis:state/> and <iis:clientDelete/> will always be given, the other fields are optional and will be returned only if set.

## 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.se</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.se</domain:name>
        <domain:roid>DOMAIN-1234</domain:roid>
        <domain:status s="ok"/>
        <domain:registrant>abcdef0705-00001</domain:registrant>
        <domain:contact type="admin">abcdef0705-00002</domain:contact>
        <domain:contact type="tech">abcdef0705-00003</domain:contact>
        <domain:ns>
          <domain:hostObj>ns1.example1.se</domain:hostObj>
          <domain:hostObj>ns1.example2.se</domain:hostObj>
        </domain:ns>
        <domain:host>ns.example.se</domain:host>
        <domain:host>ns1.example.se</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>2000-11-01</iis:deactDate>
        <iis:delDate>2000-11-11</iis:delDate>
        <iis:state>expired</iis:state>
        <iis:clientDelete>0</iis:clientDelete>
      </iis:infData>
    </extension>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>5432</svTRID>
    </trID>
  </response>
</epp>
```

## 6.6 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" are 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 domain.

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.se</domain:name>
        <domain:authInfo>
          <domain:pw>2fooBAR-barFOO</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.se</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.se</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>
```

## 6.7 Create

Follows RFC 5730, RFC 5731 and RFC 4310.

<domain:period/> can be any value between 12 and 120 months. Additionally values of 1 to 10 years are 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>
      <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>example.se</domain:name>
        <domain:period unit="y">5</domain:period>
        <domain:ns>
          <domain:hostObj>ns1.example1.se</domain:hostObj>
```

```
          <domain:hostObj>ns2.example2.se</domain:hostObj>
        </domain:ns>
        <domain:registrant>jd-1234</domain:registrant>
        <domain:contact type="admin">sh-8013</domain:contact>
        <domain:contact type="tech">sh-8013</domain:contact>
        <domain:authInfo>
          <domain:pw>2fooBAR3+</domain:pw>
        </domain:authInfo>
      </domain:create>
    </create>
    <extension>
      <secDNS:create
       xmlns:secDNS="urn:ietf:params:xml:ns:secDNS-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:secDNS-1.0
       secDNS-1.0.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: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>
      <domain:creData
       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.se</domain:name>
        <domain:crDate>2009-09-29T00:00:00.0Z</domain:crDate>
        <domain:exDate>2014-09-29T00:00:00.0Z</domain:exDate>
      </domain:creData>
    </resData>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54321-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

## 6.8 Delete

Deletion of domains is not supported. See chapter 6.9 Update regarding <iis:clientDelete/>.

## 6.9 Update

Follows RFC 5730, RFC 5731 and RFC 4310. The following extensions have been added:

<secDNS:keyTag/> - When DNSSec extensions according to RFC 4310 are used, keyTag “0” will remove all DS posts.

<iis:clientDelete/> - Cancel a domain (1 = cancel, 0 = remove cancel). This flag is automatically set to zero if the domain is transferred.

**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:domain-1.0
       domain-1.0.xsd">
```

```
        <domain:name>example.se</domain:name>
        <domain:add>
          <domain:ns>
            <domain:hostObj>ns2.example2.se</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.se</domain:hostObj>
          </domain:ns>
          <domain:contact type="tech">sh-8013</domain:contact>
        </domain:rem>
        <domain:chg>
          <domain:registrant>sh-8013</domain:registrant>
          <domain:authInfo>
            <domain:pw>2BARfoo%=</domain:pw>
          </domain:authInfo>
        </domain:chg>
      </domain:update>
    </update>
    <extension>
      <secDNS:update
       xmlns:secDNS="urn:ietf:params:xml:ns:secDNS-1.0"
       xsi:schemaLocation="urn:ietf:params:xml:ns:secDNS-1.0
       secDNS-1.0.xsd">
        <secDNS:add>
          <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:add>
      </secDNS:update>
      <iis:update
       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:clientDelete>0</iis:clientDelete>
      </iis:update>
    </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>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54321-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

## 6.10 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. 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.se</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.se</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, it 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:STREET/>

This is required information if the contact has a PO Box or street address, otherwise optional. Max three tags can be given.

