Domain Name System Service
Application Programming Interface

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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?

Extend Azure DNS to support zone transfers so it can be used as seconday DNS

If Azure DNS supported zone transfers, then if could be used both as a reliable secondary DNS service, or as an external proxy service for AD split-brain, or on-premise hosted DNS configurations.

Nich shared this idea · Mar 14, 2016 · Flag idea as inappropriate...

UNDER REVIEW · Azure Networking Team (Admin, Microsoft Azure) responded · Nov 18, 2016
Thanks you for the suggestion. This remains a key backlog item for us.
Instead of zone transfer:

“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
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”