Alibaba Cloud DNS Practice
ICANN64 TechDay

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introduction

• Who we are?

• Alibaba Cloud DNS team (Managed DNS/Cloud DNS/DNS service provider?)

• What we do?

• SLD Authoritative Sever / Local Resolver Server / Public Resolver Server …
authoritative server

- How many **SLDs** in our cloud DNS? 14+ millions
- How many **query** per day? 160+ billions
- How many **security attack**? everyday
goals

• **Stable**, e.g. provide SLA service

• **Fast**, e.g. user data distribution / client user query

• **Safe**, e.g. user login / network attack

• **Customize**, e.g. private zone / weighted records
submit configuration

1s

dig out the result

fast

Client

Uniform Login System

Managed DNS System

Data Distributed System

pop

pop

pop

DB

...
fast

1. dpdk-based servers
2. anycast architecture
1. disaster recovery & backup system
2. cluster management
   1) disaster recovery
   2) data consistency
safe

security

1. login system
2. configuration modify
3. interface traffic

Client

Uniform Login System

Managed DNS System

Data Distributed System

Interface Traffic Manage System

Internet Users

DB
a customize example: weighted A

weight
web.domain A x.x.x.x  2
y.y.y.y  1

three times query, there will be 2/3 return x.x.x.x, 1/3 return y.y.y.y
local resolver

configure distribution system

- cache + forwarder
  - data center A
- cache + forwarder
  - data center B
- cache + forwarder
  - data center C

... ...

anycast cluster in every data center

kernel module as cache for performance

custom configuration for example PVT zone (Virtual Private Cloud)
public resolver

cluster management system

- cache + forwarder
- cache + forwarder
- cache + forwarder

223.5.5.5/223.6.6.6

custom configuration for example PVT zone (Virtual Private Cloud)
dns in private cloud

stateless api

etcd cluster

anycast servers

DNSAPI

etcd

agent

server

agent

server

raft
in the future...

- DoH + DNSSec are security?
- What will be the next killer app?

  client user+https client \[\leftrightarrow\] \textit{https}server+\textit{dnssec} client \[\leftrightarrow\] dnssec server

  email system \hspace{2cm} world wide web \hspace{2cm} what's next?
Thank you!