

Registry architecture

Jaromir Talir • jaromir.talir@nic.cz • 31.05.2016



Agenda

- Database
- Servers
 - Application server
 - Internal processes
 - EPP server, WHOIS server, WEB server
- Clients
 - EPP client, WHOIS client
- HW architecture



Database

- Provides storage for domains, contacts, nameservers, registrars, credit, invoices
- Free alternatives: MySQL, PostgreSQL
- Paid versions: Oracle, MS SQL
- Usually it's registry software decision



Database

- Knowledge how to operate database
- SQL to statistics
- Backup - to recovery after crash
- Replication – to failover switch
- Log inspection – look for long queries, error queries



Servers

- Business logic of registry.
- Wrapping SQL queries into functions
- One server process (CoCCA) or multiple server processes (FRED)
 - More components can bring complexity
 - More components can bring scalability, stability, security



Servers – periodical processes

- Domain expirations, deactivations, removals
- Registrant notifications
- Payments checks
- Zonefile generation



Servers – EPP interface

- Accept TCP/SSL communication on port 700
 - Should be opened just for registrars
- Parse XML EPP requests
- Process requests in database
- Send XML EPP responses



Servers – WHOIS interface

- Accept TCP communication on port 43
- Parse WHOIS requests
- Process requests in database
- Send WHOIS responses
- Can be readonly



Servers – WEB interface

- Accept HTTP communication on port 80
- Registrar interface
 - Alternative to EPP
- Registry administration interface
 - See what's happening, registrar management
- Registrant interface
 - Authinfo requests, Domain locks requests



Servers – CLI interface

- Command line interface for configuration and customization
- Better for system integration
- FRED CLI tools:
 - fred-admin – i.e. credit management
 - genzone-client – zone file generation



Clients - EPP

- Two forms
 - Development libraries (Python, PHP,...)
 - Command line application
- Depends on EPP server standardization
 - Google for standard EPP client
 - Can be part of registry solution (fred-client)

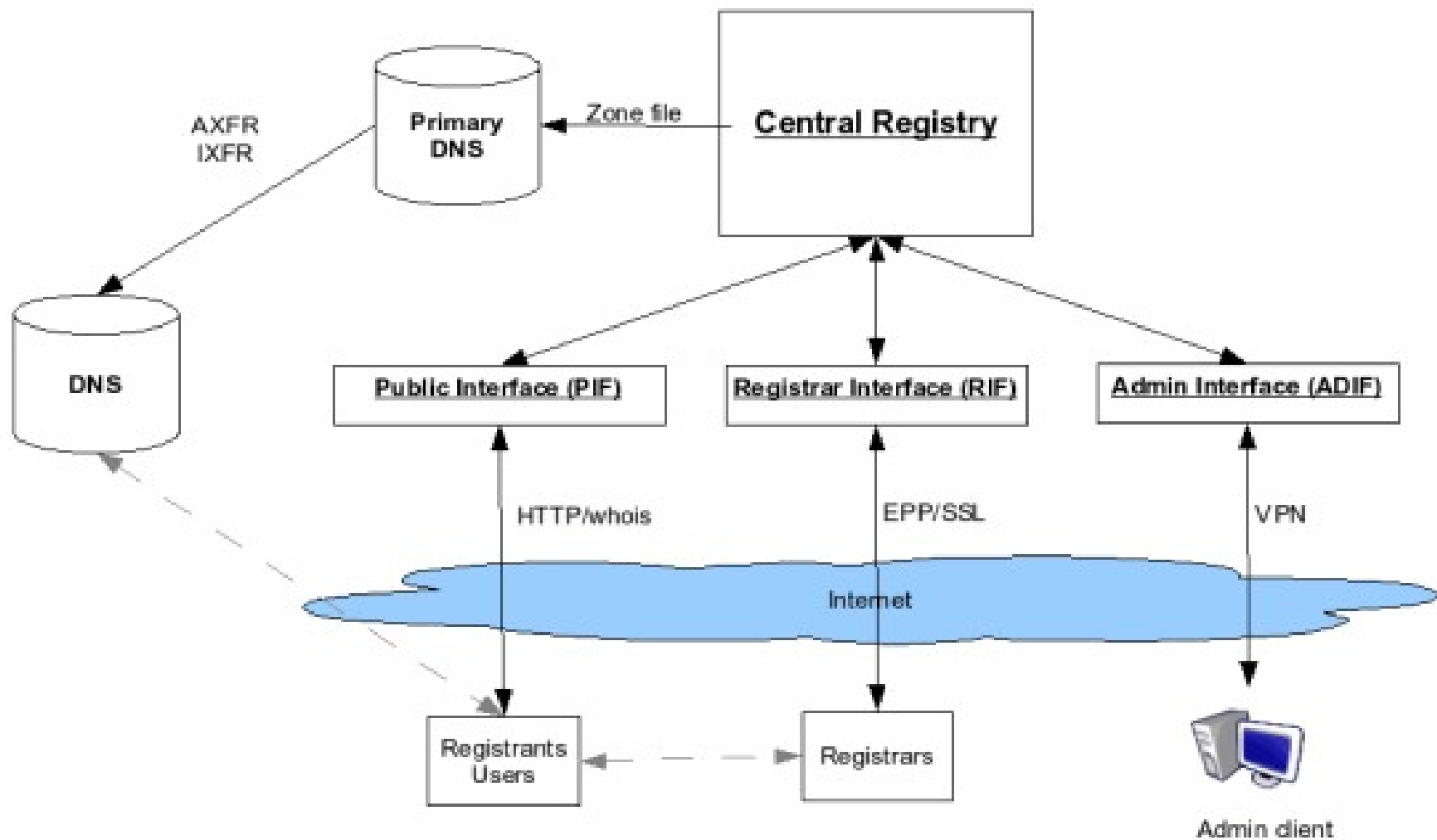


Clients – WHOIS, WEB

- WHOIS client is standard part of most operating systems
- WEB client is any browser (firefox, chrome, internet explorer,...)



