

The future of EPP

Current and future situation of EPP and its implementations

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This presentation: <http://go.dotandco.com/7>

Today Topics

- Net::DRI
- Current state of EPP: successful or unsuccessful?
- Future works towards EPP v2 ?
- Best Practices
- CREST : Cross-registry EPP Suite of Tests

Net::DRI

- Domain Registration Interface (but also more !)
- pure Perl object-oriented toolkit
- free software licence: GPL
- 58046 (37625) lines, 333 modules, 2323 functions
- 6+ years of work
- ~30 outside contributors (from simple bugfix to whole extensions)
- only open source toolkit with all EPP RFCs and many extensions, RRP, RRI, Whois, IRIS, etc.
- used by registrars, registries, end users

EPP is Successful !

- standardized by IETF: STD 69 + RFC 3915 + RFC 3735
- used by many TLDs
- noone thinking going back, some still upgrading to it
- migration adds benefit of data consolidations + procedures clean-up
- E is for Extensible... and extensions we have!

TLDs using EPP (in Net::DRI)

- 14 gTLDs:
- AERO ASIA BIZ CAT COM COOP INFO JOBS MOBI NAME NET ORG PRO TRAVEL
- 49 ccTLDs:
- AG AT AU BE BR BZ CA CC CH CM CO.CZ CX CZ EU FR GL GS HN HT IM IT KI LA LC LI LU ME MG MN MU NA NF NG NL NO NU PL PT RE SB SC SE SI TL TV UK US VC WS

EPP Extensions (68 Namespaces)

- 77% as http://X, 16% as urn:X, 7% as urn:ietf:X
- 1 namespace per TLD/per object type?
- `http://registrypro.pro/2003/epp/1/{av,rpro-epp}-2.0`
`http://rxsd.domain-registry.nl/sidn-ext-epp-1.0`
`http://www.afnic.fr/xml/epp/frnic-1.0`
`http://www.arnes.si/xml/epp/dnssi-1.1`
`http://www.dns.be/xml/epp/{dnsbe,nsgroup}-1.0`
`http://www.dns.lu/xml/epp/dnslu-1.0`
`http://www.dns.pl/NASK-EPP/extdom-1.0`
`http://www.dns.pt/xml/epp/{ptcontact,ptdomain}-1.0`
`http://www.enum.at/rxsd/ienum43-{options,result}-1.0`
`http://www.eurid.eu/xml/epp/{contact,domain,epp,eurid,nsgroup,registrar}-1.0`
`http://www.nic.at/xsd/at-ext-{contact,domain,epp,message,result}-1.0`
`http://www.nic.coop/contactCoopExt-1.0`
`http://www.nic.cz/xml/epp/contact-{1.4,1.5}`
`http://www.nic.cz/xml/epp/domain-{1.3,1.4}`
`http://www.nic.cz/xml/epp/nsset-1.2`
`http://www.nic.it/ITNIC-EPP/{extcon,extdom,extepp}-1.0`
`http://www.nic.name/epp/emailFwd-1.0`
`http://www.nominet.org.uk/epp/xml/nom-{account,contact,ns}-1.1`
`http://www.nominet.org.uk/epp/xml/nom-domain-2.0`
`http://www.nominet.org.uk/epp/xml/nom-notifications-1.2`
`http://www.norid.no/xsd/no-ext-{contact,domain,epp,host,result}-1.0`
`http://www.verisign-grs.com/epp/namestoreExt-1.1`
`http://www.verisign.com/epp/{idnLang,jobsContact,sync,whoisInf}-1.0`
`http://xmlns.domini.cat/epp/{contact,domain}-ext-1.0`
`http://xmlns.domini.cat/epp/defreg-1.0`
`urn:afilias:params:xml:ns:{asia,ipr}-1.0`
`urn:afilias:params:xml:ns:ext:{aero,mobi}-1.0`
`urn:au:params:xml:ns:auext-1.0`
`urn:X-au:params:xml:ns:auext-1.1`
`urn:centralnic:params:xml:ns:{ttl,wf}-1.0`
`urn:EPP:xml:ns:ext:rgp-1.0`
`urn:iana:xml:ns:idn`
`urn:ietf:params:xml:ns:{brdomain,brorg}-1.0`
`urn:ietf:params:xml:ns:cira-1.0`
`urn:ietf:params:xml:ns:neulevel-1.0`
`urn:ietf:params:xml:ns:poll-1.0`
`urn:se:iis:xml:epp:iis-1.1`

Registries Policies Variations

- most extensions come from the need to take into account local TLD

rules

- specific nature of registrant: eligibility requirements, specific operations
- renewal: implicit or explicit
- possible actions after deletion
- transfer rules & procedures
- ... this is all by design and expected!

EPP is Unsuccessful !

- specification work restarted after bumping into reality (RFC4310 on DNSSEC => RFC5910)
- some under-specified behaviors (updates with same content in add and rem sections)
- identifying server capabilities at greeting time (limits, available operations)
- multiple incompatible implementations of same feature by different registries (no mutualization)
- no trivial amount of work to migrate and ensure QoS
- new TLDs => new extensions?!
- policy changes (I18N, "whois" privacy, transfers, etc...)
- too much policy/business rules in core protocol?