### 7.1.4 <CONTACT:CITY/>

This is required information. The field must contain information about which city the contact has their domicile.

### 7.1.5 <CONTACT:EMAIL/>

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

### 7.1.6 <CONTACT:PC/>

Postal code is required information. For Swedish addresses it must be exactly five digits 0-9 (no spaces). Otherwise 1 to 16 characters a-z, A-Z, 0-9, ",", "-" and space with at least one character other than space.

### 7.1.7 <CONTACT:CC/>

Country code is required information at it must be an ISO 3166 Alpha-2 country code.

### 7.1.8 <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

### 7.1.9 <CONTACT:DISCLOSE/>

If <contact:org/> is set protection from disclosure is not possible. If regarded as a Swedish sole proprietorship the contact is however protected from disclosure.

### 7.1.10 <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.

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.

| Tagname/attribute | Comment |
|---|---|
| <contact:id/> | Maximum length is 16 characters<br>Starts with at least two letters a-z,A-Z<br>Followed by 4 digits 0-9<br>Followed by a dash "-"<br>Followed by 1 to 9 digits 0-9<br><br>Recommended format is:<br>First 6 characters of <contact:org/> or <contact:name/><br>2 digit year, 2 digit month<br>And a index number after the dash<br>E. g. NORDEA0808-00001 |
| <contact:postalInfo/> | Every contact object can have 2 addresses, one international ("int") and one local ("loc"). The international address may only contain us-ascii while the local can contain a collection of other UTF-8 characters.<br>If the local and international <contact:postalInfo/> differ, the local is given precedence. The local address is mandatory. |
| <contact:name/> | 1 to 255 characters. This is required information |
| <contact:org/> | 1 to 255 characters<br>If specified the contact is assumed to be a company.. |
| <contact:addr/> | |
| <contact:street/> | At least 0 max 3 can be given<br>1 to 255 characters |
| <contact:city/> | 1 to 128 characters. This is required information. |
| <contact:sp/> | 1 to 128 characters |
| <contact:pc/> | For Swedish addresses it must be exactly 5 digits 0-9 (no spaces).<br>Otherwise 1 to 16 characters, a-z, A-Z, 0-9, ",", "-" and space with at least one character other than space. |
| <contact:cc/> | ISO 3166 Alpha-2 country codes. Country code is required information. |

| Tagname/attribute | Comment |
|---|---|
| <contact:voice/> | Required information.<br>Telephone numbers should be given in E.164.<br>Plus sign, ITU country code, dot, 1 to 14 digits<br>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/> | Is not supported |
| <contact:disclose/> | If <contact:org/> is set protection from disclosure is not possible.<br>The EPP server will not issue an error if protection from disclosure is tried anyway. |
| <iis:orgno/> | Starts with ISO 3166 Alpha-2 country code in square brackets.<br>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.<br>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/> | 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 Character sets for postalInfo

Every contact object can have 2 addresses, one international (”int”) and one local (”loc”). The international address may only contain us-ascii while the local can contain a collection of other UTF-8 characters.

Both types allows spaces.