Schema

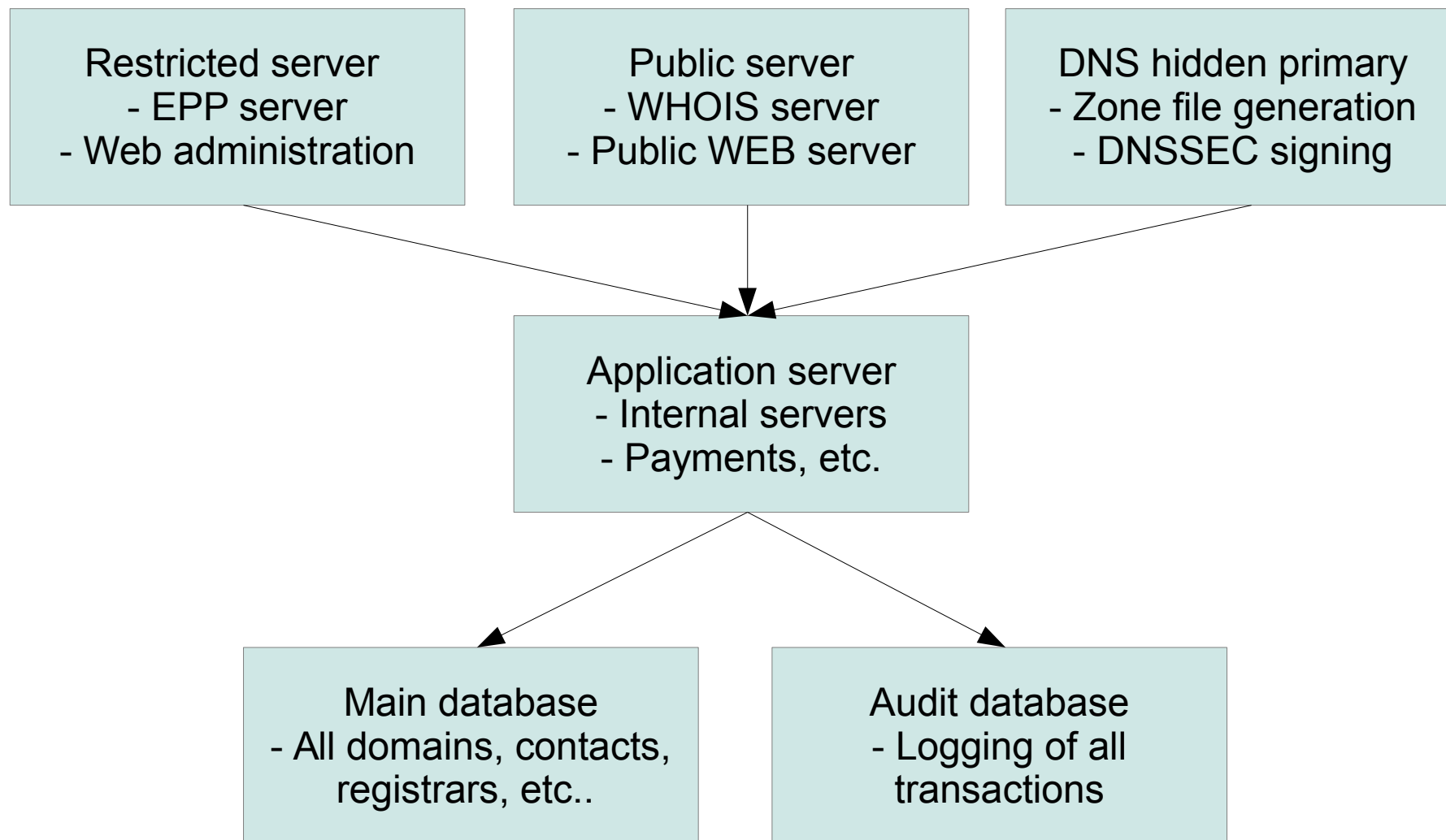


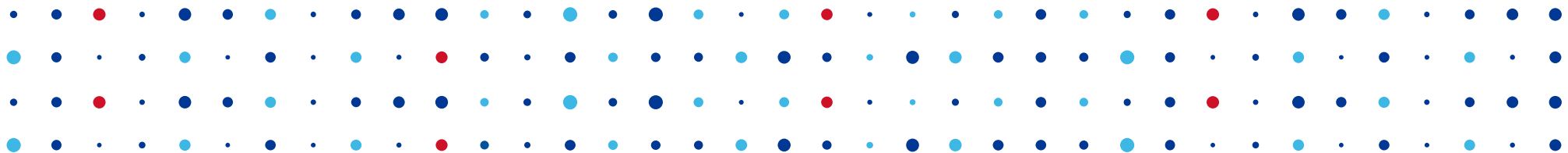
HW architecture

- One server or multiple servers?
- Number of servers mainly depends on expected:
 - Number of domains
 - Number of queries/time period
- Also depends on component architecture of registry



HW architecture (FRED in .CZ)





Thank You

Jaromir Talir • jaromir.talir@nic.cz

