FRED update

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What is FRED?

- Open source domain registry solution
- EPP, DNSSEC, WHOIS, RDAP
- Developed (and used) by CZ.NIC since 2006
- Just released version 2.35
- https://fred.nic.cz
New website with map of usage
New platforms

- Binary packages available for LTS Ubuntu (14.04 and 16.04) and latest Fedora versions (F26 and F27)

- We added packages for EPEL7:
  - Red Hat Enterprise Linux 7
  - CentOS 7
• WHMCS is commercial tool used by many registrars
  • Various plugins for registry systems
• **Plugin for FRED** was created by Michael Musya from Afriregister
• Need some more testing
• **https://github.com/mmycool/FRED-WHMCS-EPP-Registrar-Module**
New documentation

  - Features
  - Architecture Description
  - Administration Manual
  - EPP reference guide
- Sources - https://github.com/CZ-NIC/fred-docs
- Comments or contribution welcomed – survey:
  - https://goo.gl/forms/5meQ0qLbSiwSu0y22
Automated DNSSEC

- Implementation of RFC7244 and RFC8078 in FRED
- Registry is taking responsibility for managing DS records publication when domain publishes CDNSKEY records
- Best used with our Knot DNS authoritative server with automated DNSSEC signing
New WebWhois

- Old application based on SimpleTal
  - One big template, mixed ENUM and regular domains
  - Hard to customize
- New solution is regular Django application
  - Easy integration into another Django project
    - Still can be used as a standalone application
  - Better structure of template files
Digitally signed WHOIS output

- PDF output signed with configured key – can be used as more credible evidence
Updated RDAP

- Migration to stable version of Django framework
- Configuration clean-up
- New deployment of RDAP in Costa Rica
  - IANA tables (.CZ, .AR, .BR, .COM, .NET, .CR)
Refactoring

- EPP protocol backend completely rewritten
- Migration of all C++ code to C++14 standard
- Updated testing framework
- Faster implementation of new features in the future
Postal address in EPP

• Two meaning of “address”:
  • For identification – permanent residency address
  • For communication – location of a mailbox

• Distinction implemented in data model because of our identity service mojeID some time ago

• Now as a new EPP extension available also for registrars
Mail archive compression

- FRED stores all e-mail communication that it generates
  - Full e-mail content as a text, huge amount of data to take care of, slow fulltext search only
- New version only stores context parameters of template in `jsonb` field
  - Reduction to 1/5 of previous size
  - Templates are now versioned
  - PostgreSQL >= 9.4 must be used
Hashing of EPP password

- Used as second factor after TLS client certificate authentication
- Historically stored in database in plaintext
- Now hashed using PBKDF2 SHA512
- There is no impact on registrars upon upgrade
Source code on GitHub

Future plans

- New web administration
  - Change of framework from CherryPy to Django
- More flexible price list
  - Different prices for registrar groups
- Default setup cleanup
  - Some default templates still reference CZ.NIC
T-Shirts – the missing feature
Thank You

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