### 7.2.1 INT ADDRESS TYPE ALLOWED CHARACTERS

| Unicode | Character | UTF 8 | Name |
|---|---|---|---|
| U+0020 | | 20 | Space |
| U+0021 | ! | 21 | Exclemation mark |
| U+0022 | ” | 22 | Quotation mark |
| U+0023 | # | 23 | Number sign |
| U+0024 | $ | 24 | Dollar sign |
| U+0025 | % | 25 | Percent sign |
| U+0026 | & | 26 | Ampersand |
| U+0027 | ’ | 27 | Apostrophe |
| U+0028 | ( | 28 | Left Parentheses |
| U+0029 | ) | 29 | Right Parentheses |
| U+002a | * | 2a | Asterisk |
| U+002b | + | 2b | Plus sign |
| U+002c | , | 2c | Comma |
| U+002d | - | 2d | Minus |
| U+002e | . | 2e | Dot |
| U+002f | / | 2f | Slash |
| U+0030 - U+0039 | 0-9 | 30 – 39 | Numbers |
| U+003a | : | 3a | Colon |
| U+003b | ; | 3b | Semicolon |
| U+003c | < | 3c | Less-than sign |
| U+003d | = | 3d | Equal sign |
| U+003e | > | 3e | Greater-than sign |
| U+003f | ? | 3f | Question mark |
| U+0040 | @ | 40 | At sign |
| U+0041 - U+005a | A-Z | 41 – 5a | Uppercase letters |
| U+005b | [ | 5b | Left Square brackets |
| U+005c | \ | 5c | Backslash |
| U+005d | ] | 5d | Right Square brackets |
| U+005e | ^ | 5e | Caret |
| U+005f | _ | 5f | Underscore |
| U+0060 | ` | 60 | Grave accent |
| U+0061 - U+007a | a-z | 61 – 7a | Lowercase letters |
| U+007b | { | 7b | Left Bracket |
| U+007c | \| | 7c | Vertical bar |
| U+007d | } | 7d | Right Bracket |
| U+007e | ~ | 7e | Tilde |

### 7.2.1 LOCAL ADDRESS TYPE ALLOWED CHARACTERS

Int Address type allowed characters plus the following

| Unicode | Character | UTF 8 | Description |
|---|---|---|---|
| U+00A7 | § | c2 a7 | Section sign |
| U+00B4 | ´ | c2 b4 | Acute accent |
| U+00B7 | · | c2 b7 | Middle dot |
| U+00C0 | À | c3 80 | Latin capital letter A with grave |
| U+00C1 | Á | c3 81 | Latin capital letter A with acute |
| U+00C2 | Â | c3 82 | Latin capital letter A with circumflex |
| U+00C3 | Ã | c3 83 | Latin capital letter A with tilde |
| U+00C4 | Ä | c3 84 | Latin capital letter A with diaeresis |
| U+00C5 | Å | c3 85 | Latin capital letter A with ring above |
| U+00C6 | Æ | c3 86 | Latin capital letter AE |
| U+00C7 | Ç | c3 87 | Latin capital letter C with cedilla |
| U+00C8 | È | c3 88 | Latin capital letter E with grave |
| U+00C9 | É | c3 89 | Latin capital letter E with acute |
| U+00CA | Ê | c3 8a | Latin capital letter E with circumflex |
| U+00CB | Ë | c3 8b | Latin capital letter E with diaeresis |
| U+00CC | Ì | c3 8c | Latin capital letter I with grave |
| U+00CD | Í | c3 8d | Latin capital letter I with acute |
| U+00CE | Î | c3 8e | Latin capital letter I with circumflex |
| U+00CF | Ï | c3 8f | Latin capital letter I with diaeresis |
| U+00D0 | Ð | c3 90 | Latin capital letter ETH |
| U+00D1 | Ñ | c3 91 | Latin capital letter N with tilde |
| U+00D2 | Ò | c3 92 | Latin capital letter O with grave |
| U+00D3 | Ó | c3 93 | Latin capital letter O with acute |
| U+00D4 | Ô | c3 94 | Latin capital letter O with circumflex |
| U+00D5 | Õ | c3 95 | Latin capital letter O with tilde |
| U+00D6 | Ö | c3 96 | Latin capital letter O with diaeresis |
| U+00D8 | Ø | c3 98 | Latin capital letter O with stroke |
| U+00D9 | Ù | c3 99 | Latin capital letter U with grave |

