Domain Name System Service Application Programming Interface

Artyom Gavrichenkov <ag@qrator.net>

GPG: 2deb 97b1 0a3c 151d b67f 1ee5 00e7 94bc 4d08 9191

DNS-related challenges

- Geotargeting/ASN targeting
- Failover
- DDoS
  - *“Anycast has already become necessary for enterprise DNS”*
    – Johan Ihren, Netnod

etc.

Cloud-based solutions!

- Akamai
- Amazon Route 53
- Azure DNS
- Cloudflare
- Dyn
- Google Cloud DNS

Cloud-based solutions!

- But what about zone transfer?

Cloud-based solutions!

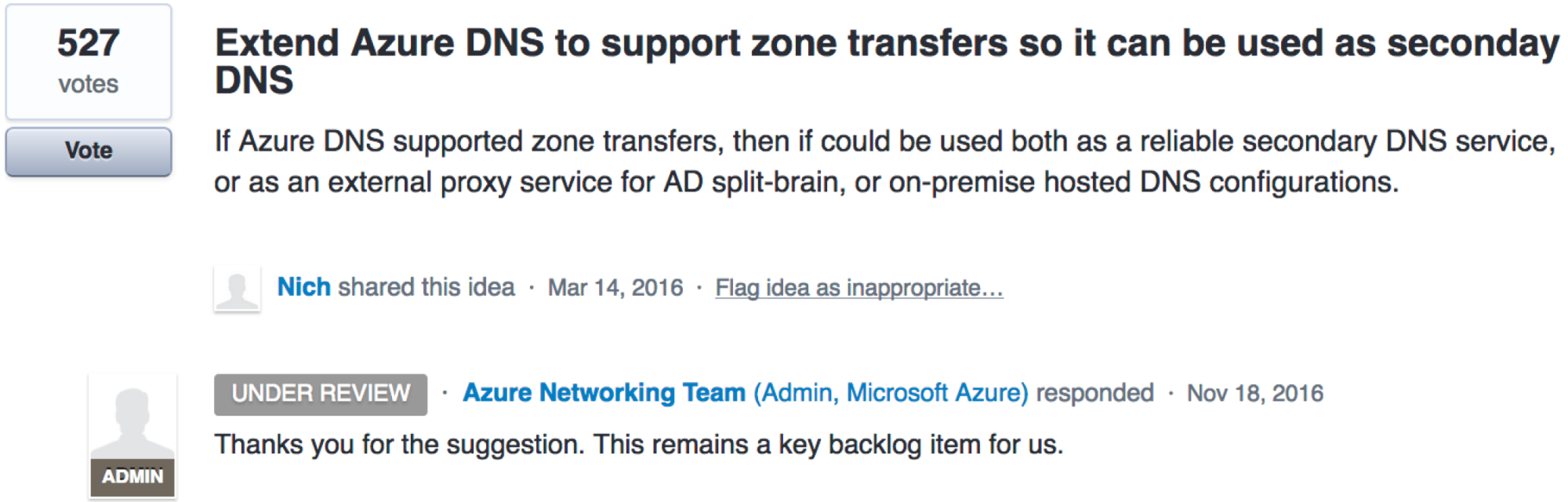
- But what about zone transfer?

“DNS Zone Transfers (AXFR/IXFR) support for Route53 is a hotly asked for feature, and is one that we will consider adding in the future.”

Amazon, 2012.

Cloud-based solutions!

- But what about zone transfer?



Instead of zone transfer:

Amazon Route 53

API Reference

“The Microsoft Azure DNS Resource Provider REST API allows you to create and modify DNS zones and records hosted within Azure.”

There are reasons for that.

- A lot of features are missing and/or are impossible to implement via the standard zone transfer mechanism
- An enterprise generally wants status/feedback/statistics
- RESTful XML-RPC/JSON-RPC is something appealing and easy to use

However.

- Those API look **beautiful!**
- On the inside, they are often less appealing

- There’s no RFC or BCP for designing those

DNS APIs

- There’s no RFC or BCP for designing those, **which is a problem**, because once in a while you’re going to change the provider
- And all the APIs are different, requiring considerable effort
- This is not meant to be a vendor lock-in, and this is **not a vendor lock-in** in practice

DNSSAPI

An initiative to create a common API for:

- New providers entering the market
- Old providers who might want to ease the migration
- …reducing the Internet chaos a bit!

DNSSAPI

- RESTful JSON over HTTPS
- Core concepts (zones, “split DNS”, etc) from draft-ietf-dnsop-terminology-bis
- Plus all the features and policies currently offered on the market:
  - https://docs.aws.amazon.com/Route53/latest/APIReference/Welcome.html
  - https://ns1.com/api and others

DNSSEC

- Included, of course
- A design goal from the very beginning
- There are some thoughts about how DNSSAPI can help in DNSSEC worldwide deployment

IANA Considerations

- Extensible to handle future concepts

- A private namespace (like, “X-”-something) for the private features and attributes
- A new IANA registry for the public namespace?

Milestones

- October’17-May’18: collecting feedback
  - 12.10.2017:
    idea presented at the ICANN EE DNS Forum
  - 22.03.2018: dnsop WG
- April’18: release v0.01 (draft-02)
- April-October: collecting feedback, polishing
- November’18 (IETF 103): release v0.2
- 2019: release candidate

Q&A, any suggestions?

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The name

- DNSAPI is hijacked by Microsoft
- Hence additional “S”