DNS Automation: Catalog Zones

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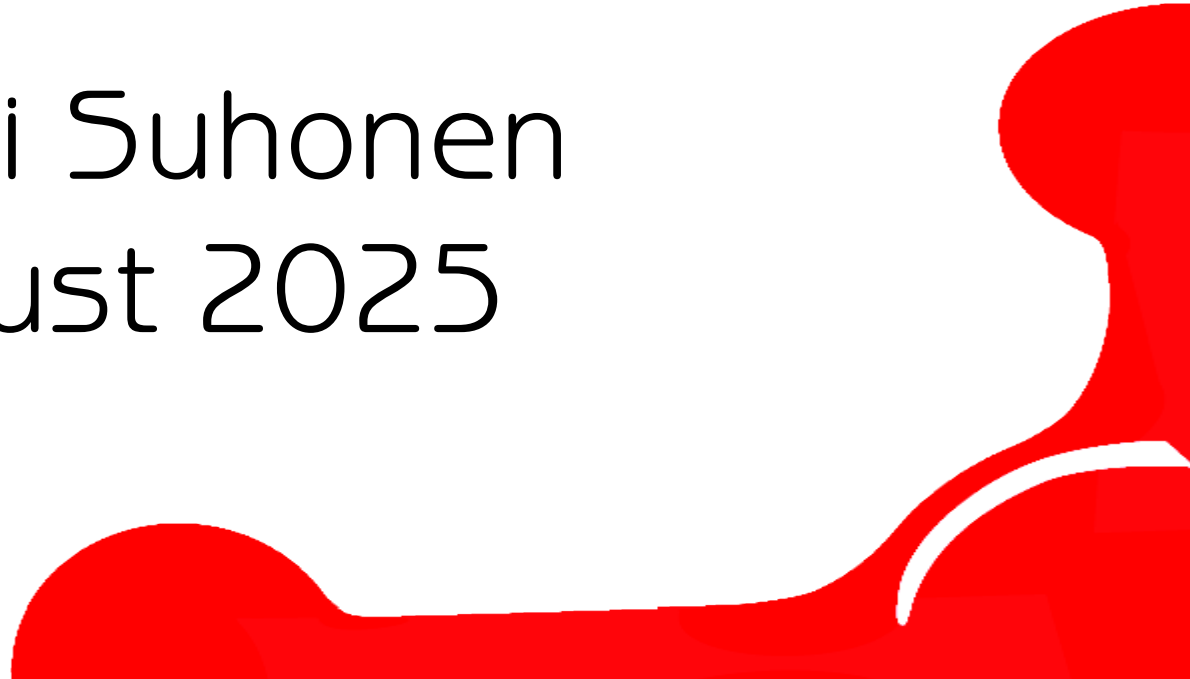
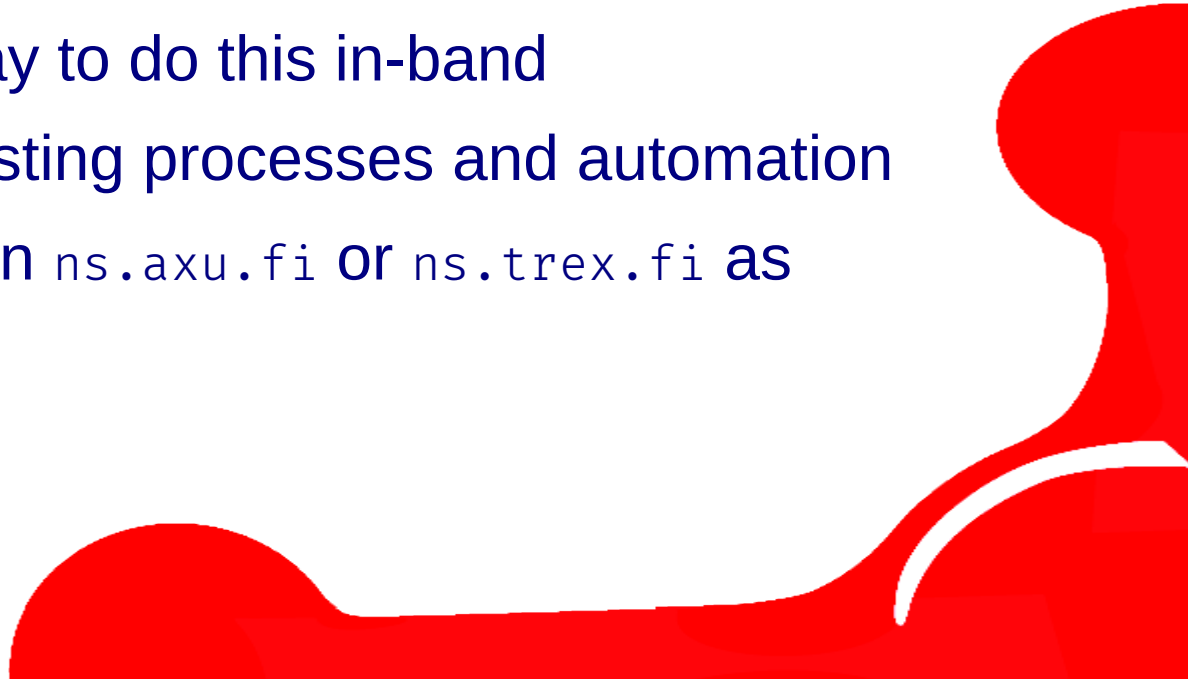


What's This All About?

