NKILL

gaius/kugutsumen

- Bellua Asia Pacific
- HERT, w00w00, teso...
- French Jurisprudence Zboralski-FBI
  - Judge Francis Bruty called Zboralski "*a computer genius with a lamentable morality.*"
  - "*He seems a little childlike, a dreamer. He doesn't appear to be someone who will end up a courtroom fixture,*" assistant prosecutor Georges Dobrouchkess told Reuters.
- Kugutsumen
  - *Slashdot, Should MMOG Be Confined?; "I can think of very few people in EVE Online I would physically harm - this guy is one of them", Seleene*
  - *Ath5k Kugutsumen / Zerochaos illegal channel patch*

NKILL

the internet kill board

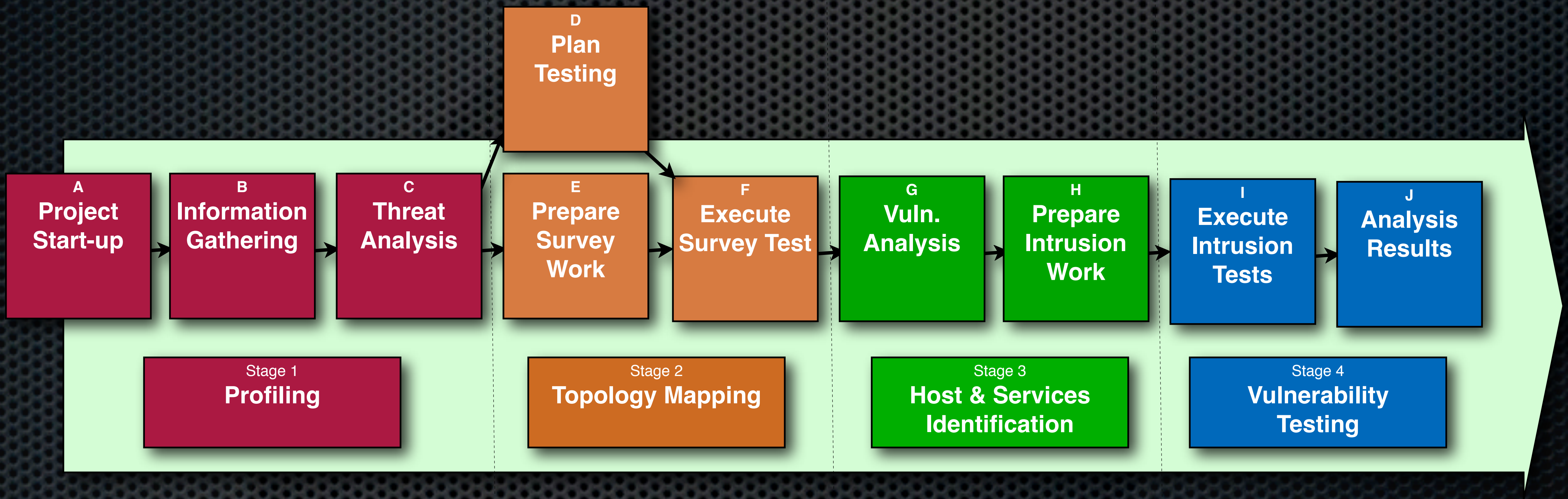
The internet kill board

- Kill board are used to display physical damage from blast, fire or fragmentation expressed as a percentage of the target damaged.
- In iraq, an Army commander was reported to have a whiteboard posted at his headquarters that showed the numbers of Iraqi casualties and served to keep track of enemy kills. "**Let the bodies hit the floor**," read a phrase at the bottom of the board. Allegedly, four Soldiers wanted to be on the "**kill board**" and impress the commander. They killed three unarmed detainees (and covered it up) to accomplish it.

profiling

- Non-intrusive activity
- DNS queries
- web search
- public databases (internic, apnic, ripe, edgar...)
- Network topology mapping
- host and service identification

profiling



Penetration Test Life Cycle Methodology

input

- domain name
- host name
- IP address, network or AS
- random words

output

- related dns records
- ip address, networks, AS, routing prefix
- services
- banners
- network of trust

bscan

- We used to scan the whole internet with bscan on a regular basis back.
- 7 years later Fyodor announced at Defcon:
  “Nmap can now be used to scan the entire Internet.”
  <img timeline>
- bscan was able to scan the entire internet 0.0.0.0 - 239.255.255.255 for a single port in a matter of hours
- A typical TCP port scan of the internet took 8-16 hours

bscan

- Loadable modules for telnet, bind, http handshakes
  - ./bscan -s 10.2.6.6 -L "mod_banner.so" -X 10.3.0.0/16
    scans for ftp-banners [first line only unless '-a' specified] from spoofed source address '10.2.6.6' in spreadmode
- bscan’s README: You can scan with up to 10.000+ hosts/second on a 100mbit connection without any problems [see PROBLEMS].