| Unicode | Character | UTF 8 | Description |
|---|---|---|---|
| U+00DA | Ú | c3 9a | Latin capital letter U with acute |
| U+00DB | Û | c3 9b | Latin capital letter U with circumflex |
| U+00DC | Ü | c3 9c | Latin capital letter U with diaeresis |
| U+00DD | Ý | c3 9d | Latin capital letter Y with acute |
| U+00DE | Þ | c3 9e | Latin capital letter THORN |
| U+00DF | ß | c3 9f | Latin small letter SHARP S |
| U+00E0 | à | c3 a0 | Latin small letter A with grave |
| U+00E1 | á | c3 a1 | Latin small letter A with acute |
| U+00E2 | â | c3 a2 | Latin small letter A with circumflex |
| U+00E3 | ã | c3 a3 | Latin small letter A with tilde |
| U+00E4 | ä | c3 a4 | Latin small letter A with diaeresis |
| U+00E5 | å | c3 a5 | Latin small letter A with ring above |
| U+00E6 | æ | c3 a6 | Latin small letter AE |
| U+00E7 | ç | c3 a7 | Latin small letter C with cedilla |
| U+00E8 | è | c3 a8 | Latin small letter E with grave |
| U+00E9 | é | c3 a9 | Latin small letter E with acute |
| U+00EA | ê | c3 aa | Latin small letter E with circumflex |
| U+00EB | ë | c3 ab | Latin small letter E with diaeresis |
| U+00EC | ì | c3 ac | Latin small letter I with grave |
| U+00ED | í | c3 ad | Latin small letter I with acute |
| U+00EE | î | c3 ae | Latin small letter I with circumflex |
| U+00EF | ï | c3 af | Latin small letter I with diaeresis |
| U+00F0 | ð | c3 b0 | Latin small letter ETH |
| U+00F1 | ñ | c3 b1 | Latin small letter N with tilde |
| U+00F2 | ò | c3 b2 | Latin small letter O with grave |
| U+00F3 | ó | c3 b3 | Latin small letter O with acute |
| U+00F4 | ô | c3 b4 | Latin small letter O with circumflex |
| U+00F5 | õ | c3 b5 | Latin small letter O with tilde |
| U+00F6 | ö | c3 b6 | Latin small letter O with diaeresis |
| U+00F8 | ø | c3 b8 | Latin small letter O with stroke |
| U+00F9 | ù | c3 b9 | Latin small letter U with grave |
| U+00FA | ú | c3 ba | Latin small letter U with acute |
| U+00FB | û | c3 bb | Latin small letter U with circumflex |
| U+00FC | ü | c3 bc | Latin small letter U with diaeresis |
| U+00FD | ý | c3 bd | Latin small letter Y with acute |
| U+00FE | þ | c3 be | Latin small letter THORN |
| U+00FF | ÿ | c3 bf | Latin small letter Y with diaeresis |
| U+0100 | Ā | c4 80 | Latin capital letter A with macron |
| U+0101 | ā | c4 81 | Latin small letter A with macron |
| U+0102 | Ă | c4 82 | Latin capital letter A with breve |
| U+0103 | ă | c4 83 | Latin small letter A with breve |
| U+0104 | Ą | c4 84 | Latin capital letter A with ogonek |
| U+0105 | ą | c4 85 | Latin small letter A with ogonek |
| U+0106 | Ć | c4 86 | Latin capital letter C with acute |
| U+0107 | ć | c4 87 | Latin small letter C with acute |
| U+010A | Ċ | c4 8a | Latin capital letter C with dot above |
| U+010B | ċ | c4 8b | Latin small letter C with dot above |
| U+010C | Č | c4 8c | Latin capital letter C with caron |
| U+010D | č | c4 8d | Latin small letter C with caron |
| U+010E | Ď | c4 8e | Latin capital letter D with caron |
| U+010F | ď | c4 8f | Latin small letter D with caron |
| U+0110 | Đ | c4 90 | Latin capital letter D with stroke |
| U+0111 | đ | c4 91 | Latin small letter D with stroke |
| U+0112 | Ē | c4 92 | Latin capital letter E with macron |
| U+0113 | ē | c4 93 | Latin small letter E with macron |
| U+0116 | Ė | c4 96 | Latin capital letter E with dot above |
| U+0117 | ė | c4 97 | Latin small letter E with dot above |
| U+0118 | Ę | c4 98 | Latin capital letter E with ogonek |
| U+0119 | ę | c4 99 | Latin small letter E with ogonek |
| U+011A | Ě | c4 9a | Latin capital letter E with caron |
| U+011B | ě | c4 9b | Latin small letter E with caron |
| U+011E | Ğ | c4 9e | Latin capital letter G with breve |
| U+011F | ğ | c4 9f | Latin small letter G with breve |
| U+0120 | Ġ | c4 a0 | Latin capital letter G with dot above |
| U+0121 | ġ | c4 a1 | Latin small letter G with dot above |
| U+0122 | Ģ | c4 a2 | Latin capital letter G with cedilla |
| U+0123 | ġ | c4 a3 | Latin small letter G with cedilla |
| U+0126 | Ħ | c4 a6 | Latin capital letter H with stroke |
| U+0127 | ħ | c4 a7 | Latin small letter H with stroke |
| U+012A | Ī | c4 aa | Latin capital letter I with macron |
| U+012B | ī | c4 ab | Latin small letter I with macron |
| U+012E | Ī | c4 ae | Latin capital letter I with ogonek |
| U+012F | ī | c4 af | Latin small letter I with ogonek |

