



DNS Anycast Service for .UA

- **Limited company owned by a not for profit foundation.**
- **32 employees (+ 10 long-term consultants).**
- **Based in Stockholm, Sweden.**
- **Experts on Internet infrastructure.**

Netnod ensures a stable and secure Internet for the Nordics and beyond.

Netnod provides critical infrastructure in the fields of ...

Internet Exchanges



For maximum resilience, Netnod's IXP infrastructure is secured in military-grade bunkers.

Time Services

- **Various protocols: NTP – NTS – PTP.**
- **Atomic clocks at five locations in Sweden.**
- **All critical equipment duplicated at every location – for redundancy.**
- **Modular design.**
- **Easy to add new distribution components.**



Netnod Anycast DNS



The DNS root.

70+ Top-level Domains in service.

80+ sites located from Stockholm to Johannesburg, from Wellington to San Francisco

... including odd places like Colombo, Kathmandu, Kigali, Thimphu, Port Vila, Guayaquil, Concepción, Cochabamba ...

15.4 billion queries/day for root + TLDs that we serve = 178,400 queries ... every ... second ... 24x7.

Uptime: 100.0000 % since 2003.

Routing trick to improve reachability and resilience.

The same IP address (prefix) is announced from several locations.

The BGP routing protocol directs traffic to the "nearest" location.

Automatic "load sharing".

Easy to bring a site down for service. BGP re-routes automatically and without delay.

Thursday Feb 24: we realise the precarious situation in Ukraine.

"What can Netnod do to help?"

Thursday evening: decision made by Netnod CEO: we will provide free global anycast DNS service for .UA and related domains.

Friday morning 09:00 AM: planning meeting.

Around the table: CEO, Product Manager, Engineering, Deployment, Operations people.

"We need a new product!"

New IP prefix.

New "footprint" (group of servers announcing IP prefix).

New service profile.

New "customer".

... operational by the end of today!

Silence around the table ...

No one asked "why?".

Finally just one question from a deployment engineer:

– When do we start?

At 8:22 PM the same night the first cut of the service was operating and my colleague reported "we're good to go!" to Hostmaster UA.

This process is normally a 2–3-week endeavour at Netnod. This time it was done in less than 12 h, because everyone of our staff realised the graveness of the situation.

In 25 years of Netnod operation I've never seen the order "ALL HANDS ON DECK!" be executed before, but now I know that it works.

Two new distribution masters in Stockholm taken into operation.

16 anycast sites enabled.


Trying to avoid fate-sharing.

Serving 97 zones relating to Ukrainian infrastructure.

Our efforts started out as a pure Netnod initiative, but it is now part of a larger set of initiatives coordinated by the Swedish Ministry of Foreign Affairs.



We're running **Rock solid**
Internet Services



NET NOD

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