

Building infrastructure for .UA ccTLD registry by CZ.NIC

UADOM conference 2022

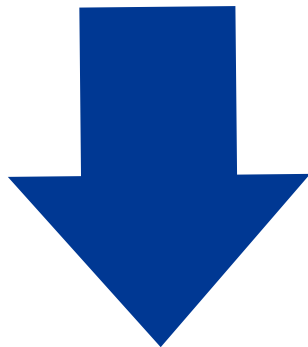
Tomáš Hála • 1.12.2022

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Introduction

How can we help UA besides money?

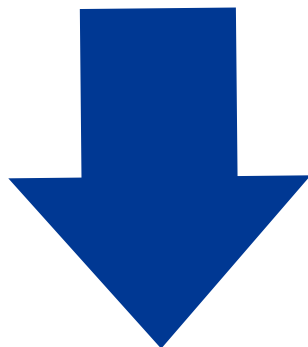
- We know how to run registry & robust DNS infrastructure
- We know how important it is to protect ccTLD



- We will do what we know and what we can to not let you down!

What can we do more specifically?

- Registry itself is usually proprietary and quite complex system
- DNS on the other way is very standard service



- We can just provide hosting for the registry (or its components)
- We can build robust DNS location

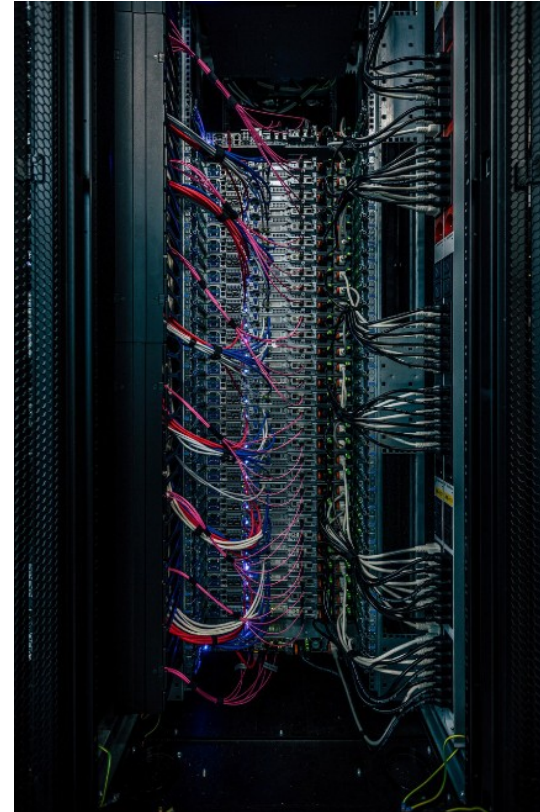
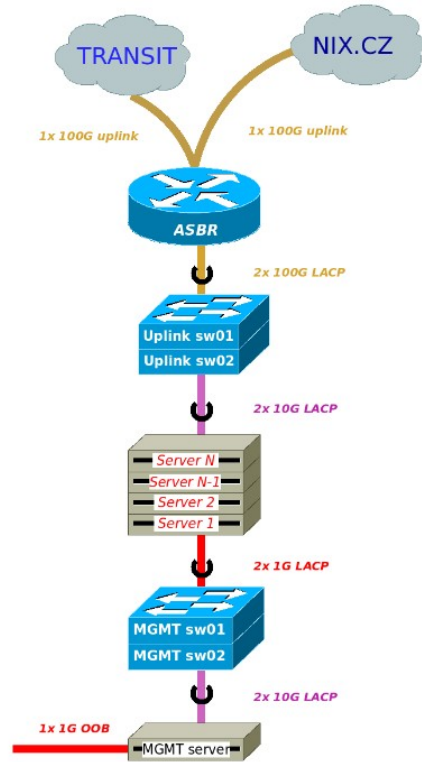
Main challenges

- Do we have enough spare HW?
- New HW lead times
- Do we have enough personal capacity?