| Unicode | Character | UTF 8 | Description |
|---|---|---|---|
| U+0130 | İ | c4 b0 | Latin capital letter I with dot above |
| U+0131 | ı | c4 b1 | Latin small letter dotless I |
| U+0136 | Ķ | c4 b6 | Latin capital letter K with cedilla |
| U+0137 | ķ | c4 b7 | Latin small letter K with cedilla |
| U+0139 | Ĺ | c4 b9 | Latin capital letter L with acute |
| U+013A | ĺ | c4 ba | Latin small letter L with acute |
| U+013B | Ļ | c4 bb | Latin capital letter L with cedilla |
| U+013C | ļ | c4 bc | Latin small letter L with cedilla |
| U+013D | Ľ | c4 bd | Latin capital letter L with caron |
| U+013E | ľ | c4 be | Latin small letter L with caron |
| U+0141 | Ł | c5 81 | Latin capital letter L with stroke |
| U+0142 | ł | c5 82 | Latin small letter L with stroke |
| U+0143 | Ń | c5 83 | Latin capital letter N with acute |
| U+0144 | ń | c5 84 | Latin small letter N with acute |
| U+0145 | Ņ | c5 85 | Latin capital letter N with cedilla |
| U+0146 | ņ | c5 86 | Latin small letter N with cedilla |
| U+0147 | Ň | c5 87 | Latin capital letter N with caron |
| U+0148 | ň | c5 88 | Latin small letter N with caron |
| U+014A | Ŋ | c5 8a | Latin capital letter ENG |
| U+014B | ŋ | c5 8b | Latin small letter ENG |
| U+014C | Ō | c5 8c | Latin capital letter O with macron |
| U+014D | ō | c5 8d | Latin small letter O with macron |
| U+0150 | Ő | c5 90 | Latin capital letter O with double acute |
| U+0151 | ő | c5 91 | Latin small letter O with double acute |
| U+0152 | Œ | c5 92 | Latin capital ligature OE |
| U+0153 | œ | c5 93 | Latin small ligature OE |
| U+0154 | Ŕ | c5 94 | Latin capital letter R with acute |
| U+0155 | ŕ | c5 95 | Latin small letter R with acute |
| U+0156 | Ŗ | c5 96 | Latin capital letter R with cedilla |
| U+0157 | ŗ | c5 97 | Latin small letter R with cedilla |
| U+0158 | Ř | c5 98 | Latin capital letter R with caron |
| U+0159 | ř | c5 99 | Latin small letter R with caron |
| U+015A | Ś | c5 9a | Latin capital letter S with acute |
| U+015B | ś | c5 9b | Latin small letter S with acute |
| U+015E | Ş | c5 9e | Latin capital letter S with cedilla |
| U+015F | ş | c5 9f | Latin small letter S with cedilla |
| U+0160 | Š | c5 a0 | Latin capital letter S with caron |
| U+0161 | š | c5 a1 | Latin small letter S with caron |
| U+0162 | Ţ | c5 a2 | Latin capital letter T with cedilla |
| U+0163 | ţ | c5 a3 | Latin small letter T with cedilla |
| U+0164 | Ť | c5 a4 | Latin capital letter T with caron |
| U+0165 | ť | c5 a5 | Latin small letter T with caron |
| U+0166 | Ŧ | c5 a6 | Latin capital letter T with stroke |
| U+0167 | ŧ | c5 a7 | Latin small letter T with stroke |
| U+016A | Ū | c5 aa | Latin capital letter U with macron |
| U+016B | ū | c5 ab | Latin small letter U with macron |
| U+016E | Ů | c5 ae | Latin capital letter U with ring above |
| U+016F | ů | c5 af | Latin small letter U with ring above |
| U+0170 | Ű | c5 b0 | Latin capital letter U with double acute |
| U+0171 | ű | c5 b1 | Latin small letter U with double acute |
| U+0172 | Ų | c5 b2 | Latin capital letter U with ogonek |
| U+0173 | ų | c5 b3 | Latin small letter U with ogonek |
| U+0174 | Ŵ | c5 b4 | Latin capital letter W with circumflex |
| U+0175 | ŵ | c5 b5 | Latin small letter W with circumflex |
| U+0176 | Ŷ | c5 b6 | Latin capital letter Y with circumflex |
| U+0177 | ŷ | c5 b7 | Latin small letter Y with circumflex |
| U+0178 | Ÿ | c5 b8 | Latin capital letter Y with diaeresis |
| U+0179 | Ź | c5 b9 | Latin capital letter Z with acute |
| U+017A | ź | c5 ba | Latin small letter Z with acute |
| U+017B | Ż | c5 bb | Latin capital letter Z with dot above |
| U+017C | ż | c5 bc | Latin small letter Z with dot above |
| U+017D | Ž | c5 bd | Latin capital letter Z with caron |
| U+017E | ž | c5 be | Latin small letter Z with caron |
| U+018F | Ə | c6 8f | Latin capital letter SCHWA |
| U+01B7 | Ʒ | c6 b7 | Latin capital letter EZH |
| U+01CD | Ǎ | c7 8d | Latin capital letter A with caron |
| U+01CE | ǎ | c7 8e | Latin small letter A with caron |
| U+01CF | Ǐ | c7 8f | Latin capital letter I with caron |
| U+01D0 | ǐ | c7 90 | Latin small letter I with caron |
| U+01D1 | Ǒ | c7 91 | Latin capital letter O with caron |
| U+01D2 | ǒ | c7 92 | Latin small letter O with caron |
| U+01D3 | Ǔ | c7 93 | Latin capital letter U with caron |

