Status quo of Yeti DNS Project

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Yeti DNS Virtual Meeting #2 on 2016-03-24
One slide for Yeti current status

- Yeti Root server: 15 root server, 14 operator around the world (a new server from CHILE NIC), 9 out of 15 is signed.
- 389 Yeti Resolvers or visitors, with independent IPv6 addresses who sent queries to Yeti root servers
- Build a new monitoring page on Yeti website
- Add Disqus comment and atom function to Blog page
- First Yeti experiment: MZSK
- Coordinators’ call every two weeks
- A bunch of documents on Yeti operation, experiment and technical findings (on GitHub)
More Root Servers

• The original plan is to have 25 servers (currently 15)
  • Increase the size of the reply to the priming query
  • Increase the network/system diversity of the Yeti testbed
• Two ways to achieve the goal in short time
  • Add "fake" root servers
  • Add new servers (VPS) by some existing volunteers
    • regions where there is no yeti root, like Africa, Oceania

Example just adding addresses:

```
bi1.dns-la.b.net. AAAA 240c:f:1:22::6
AAAA 240c:f:1:22::66
AAAA 240c:f:1:22::666
AAAA 240c:f:1:22::6666
```

Example using different names:

```
bi1.dns-la.b.net. AAAA 240c:f:1:22::6
cj2.dns-la.b.net. AAAA 240c:f:1:22::66
dkk.dns-la.b.net. AAAA 240c:f:1:22::666
e711.dns-la.b.net. AAAA 240c:f:1:22::6666
```

Example with name from different domains:

```
bi1.dns-la.b.net. AAAA 240c:f:1:22::6
bi1.dns-fab.cn. AAAA 240c:f:1:22::66
bi1.dns-cab.net. AAAA 240c:f:1:22::666
bi1.dns-dab.cn. AAAA 240c:f:1:22::6666
```

"fake" root servers
More Resolver(traffic) in Yeti root

- Real Resolver in Yeti, Mirrored traffic, Measurement traffic
- Yeti pcap data access is open, but no application yet
Yeti Resolver Cases

• BUPT
  • Anycast deployment, using only 240c::6666, with DHCPv6 support
  • Cache server forwarding queries to upstream dual-stack DNS (unbound)

• BUCT
  • Rely on BUPT resolver, using DHCPv6 to direct DNS traffic

• CAS and Tsinghua University
  • Unicast deployment with dual-stack servers in some labs (BIND9)

• A SI/IT company of Huabei Oilfield
  • No IPv6 network, forward queries to BII’s dual-stack Yeti resolver (BIND9)
• BII Experiment traffic
  • DNS query set collected in BII and BUPT resolvers (during 2015.10 and 2015.12)
  • Simulate a resolver to send queries to all yeti roots (around 10 qps for each server)
Monitoring system

- **Monitoring Metrics**
  - Server Availability (using Atlas DomainMon)
  - DNS Consistency (comparing SOA, DNSKEY, NS, Glue on DM and Root)
  - Service Protocol requirement (RFC7720)
  - Yeti Root Server Query & Response
  - Yeti root zone diff with IANA
- **Check and Keep the history of changes for SOA, NS,AAAA, DNSKEY RR and report wired event**
- **Yeti Emergency Response**
  - Streamline processes for emergency
  - 22 alert mails to Yeti root operators so far
One Case analysis – SOA update delay monitoring

• SOA update monitoring reflect the root zone transfer status

• yeti-dns01.dnsworkshop.org once delayed about 6 hours
  • Configured to fetch the zone from yetins.wide.ad.jp. as official DM
  • Seeing notify from [yeti.bofh.priv.at.], but I don't see notify from WIDE or BII in my logs
  • The software was changed from Knot-DNS to Bundy-DNS
  • Server should update at least inside the refresh time of the SOA RR (30 Minutes)
  • Extra logging for the incoming AXFR and Notify
Yeti Documents

• Experiment-Schedule
  • https://github.com/BII-Lab/Yeti-Project/blob/master/doc/Experiment-Schedule.md

• Experiment-MZSK
  • https://github.com/BII-Lab/Yeti-Project/blob/master/doc/Experiment-MZSK.md

• Yeti-DM-Sync-MZSK
  • https://github.com/BII-Lab/Yeti-Project/blob/master/doc/Yeti-DM-Sync-MZSK.md

• Yeti_Monitor
  • https://github.com/BII-Lab/Yeti-Project/blob/master/doc/Yeti_Monitor.md

• IETF draft on Yeti experience
Goal & Plans in 2016

• Fulfill the Research and Experimental goal (during 2016)
  • Define a set of experiments in Yeti testbed
  • Finish all Experiments in Yeti testbed with technical deliverables
  • End up with a recommended configuration of Yeti Root system and enter the operational stage (beyond 2016)

• Engage more participants from Yeti community
  • More transparency
  • More discussions / feedback