

FRED developments & plans

CZ.NIC

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Agenda

- What is FRED and where is FRED deployed
- MojeID project
- Recent FRED enhancements
 - Auditing enhancements
 - Messaging enhancements
 - Contact data validation
- Plans

What is FRED

- Open source registry software running .CZ developed in CZ.NIC
- Based on open source tools - postgresql, apache, omniorb
- Running .CZ production since October 2007
- Features: registrars, epp, zonefile generation, whois, dnssec
- Key is modularity and speed (main part in c/c++)

Where is FRED deployed?

- 6 production deployments
 - <2010: Czech republic, Angola, Tanzania,
 - =2010: Faroe islands, Costa Rica, Estonia
- Several testing deployments
- Different additions and modification:
 - Registry as the only registrar, own web frontend (Angola, Costa Rica)
 - EPP modifications (Estonia)

MojeID project

- Presented at last ccNSO tech day in Cartagena
 - <http://goo.gl/DXUhx>
 - <http://www.mojeid.cz>
- Can we found any usage for our huge contact database?
- Can we extend from domain registry to identity registry?
- We deployed distributed authentication technology called OpenID for our domain owners and admins
- We allowed to use this feature only for validated contacts:
 - Basic validation – sending sms, email and letter to contact data
 - Extended validation – checking identity card in our office
- MojeID drove many FRED changes in 2010

Auditing enhancements

- Simple prerequisite - log every EPP request
- Simplest solution - one plain table dedicated for storing requests
- In 2 years (95% of database size were these logs)
- Problems with backups for hundreds of gigabytes
- Low speed when searching for particular requests
- Tied to EPP - no logging for any other interfaces (whois)

Auditing enhancements

- We separated logs into dedicated component using dedicated database
- We redesigned database structure for requests using postgresql partitioning mechanism
 - size of database tables is kept constant
 - speed of searching requests is much better
 - monthly partitions can be moved independently in/out of the system
- We proposed general model for storing different kind of requests so now every request/response is logged for each registry interface (epp, whois, administration, openid,...)
- New services can use auditing component out of the box

Messaging enhancements

- Contacts in registry needs to be notified about certain events (expirations, changes,...)
- We had emails and independent pdf generator for snail mail letters (printed, completed and shipped manually)
- Necessity of another communication channels (sms)
- Automation of snail mail expedition

Messaging enhancements

- We proposed general model of message, communication channel and sending engines
- We implemented sending engines for sms and snail mail letters
 - one local company has http interface for snail mail services
 - another local company has http interface for sending sms
- Still missing is integration of old plain email into this new framework
- Promising future (notifications about expiration via sms? jabber?)

Contact data validation

- Several new states were added to contact that describe validation status (basic, intermediate or full validation)
- New mechanism for authorized changes
 - Request for setting new validation status is issued
 - Messages containing PINs are sent to email and sms/letter
 - When PINs are filled correctly request is processed and status is set

Plans

- Lot of changes under the hood
- Cleaning architecture
 - Even more modular and more extensible system
- Combined prepaid/postpaid invoicing model
- Annual reminder email to contact in registry
 - List of data we keep about him
 - A new communication channel to domain owners



Questions?

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