



DK Hostmaster A/S EPP Service Road Map Abstract

2014.02.17
Revision: 1.2



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Introduction

This document outlines possible candidates for future inclusion in the road map for the Extensible Provisioning Protocol (EPP) service offered by DK Hostmaster A/S.

The document aims to set a baseline for an initial hearing and further work with possible prioritization, specification and implementation. Future extensions and additions not mentioned in this document will still be evaluated.

EPP is based on a well-defined API and set of commands. For ease of communication and to reach beyond the technical aspects of EPP implementation details, the document describes a number of features sets grouped together based on relation and possible mutual relevance.

The document will attempt to stay clear of implementation details, since these are expected to be addressed as part of a specification phase. Some features do however have substantial technical implications and this will be mentioned where relevant.

Please note that this document is by no means a specification, it is to be regarded as a work paper; an abstract for dialogue on a possible EPP service road map proposal.

This document is founded in and is framed by the current General Terms and Conditions and Registrar Agreement. Implementation of some of the features may however nevertheless require changes to the current General Terms and Conditions and/or Registrar Agreement; these changes will be described in greater detail in the implementation phase.

Document History

Rev.	Pub. date	Author	Description
1.0	2014-02-04	Jonas B. Nielsen	Initial revision
1.1	2014-02-07	Jonas B. Nielsen	Corrected spelling errors and addressed feedback from review
1.2	2014-02-17	Jonas B. Nielsen	Minor cosmetic adjustment, spelling corrections and addressing of feedback from review



EPP Service

The DK Hostmaster EPP Service is based on SOA architecture. EPP implementation is regarded as a service offered to external parties requiring provisioning actions towards DK Hostmaster. Currently the service supports the following list of commands:

- hello
- login, including change password
- logout
- poll, including acknowledgement of messages
- info (contact/domain/host)
- check (contact/domain/host)
- create (contact/domain)

And the following commands are unimplemented at this time:

- update (contact/domain/host)
- delete (contact/domain/host)
- transfer (contact/domain)
- renew
- create host

Part of the feature groups listed in the next chapter take fact into account that some of the unimplemented commands are equivalent of a single feature or are mentioned as part of a single feature and again other commands are related to several features and these are therefore mentioned in several sections.

This clarification serves the purpose of describing the EPP service from a perspective, which is not only technical, but aims to provide maximum integration and benefits to its users and the general business area of domain name provisioning towards the Danish registry.

Features

Please note that the features listed are in no particular order. A lot of references are briefly mentioned; these are all collected in the chapter 'References' in the end of the document.

1. DNSSEC

Adoption of DNSSEC requires a high-level of cooperation between the Danish registry and its registrars. Supporting this via the EPP service would be most beneficial to all parties. The DNSSEC features of EPP are related to an existing extension, which allows handling of DS keys via the commands DOMAIN CREATE and DOMAIN UPDATE. This first is already deployed, but the latter is not implemented at this time.



This implementation would be under the regular and existing permission scheme, which would mean that DS records related to a domain, would be accessible for administration under the constraints imposed by the existing domain role system.

Changes to DS records would only be able to be completed using the DOMAIN UPDATE command and would require privileges with access to these records.

The Danish registry supports key (DS records) responsibility by a third party and there for it would be interesting to evaluate the opening of the EPP service to these parties. This concept is discussed on further details in the section on Name-server Administration below.

2. Domain Roles

The relations to contacts on a given domain are based on the role system. Changes to these are restricted, at the same time changes of these assets under the constraints imposed by the rules outlined in the General Terms and Conditions and the Registrar agreement does open up for an implementation where the DOMAIN UPDATE command for changes of these relations can prove useful for supporting end-user and registrar business.

3. Contacts

The EPP command CONTACT UPDATE opens up for the ability to change information on a contact object. This command is very locked down due to strict constraints on data, based on relationship, contents, validity and clearing, so whether this command is feasible for implementation with the Danish registry is unclear at this time, but it is currently listed here due to its importance and for the sake of having the discussion and getting proper clarification.