What have we built

- At first we just provided several servers with our connectivity
 - first servers were available since 25.2.2022
 - used later as part of DNS anycast and for some registry components
- Started to work on 100Gbit DNS stack

100 Gbit DNS stack



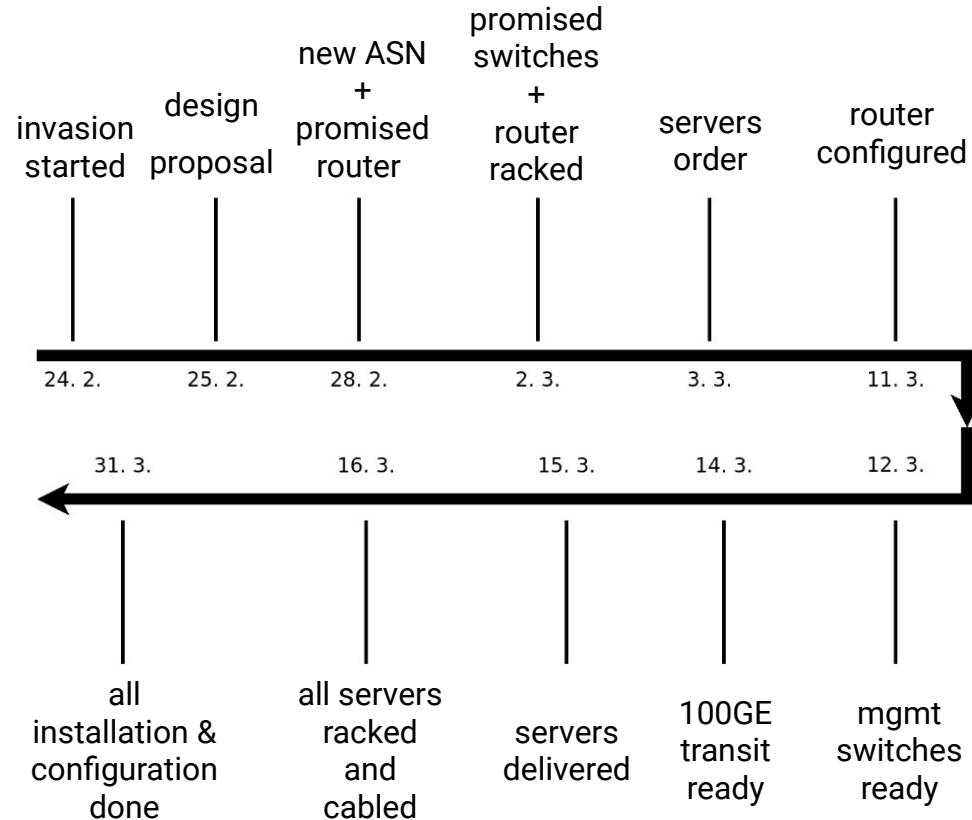
What we had as the beginning



What do we need

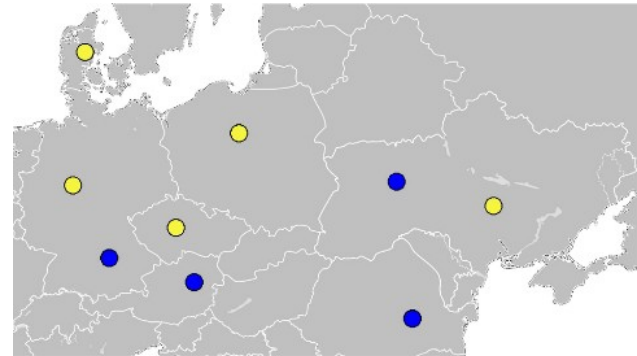
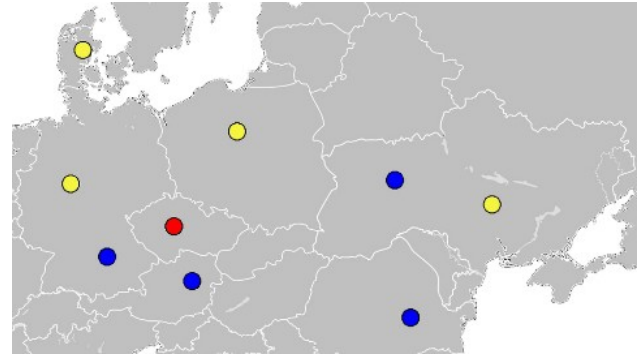
- Empty rack in DC
- 30+ servers
- 100GE Switches
- 100GE Router
- AS + IP range
- Connectivity

Timeline of building 100Gbit DNS stack



How to integrate the DNS stack

- completely new IP anycast
- add as new location to present anycast
- DNS proxmox cluster



Current state

- Two independent locations in Prague
 - One mainly for registry services
 - Second mainly for DNS services
 - Independent and highly oversized connectivity
 - DDoS scrubbing solutions in place
 - Very high DC standard ensuring 24/7 operation even in case of blackout in Prague
 - Both utilizing proxmox to provide Hostmaster UA team with full control

Later adjustments and work ahead

- replacing borrowed router
- adding more capacity to proxmox cluster for more services
- replacing several older servers for new and supported
- reconsider how services are split between DC's
- better documentation :)

CSNOG 2022 Brno



**Thank you
&
Слава Україні!**