



EPP

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EPP

- EPP = Extensible Provisioning Protocol
- XML = eXtensible Markup Language
- RFC 4930-4934, 4310, 4114, 3735
- Communication between Registrars and Registry
- Used by Nominet, Verisign, .EU, DNSBE, .PL, .CZ, AFNic, Aero, Mobi, Neulevel, Afilias, .LU, .NO, ...
- Extensions are part of the protocol
- All registries use extensions

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EPP Protocol – RFC 4930

- We stick to RFC as much as possible
- Very small extensions
- Object definitions by
RFC 4931, 4932, 4933

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Trust

- EPP puts full trust in Registrars
- EPP over TCP/IP SSL secured
- Firewall allows only Registrar systems

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Commands

- CHECK
- INFO
- CREATE
- UPDATE
- DELETE
- RENEW
- TRANSFER
- POLL

Not commands

- Get lists of domains, hosts, contacts
- Get lists of renewable domains
- No lists at all!

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EPP XML

```
<?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">dnssec.se</domain:name>
      </domain:info>
    </info>
    <clTRID>ABC-3</clTRID>
  </command>
</epp>
```

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Extensions

- Legal or organisational requirements
- Additional services

```
<extension>
  <iis:create xmlns:iis="urn:se:iis:xml:epp:iis-1.0"
    xsi:schemaLocation=" urn:se:iis:xml:epp:iis-1.0 iis-1.0.xsd">
    <iis:orgno>[CH]730602-1234</iis:orgno>
    <iis:vatno>DE8024050190</iis:vatno>
  </iis:create>
</extension>
```

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DNSSec extensions

- RFC 4310

```
<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>
```

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Update keys

```
<extension>
  <secDNS:update urgent="1"
    xmlns:secDNS="urn:ietf:params:xml:ns:secDNS-1.0"
    xsi:schemaLocation="urn:ietf:params:xml:ns:secDNS-1.0 C: secDNS-1.0.xsd">
    <secDNS:chg>
      <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:chg>
  </secDNS:update>
</extension>
```

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Add key

```
<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>12346</secDNS:keyTag>
        <secDNS:alg>3</secDNS:alg>
        <secDNS:digestType>1</secDNS:digestType>
        <secDNS:digest>38EC35D5B3A34B44C39B</secDNS:digest>
      </secDNS:dsData>
    </secDNS:add>
  </secDNS:update>
</extension>
```

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Delete keys

```
<extension>
  <secDNS:update
    xmlns:secDNS="urn:ietf:params:xml:ns:secDNS-1.0"
    xsi:schemaLocation="urn:ietf:params:xml:ns:secDNS-1.0 C: secDNS-1.0.xsd">
    <secDNS:rem>
      <secDNS:keyTag>12345</secDNS:keyTag>
    </secDNS:rem>
  </secDNS:update>
</extension>
```

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XML

- Biggest problem is XML
- You need to use a XML parser
- You need to use a XPath engine

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XML namespaces

```
<?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">dnssec.se</domain:name>
      </domain:info>
    </info>
    <clTRID>ABC-3</clTRID>
  </command>
</epp>
```

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XML namespaces

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<unusual:epp xmlns:unusual="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">
<unusual:command>
<unusual:info>
<strange:info xmlns:strange="urn:ietf:params:xml:ns:domain-1.0"
  xsi:schemaLocation="urn:ietf:params:xml:ns:domain-1.0 domain-1.0.xsd">
<strange:name hosts="all">dnssec.se</strange:name>
</strange:info>
</unusual:info>
<unusual:clTRID>ABC-3</unusual:clTRID>
</unusual:command>
</unusual:epp>
```

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EPP problems

- Trust without control
- Remove keys as defined in RFC is wrong
- No "remove all"
- No Registry to Registrar messages

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Experiences

- Small Registrars have little experience
- Large Registrars have experience but no time
- Stick to RFC
- Help them to help themselves!

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Thank you!

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