The problem

- You end up with a bunch of IP address, banners, etc.
- It’s hard to tell who uses a particular IP address

Roelof’s Maltego

- Domains -> SOA, NS, MX, IP4, AXFR, brute force, search
- IP4 -> Netblock, AS, PTR, Shared virtual hosts (domain tools)
- **It doesn’t work well with IP address**

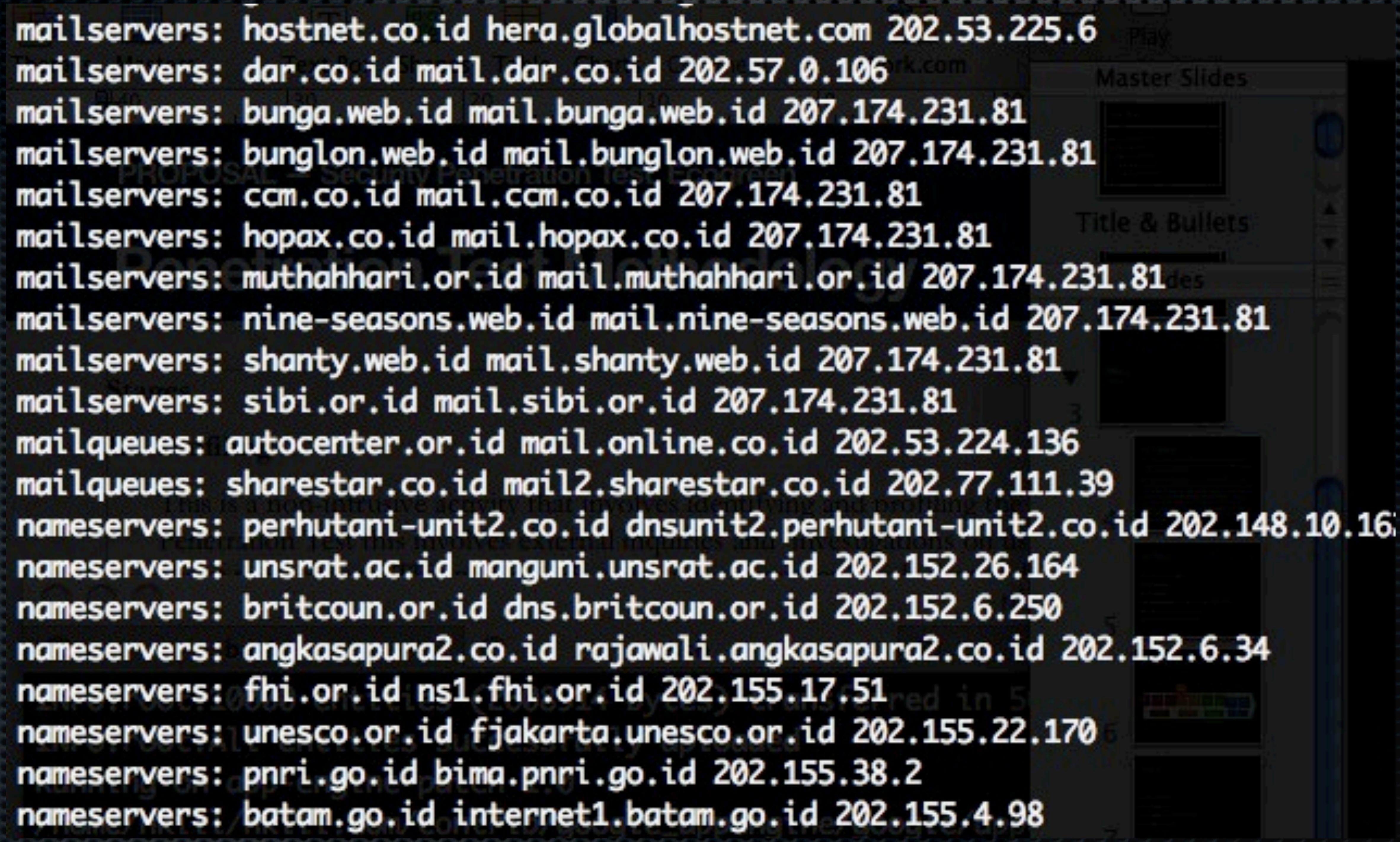
The solution

- profile all public domains names in advance
  - ns records
  - mx records
  - a records for www, ftp, smtp...
  - cnames
  - grab all banners