| Unicode | Character | UTF 8 | Description |
|---|---|---|---|
| U+01D4 | ǔ | c7 94 | Latin small letter U with caron |
| U+01E4 | Ǧ | c7 a4 | Latin capital letter G with stroke |
| U+01E5 | ǧ | c7 a5 | Latin small letter G with stroke |
| U+01E6 | Ǧ | c7 a6 | Latin capital letter G with caron |
| U+01E7 | ǧ | c7 a7 | Latin small letter G with caron |
| U+01E8 | Ǩ | c7 a8 | Latin capital letter K with caron |
| U+01E9 | ǩ | c7 a9 | Latin small letter K with caron |
| U+01EE | Ǯ | c7 ae | Latin capital letter EZH with caron |
| U+01EF | ǯ | c7 af | Latin small letter EZH with caron |
| U+0259 | ə | c9 99 | Latin small letter SCHWA |
| U+0292 | ʒ | ca 92 | Latin small letter EZH |
| U+1E80 | Ẁ | e1 ba 80 | Latin capital letter W with grave |
| U+1E81 | ẁ | e1 ba 81 | Latin small letter W with grave |
| U+1E82 | Ẃ | e1 ba 82 | Latin capital letter W with acute |
| U+1E83 | ẃ | e1 ba 83 | Latin small letter W with acute |
| U+1E84 | Ẅ | e1 ba 84 | Latin capital letter W with diaeresis |
| U+1E85 | ẅ | e1 ba 85 | Latin small letter W with diaeresis |
| U+1EF2 | Ỳ | e1 bb b2 | Latin capital letter Y with grave |
| U+1EF3 | ỳ | e1 bb b3 | Latin small letter Y with grave |

