

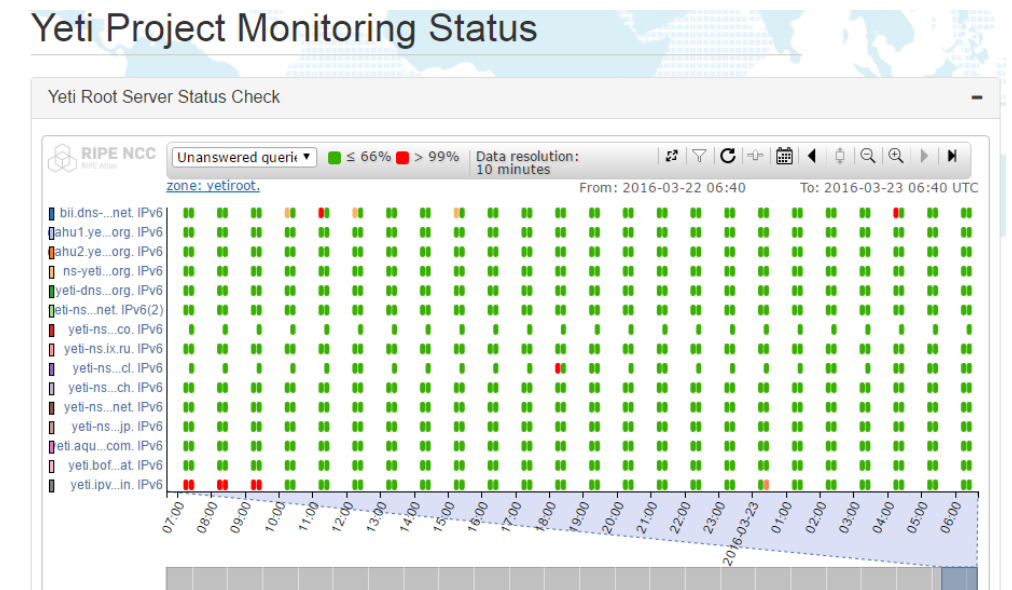
# Status quo of Yeti DNS Project



Davey Song @ BII Lab  
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:

```
bii.dns-lab.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:

```
bii.dns-lab.net. AAAA 240c:f:1:22::6  
cjj.dns-lab.net. AAAA 240c:f:1:22::66  
dkk.dns-lab.net. AAAA 240c:f:1:22::666  
ell.dns-lab.net. AAAA 240c:f:1:22::6666
```

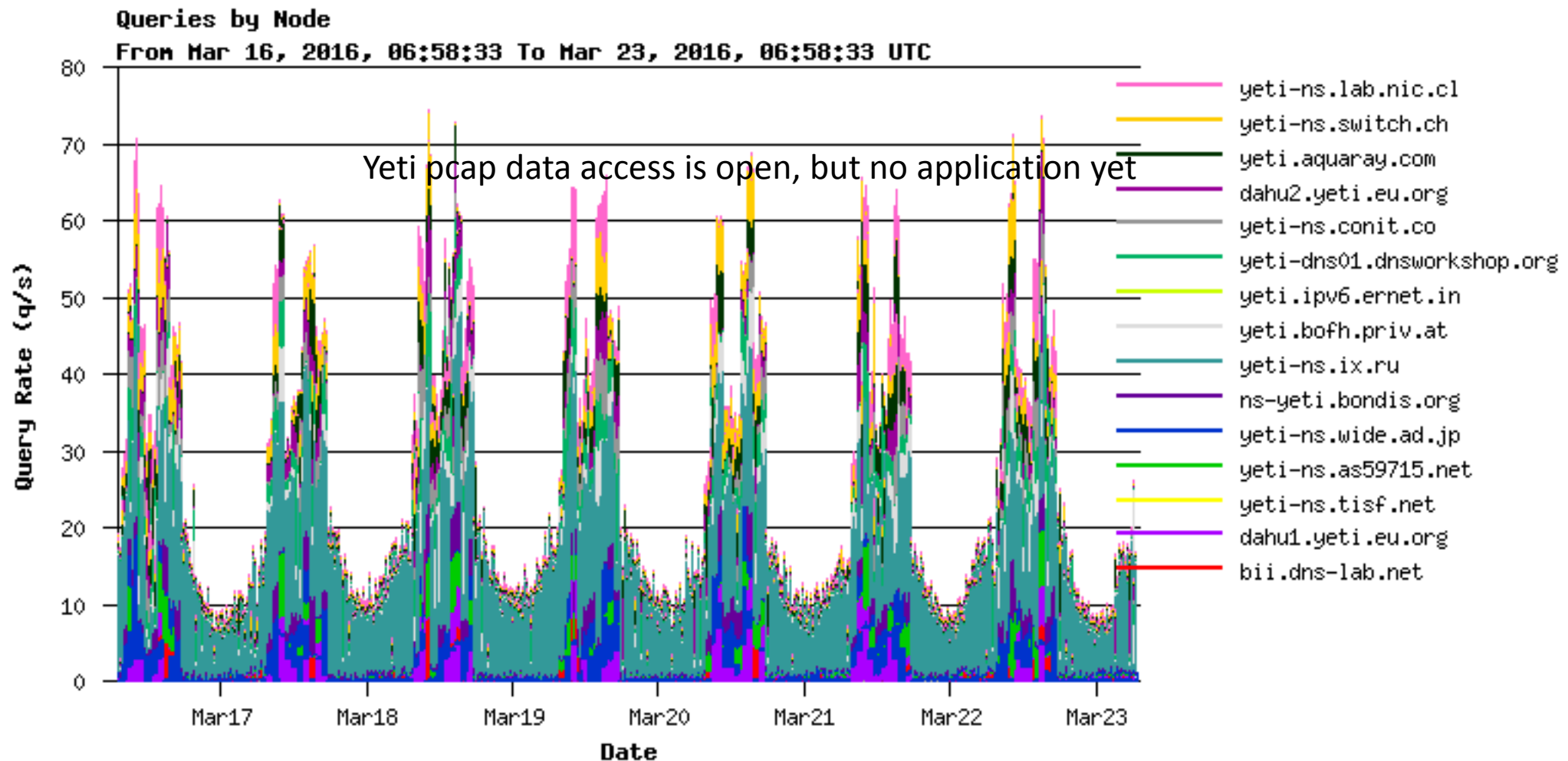
Example with name from different domains:

