A new Name Server Infrastructure for .de …

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Starting point

Some 13.5 million domains and an average of some 9 billion queries a day being served, but …

- **query load grows steadily** and specified performance buffer limits are not met by every location

- simply adding additional hardware would lead to inappropriate heterogenity and thus to **costly error-prone maintainance** processes

- a maintainance process is desired that caters for both simple and fast adoptions, necessary because of
  - even more load / scaling needs
  - additional zones to be served
  - defective hardware

> Setup enhanced architecture, new equipment and optimized processes
Design criteria by priority

1. availability and data integrity
2. performance
3. scalability
4. strategic fit
5. cost and maintainability
IPv4 - 16 locations at 10 exchanges
IPv6 - 7 locations ➔ 13 (June 2010)

Legend:
- unicast locations, provider local anycast partners
- dual locations uni-/anycast
- anycast cloud locations
**Nameserver software**: BIND, NSD (differing by location)

**Operating system**: LINUX + virtualisation

**Bladecenter** with state-of-the-art multi-core blade stack

**Dedicated storage array**
max overall query load  > 3 million q/sec, some 250 billion queries a day
DENIC has been operating its name server infrastructure for over a decade and has a proven excellent track record of availability and response time.

We are offering our name server infrastructure to other ccTLD's

- based on a cost sharing model
- to serve the community with an independent neutral DNS delivery
- providing top level security, stability, resilience and performance

→ decrease expenditure
→ (pre-)answer governmental inquiries
→ reliability

😊 Primary or Backup DNS Service

Please contact me or DENIC to setup a project to built a name service according to your needs like for example .at has done recently.

... even more locations are in preparation ...
Questions?

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.de query load (4 years overview until Januar 2010)

max. query load: ~ 8.5 million q/min
average query load recently: ~ 6 million q/min