Extensions Unlimited... (objects)

- emailfwd (info,create,update,delete,renew): NAME
- registrar (info): EU
- agreement (get): CA
- trademark/ipr : ASIA EU
- account (info,update,fork,merge,list_domains): UK
- av (create,check,info): PRO
- defreg (create,check,info,delete,update,renew) : CAT
- nsset: CZ
- nsgroup: EU, BE
- keygroup: EU

Extensions Unlimited... (actions)

- trade: FR SI DE EU LU
- recover: FR
- undelete: BE EU NL
- withdraw: AT NO
- reactivate: BE EU
- restore: LU (+ RFC3915)
- renounce: PT
- transfer_trade: LU
- transfer_restore: LU
- transfer_execute: AT
- transfer_quarantine: BE EU

- check_contact_for_transfer: EU
- remind: EU
- release: CentralNic

Extensions Unlimited... (common)

- everyone seems to need these...
- but everyone does it differently!
- result codes
- domain status codes
- notifications
- IDN script and/or language(s)

Extensions Unlimited... (wishes)

- non provisioning commands, reports+searches: domains, contacts, keys, etc... => IRIS ?
- managing registrar information, accounts balance
- "batch" operations (cf domain:check host:check contact:check)
- notifications of administrative/technical verifications
- future scheduling of operations: renew, delete, create?

Contacts attributes

- language
- vat
- mobile/sip
- eligibility requirements: birth, residency, nationality, etc...
- verification states
- type: EPP associations + individual/company
- sponsor/maintainer/proxy/responsible

Privacy Mess

- P3P like information in core EPP
- mandated by IESG review before going to RFCs
- very seldom used
- various extensions/contacts attributes used instead

EPP "options"

- contact postal data: internationalized (ASCII) vs localized (UTF-8)

- localized only: 19%
- internationalized only: 8%
- int or loc + int: 5%
- int or loc or loc + int: 68%
- host: as attribute (16%) or as object (84%)
- auth: pw only at most, + 1 rare case of domain:null

Working on EPP "2.0" ?

- technically reasonable
- to simplify and consolidate
- if broad participation by existing EPP users
- economically probably no incentive
- availability of software vs protocol beauty and simplicity

Clarifying current EPP situation

- foster work among registries+registrars+outside developers: ICANN ? IETF ? CENTR ?
- publicly document all extensions, publish them as internet drafts?
- announce new extensions and updates: regops@nlnetlabs.nl ?
- CREST

EPP new extensions "Best Practices"

- review the current existing extensions, specifically for action names and XML constructs
- do not forget the cLTRID in extensions!
- read & re-read RFC3735 ("Guidelines on extending...")
- consider working on the local data model at the same time
- involve "technical" community: IETF, registrars, other registries, outside developers,...
- plan for 2 years of work
- provide registrar software ? separate SDK and/or participate in Net::DRI ?

Registries Experiences

- .FR : " Our EPP project included a Registrar Task Force from day 1. Working with Net::DRI and other registrars enabled us to capitalize on existing skills and experience, and provided us with expert feedbacks, both on specifications and early releases. This was instrumental in the success of the launch of

our EPP registration interface, as it brought a significant increase in customer satisfaction, and faster uptake by registrars."

- .NL : "SIDN is very pleased that several parties developed a toolkit for the new EPP-interface in DRS5. These toolkits increased the acceptance of the EPP interface. Net::DRI which is available for many TLD's contributes considerable to the standardization that is so important for registrars worldwide. It especially helps large, international registrars to add easily a new TLD to their portfolio. "
- .CA : "The Canadian Internet Registration Authority (CIRA), the registry for the .CA top level domain, has nearly 1.5 million domains under registration. CIRA has undertaken a rewrite of its registry system to use the de facto industry standard Extensible Provisioning Protocol (EPP), and has been simplifying its policies and procedures to make it easier to register and manage .CA domains. Through partnership with Patrick Mevzek and DotAndCo, CIRA has benefited by having its extensions added to the Net::DRI library. While integrating its extensions, DotAndCo was able to identify areas of improvement for CIRA's service; additionally, it has proved a useful as library for some of CIRA's diagnostic and monitoring devices. Net::DRI is a great choice for registrars wishing to integrate with many top level domain registries, including CIRA. "

CREST

- Cross Registry EPP Suite of Tests
- automated tests to assess conformity to RFCs + Best Practices
- same idea as ZoneCheck for domain names
- performance tests also possible

Thanks

- Dr Eberhard Lisse
- Local & remote audience of this talk
- Authors of RFCs on EPP, discussions on ietf-provreg & regops
- Net::DRI sponsors, users and contributors

Links

- this presentation: <http://go.dotandco.com/7>
- <http://www.dotandco.com/services/software/Net-DRI/>
- Other software & services: <http://www.dotandco.com/services/software/>
- Interested in gTLDs registries and registrars statistics ? See http://www.dotandco.net/ressources/icann_registries/ and http://www.dotandco.net/ressources/icann_registrars/