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

"fake" root servers

# More Resolver(traffic) in Yeti root

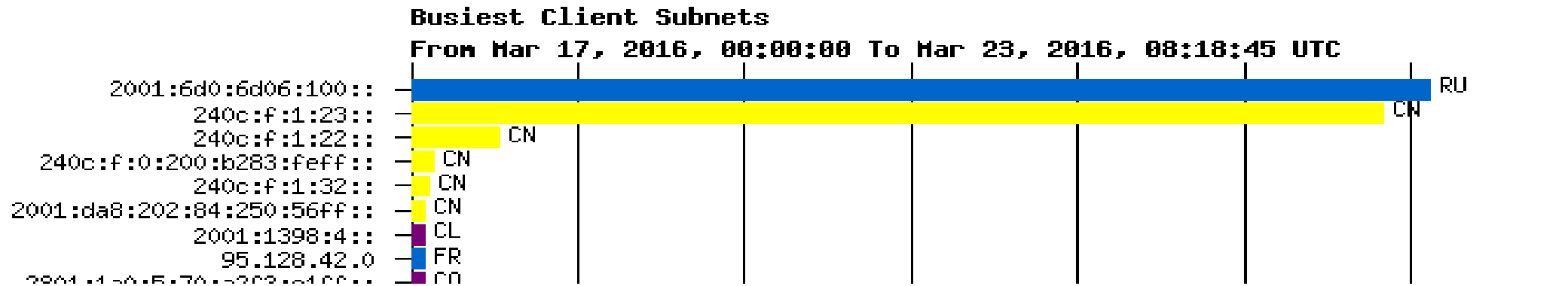
- Real Resolver in Yeti , Mirrored traffic , Measurement traffic
- Yeti pcap data access is open, but no application yet



# 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)

# Experiment traffic generation



- 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

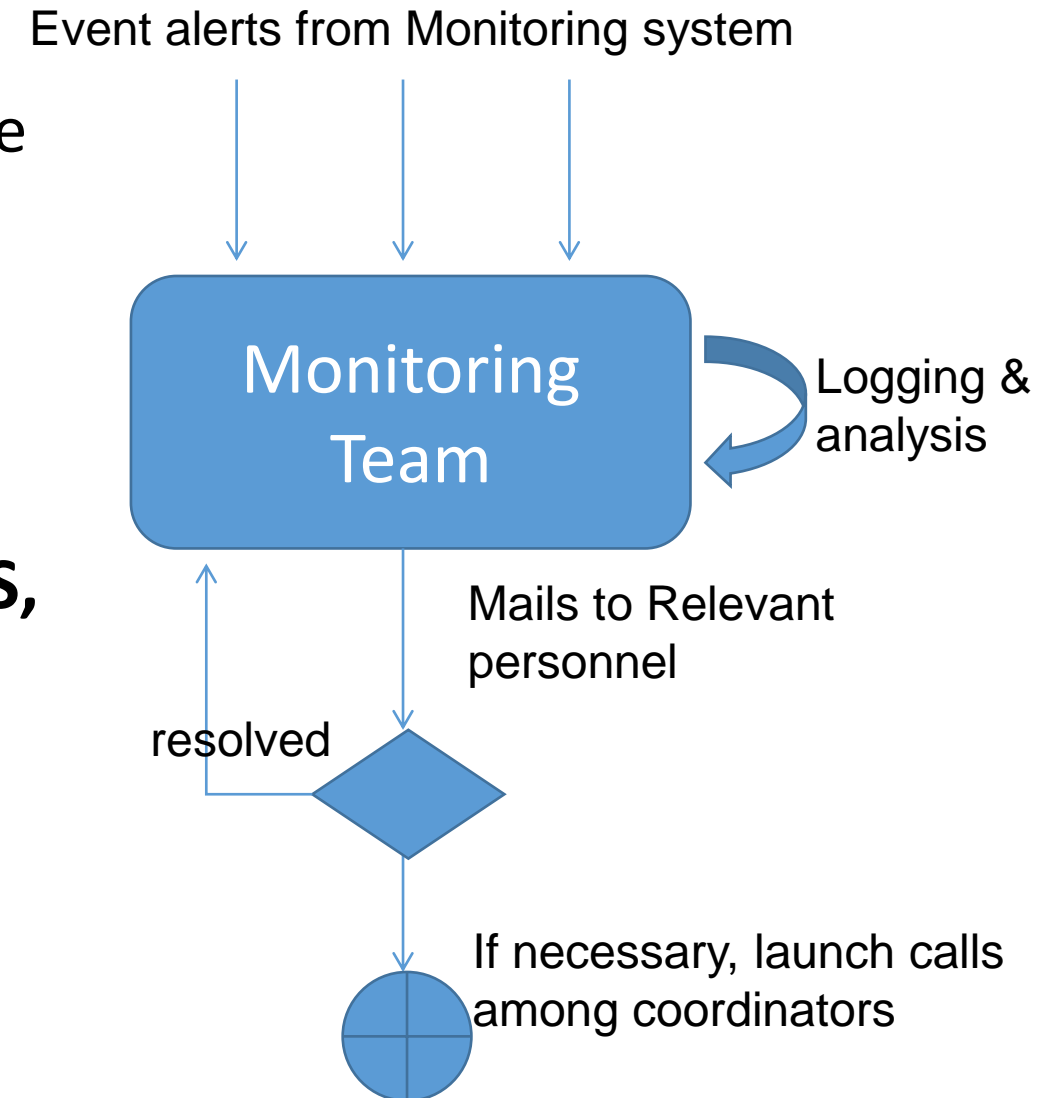
- **Monitoring Metrics**

- Server Availability (using Atlas DomianMon)
- 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
- Set alert with Atlas and Nagios (<http://yeti-dns.org/yeti/blog/2016/02/18/Yeti-monitoring-using-RIPE-Atlas.html>)
- 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](https://github.com/BII-Lab/Yeti-Project/blob/master/doc/Yeti_Monitor.md)
- IETF draft on Yeti experience
  - <https://tools.ietf.org/html/draft-song-yeti-testbed-experience-01>

# 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