FRED update

ICANN61 – TechDay – Puerto Rico

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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**

New WHMCS plugin

- WHMCS is commercial tool used by many registrars
  - Various plugins for registry systems
- **Plugin for FRED** was created by Michael Musya from Afriregister
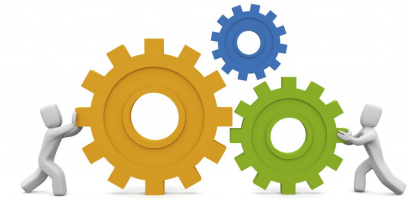- Need some more testing
- https://github.com/mmycool/FRED-WHMCS-EPP-Registrar-Module

New documentation

- https://fred.nic.cz/documentation/html/
  - 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

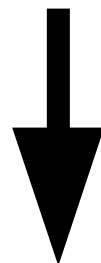- PDF output signed with configured key – can be used as more credible evidence

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
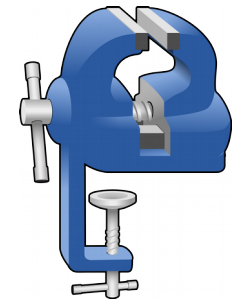
- FRED stores all e-mail communication that it generates

  - 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

- https://fred.nic.cz/documentation/html/Architec ture/SourceCode.html
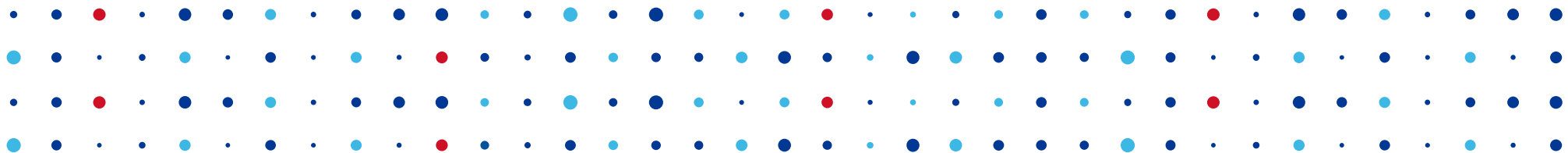
Future plans

- 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

FRED

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