4. Name-server Administration

The EPP service is currently only available to registrars. There is however a large overlap between the groups of registrars and name-server administrators with the Danish registry and DK Hostmaster is interested in providing technical capable clients with interfaces to administer their assets with DK Hostmaster, so it is believed that the role of name-server responsible should also be allowed access to the EPP service as a whole to conduct administrative tasks related to name-server administration.

This would of course be under the constraints enforced on the role, but it would offer access to the following EPP commands:

- HOST CREATE
- HOST DELETE
- HOST UPDATE

Name-server change (see below) is also a candidate expected to be supported to some extent, but the actual specification of these commands would be able to define this ultimately. The issue boils down to the DOMAIN UPDATE command is working on the domain and not the host object, but operations such as re-delegation and internal re-delegation could be interesting to support from the perspective of name-server administration.

As mentioned in the DNSSEC section above, the opening of the service to other technical collaborators/clients could be beneficial.



5. Name-server Change

The ability to change the name-server associated with a given domain name is a key feature. Please see the section Name-server Administration above for details.

The point is listed here as a stand-alone, since it does not necessarily bind to general name-server administration and can be regarded as a unique feature, which also invites to a specific discussion on possible use and feasibility.

This utilizes the DOMAIN UPDATE command.

6. Registration Period Modification

Change of the domain registration period can be done utilizing the DOMAIN UPDATE command. The modification would however be limited to the privileges related to the roles and the domain name in question. Please refer to the General Terms and Conditions.

See also Domain Roles above and Domain Renewal below.

7. Integration with DK Hostmaster Pre-activation Service

DK Hostmaster has developed a pre-activation service, which is a service aimed at easing the required acceptance step with the Danish registry. This will be accomplished by presenting the end-user with an interface to acknowledge and accept the General Terms and Conditions etc. this will be on an optional basis and will be implemented as an extension to the CREATE DOMAIN command. Information on the pre-activation service is beyond the scope of this document.

8. Domain Renewal

The EPP command RENEW is somewhat special. It does not resemble any of the other commands and is a bit of a special case in regard to the Danish registry. At this time the business logic to support the behavior expected from this command is unimplemented in general with the Danish registry.

DK Hostmaster has not been provided with a viable business process description for what this feature should do and what would be expected from an implementation.

The current perception is that a RENEW command is only relevant for working on domain objects in context of the Danish registry. As the EPP specification outlines the command should be limited to authorized clients and it can be limited by object specific policies, meaning in this regard that a client performing a RENEW operation on a given domain would have to be related to this domain in the role of payer.

The result of the operation would be issuing an invoice to the relevant contact holding the role of payer, containing information on price etc. on the renewal based on the requested period.

The relevant domain name's registration period would in conjunction be extended with the same period.

See also Domain Roles above.



Epilog

The following EPP commands from the beginning of the document have not been mentioned in any of the points above, so they are listed here for clarification.

- transfer (contact/domain)
- delete (contact/domain)

The transfer commands do not make sense in a sole-registry model and this document does not serve to discuss registry models.

Delete contact and domain are under a lot of constraints and are therefore not regarded as relevant as part of the feature portfolio for the EPP service, this does however not mean that these are not up for discussion if you are able to provide substantial argumentation for a possible inclusion in the road map, see also the CONTACT UPDATE command, which have been identified for principal discussion on privileges and data ownership implemented in DK Hostmaster in concordance with the law on domain names and Danish legislation in general.

References

Here is a list of documents and references used in this document

- General Terms and Conditions: https://www.dk-hostmaster.dk/fileadmin/filer/pdf/generelle_vilkaar/general-conditions.pdf
- RFC: 5730 EPP Basic Protocol
- RFC: 5731 EPP Domain Name Mapping
- RFC: 5732 EPP Host Mapping
- RFC: 5733 EPP Contact Mapping
- RFC: 5910 Domain Name System (DNS) Security Extensions for the Extensible Provisioning Protocol
- DK Hostmaster A/S EPP Service Information: <https://www.dk-hostmaster.dk/english/tech-notes/epp/>