

FRED update



F R E D

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>



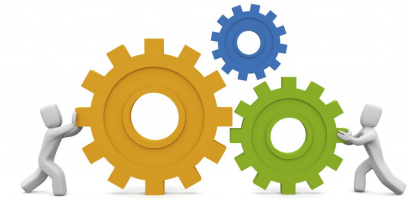
New documentation



- <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

cz.nic | CZ DOMAIN
REGISTRY

The Record statement from the Domain registry .cz
These data are valid for 10/03/2018 03:01:10

Domain Name

Identifier	nic.cz
Registered since	30.10.1997
Last update date	22.11.2016
Expiration date	15.03.2027

Holder

Handle	CZ-NIC
Organization	CZ.NIC, z.s.p.o.
Name	CZ.NIC, z.s.p.o.
Company reg. No	67985726
Address	Milesovska 1136/5, 130 00 Praha 3, CZ

Administrative contacts



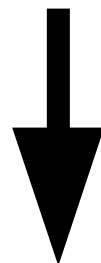
Updated RDAP

- 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



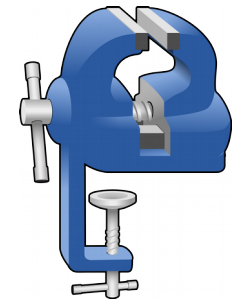
Postal address in EPP



- 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 mojID 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/Architecture/SourceCode.html>

A screenshot of a GitHub repository page for 'CZ-NIC / fred-server'. The page shows the repository name, navigation tabs (Code, Pull requests, Projects, Insights), and repository statistics (9,879 commits, 1 branch, 9 releases, 8 contributors, GPL-2.0 license). A list of files and folders is displayed, including 'config', 'contrib/fedora', 'debug', 'doc', 'init-scripts', 'm4', and 'src', each with a brief description and a commit date.

This repository Search Pull requests Issues Marketplace Explore

CZ-NIC / fred-server Watch 2 Star 1 Fork 0

<> Code Pull requests 0 Projects 0 Insights

FRED subproject: C++ CORBA servers (back end) for the core registry functionality and a CLI administration tool

9,879 commits 1 branch 9 releases 8 contributors GPL-2.0

Branch: master New pull request Create new file Upload files Find file Clone or download

Jiri Sadek Merge branch '18100-mail-archive-params-only' Latest commit cas2328 25 days ago

config	Ticket #18680 - Record statement interface (original impl.)	6 months ago
contrib/fedora	Ticket #20760 - fixing inconsistencies in separator in requiremnts	2 months ago
debug	list of valgrind suppressions for omniORB internal memory errors	9 years ago
doc	Ticket #18387 - move everything somewhere else	3 months ago
init-scripts	Ticket #20764 - Change of testing client certificate/key for epp	2 months ago
m4	Add local ax_check_compile_flag.m4	3 months ago
src	Ticket #18100 - Adapt to renamed column mail_type_id	26 days ago



Future plans

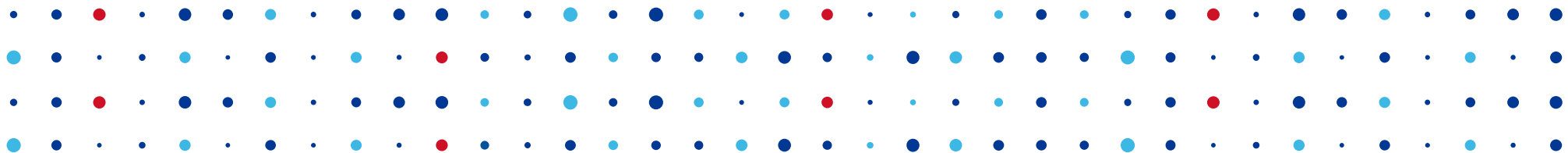


- New web administration
 - Change of framework from CherryPy to Django
- More flexible price list
 - Different prices for registrar groups
- Default setup cleanup
 - Some default templates still reference CZ.NIC



T-Shirts – the missing feature





Thank You



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