- Adding and removing zones on secondaries has to be done out-of-band
  - Especially if it's somebody else's server
- RFC9432 introduces a way to do this in-band
- Needs integration into existing processes and automation
- I'm offering secondaries on `ns.axu.fi` or `ns.trex.fi` as rewards :)



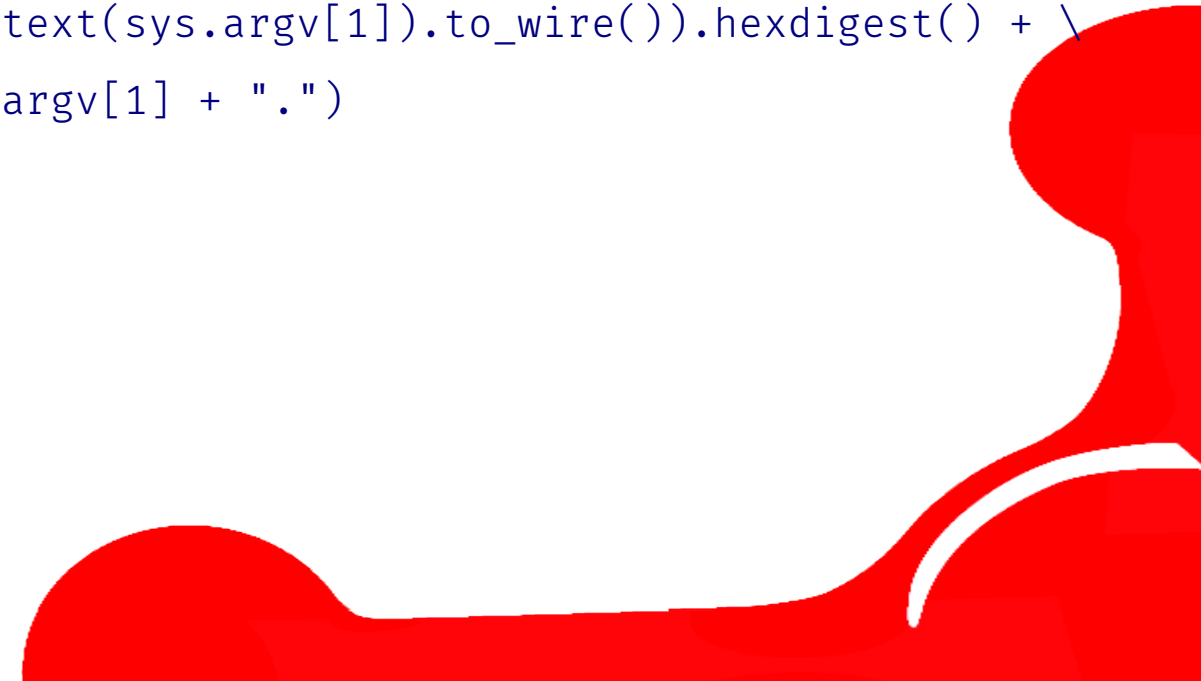
Basic Concepts

- Catalog Zone: lists zones and related configuration
- Member Zone: one of the zones in the Catalog
- Member Label: unique deterministic placeholder for per-zone configuration

```
example-catz.invalid.              IN SOA  ...
version                            IN TXT  “2”
primaries.ext                      IN A    192.0.2.53
MEMBERLABEL1.zones                 IN PTR  example.com.
MEMBERLABEL2.zones                 IN PTR  example.net.
primaries.ext.MASTERLABEL2.zones   IN A    192.0.2.54
```