## 7.3 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>
```

## 7.4 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.

<contact:authInfo/> is not supported.

**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-12345</contact:roid>
        <contact:status s="ok"/>
        <contact:postalInfo type="loc">
          <contact:name>Example Example</contact:name>
          <contact:org>.SE (The IIS)</contact:org>
          <contact:addr>
            <contact:street>.SE (The IIS)</contact:street>
            <contact:street>Sthmlvägen 100</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.se</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:disclose flag="0">
          <contact:voice/>
          <contact:email/>
        </contact:disclose>
      </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>
```

## 7.5 Transfer

Contacts cannot be transferred.

## 7.6 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>.SE (The IIS)</contact:org>
          <contact:addr>
            <contact:street>Sthlmvägen 100</contact:street>
            <contact:street>Sthlmvägen 100</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.se</contact:email>
        <contact:disclose flag="0">
          <contact:voice/>
          <contact:email/>
        </contact:disclose>
      </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>
```

## 7.7 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>
```

## 7.8 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>Sthlmvägen 100</contact:street>
              <contact:street>Sthlmvägen 100</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="" />
          <contact:disclose flag="1">
            <contact:voice/>
            <contact:email/>
          </contact:disclose>
        </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>
```

## 7.9 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 zone CoreReg will automatically be set as sponsoring client.
- hosts outside the .se 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 zone cannot be deleted.
- For hosts in the .se 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 associated at all times.
- Host names can consist only of small letters
- Hosts in the .se zone can only be created if the parent zone is registered
- Hosts in the .se zone can only be created by the sponsoring client of the parent zone.

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

## 8.2 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.se</host:name>
        <host:name>ns2.example.se</host:name>
        <host:name>ns3.example.se</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.se</host:name>
        </host:cd>
        <host:cd>
          <host:name avail="0">ns2.example2.se</host:name>
          <host:reason>In use</host:reason>
        </host:cd>
        <host:cd>
          <host:name avail="1">ns3.example3.se</host:name>
        </host:cd>
      </host:chkData>
    </resData>
    <trID>
      <clTRID>ABC-12345</clTRID>
      <svTRID>54322-XYZ</svTRID>
    </trID>
  </response>
</epp>
```

## 8.3 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.se</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.se</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>
```

## 8.4 Transfer

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

## 8.5 Create

Follows RFC 5730 and RFC 5732. Hosts in the .se 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.se</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.se</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>
```

## 8.6 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.se</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>
```

## 8.7 Update

Follows RFC 5730 and RFC 5732.

<host:status/> is not supported

<host:name/> cannot be changed.

**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.se</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>
```

## 8.8 Renew

Host objects cannot be renewed.