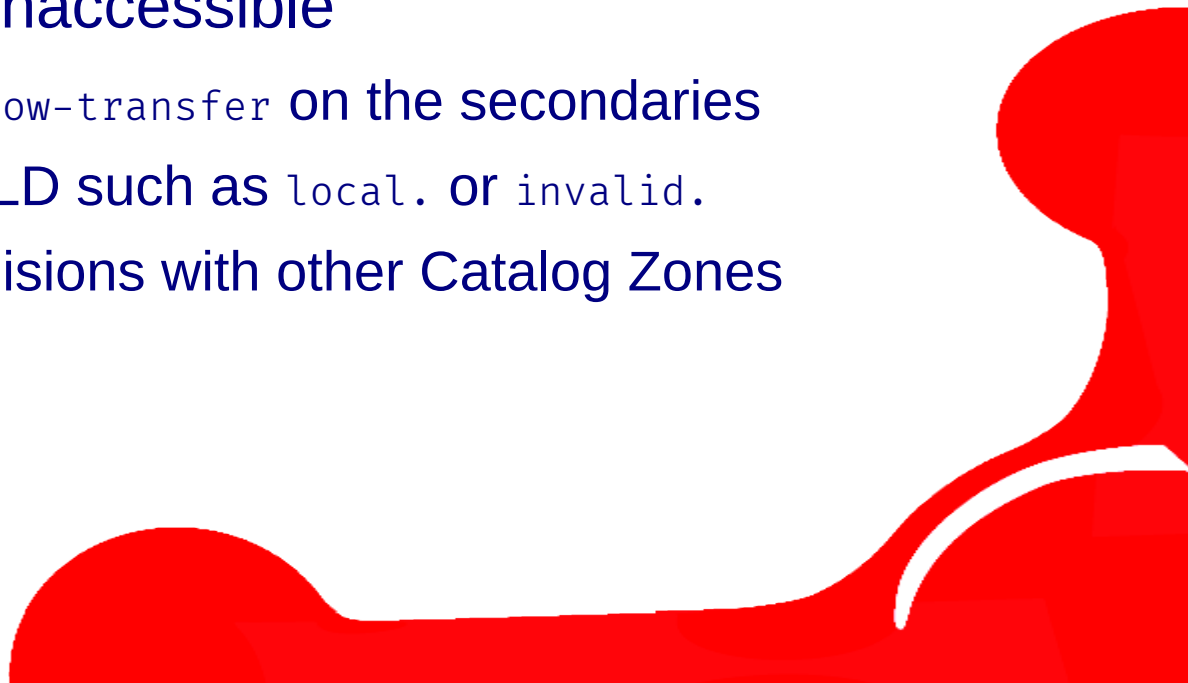
Label Generation Example

```
#!/usr/bin/env python3
# printf “\7example\3com\0” | openssl sha1
import dns.name, hashlib, sys
print(hashlib.sha1(dns.name.from_text(sys.argv[1]).to_wire()).hexdigest() + \
        ".zones\tIN PTR\t" + sys.argv[1] + ".")
```



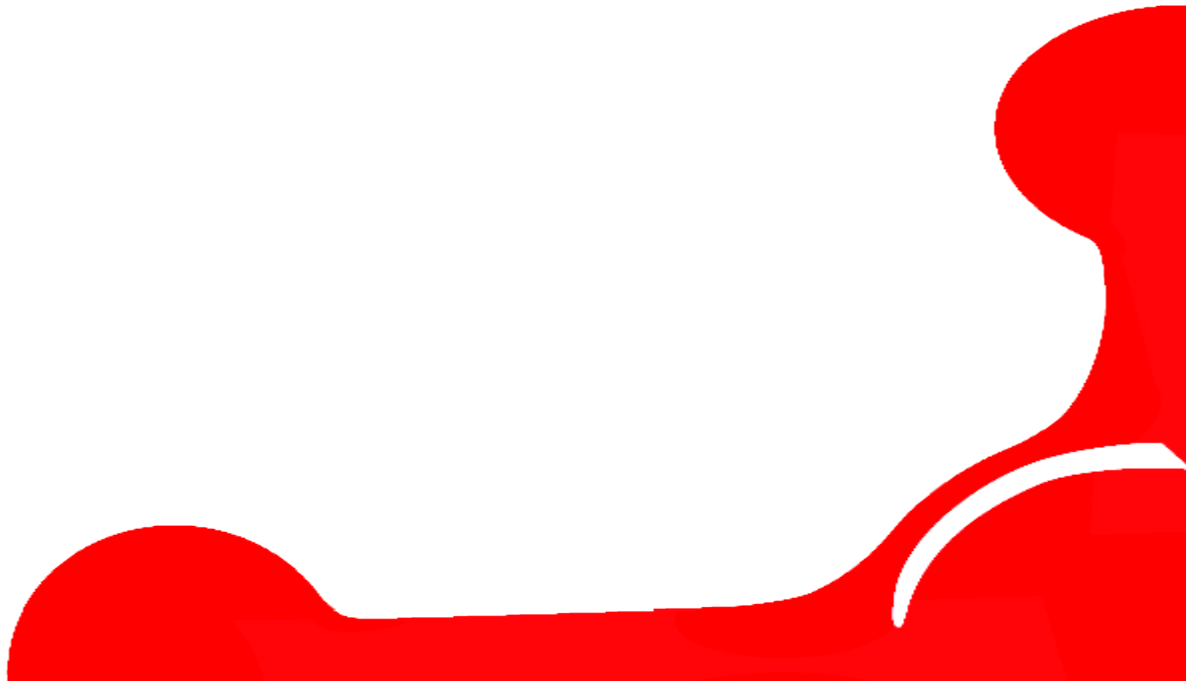
Security Considerations

- TSIG or TLS for transfers
- Member Zone collisions: first come first served
- Catalog Zone should be “inaccessible”
  - Empty `allow-query` and `allow-transfer` on the secondaries
  - Under some non-global TLD such as `local.` or `invalid.`
  - Unique name to avoid collisions with other Catalog Zones



Thank you!

Questions?



Config Example: Bind9

- To do...