first try and success

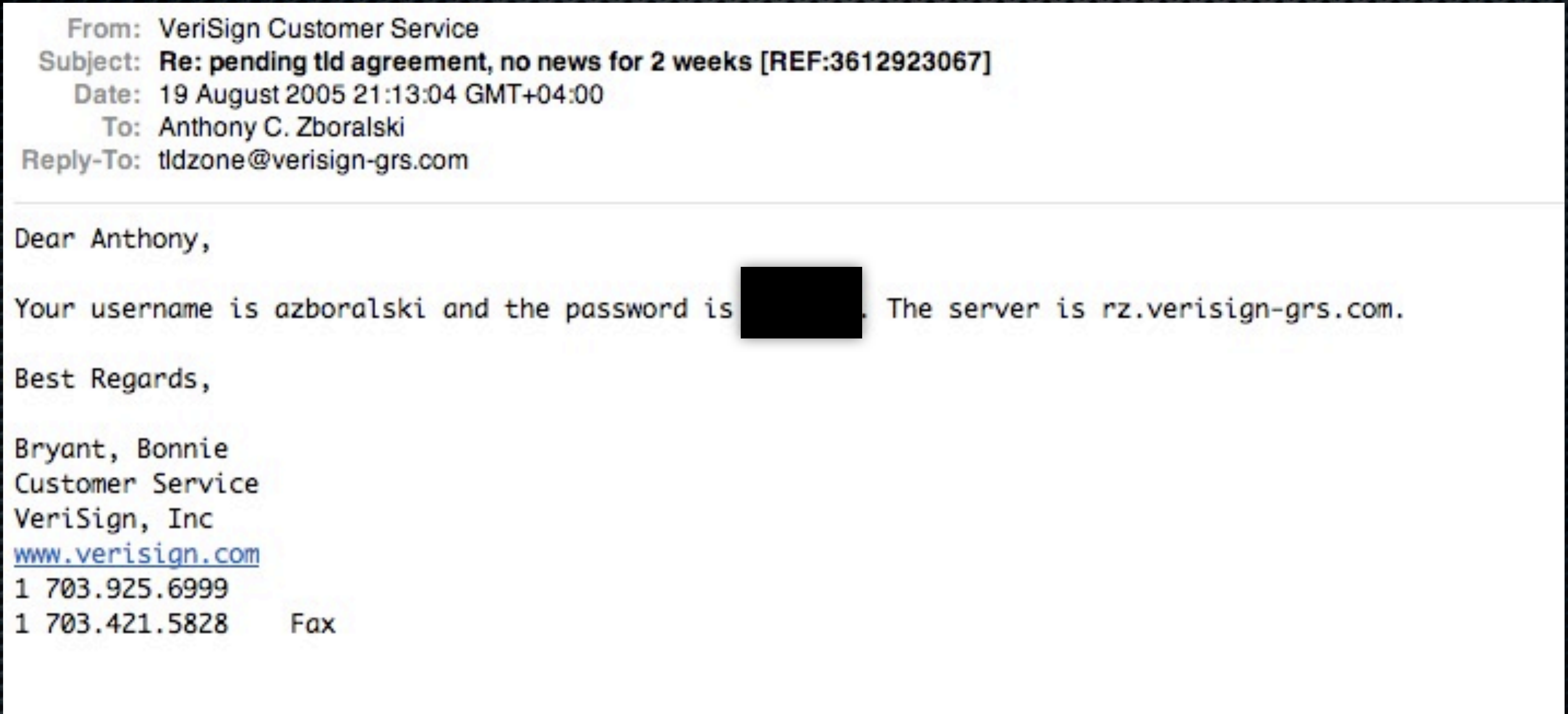
- Limited to Indonesia, Brunei, Singapore and the Philippines
- scan all IP addresses for vulnerabilities
- get all vulnerable domains
- in 2001, only 10 thousand IP addresses served all of Indonesia :)
- ISSUE: “How do we get all .com domains?”

first try



```
mailservers: hostnet.co.id hera.globalhostnet.com 202.53.225.6
mailservers: dar.co.id mail.dar.co.id 202.57.0.106
mailservers: bunga.web.id mail.bunga.web.id 207.174.231.81
mailservers: bunglon.web.id mail.bunglon.web.id 207.174.231.81
mailservers: ccm.co.id mail.ccm.co.id 207.174.231.81
mailservers: hopax.co.id mail.hopax.co.id 207.174.231.81
mailservers: muthahhari.or.id mail.muthahhari.or.id 207.174.231.81
mailservers: nine-seasons.web.id mail.nine-seasons.web.id 207.174.231.81
mailservers: shanty.web.id mail.shanty.web.id 207.174.231.81
mailservers: sibi.or.id mail.sibi.or.id 207.174.231.81
mailqueues: autocenter.or.id mail.online.co.id 202.53.224.136
mailqueues: sharestar.co.id mail2.sharestar.co.id 202.77.111.39
nameservers: perhutani-unit2.co.id dnsunit2.perhutani-unit2.co.id 202.148.10.16
nameservers: unsrat.ac.id manguni.unsrat.ac.id 202.152.26.164
nameservers: britcoun.or.id dns.britcoun.or.id 202.152.6.250
nameservers: angkasapura2.co.id rajawali.angkasapura2.co.id 202.152.6.34
nameservers: fhi.or.id ns1.fhi.or.id 202.155.17.51
nameservers: unesco.or.id fjakarta.unesco.or.id 202.155.22.170
nameservers: pnri.go.id bima.pnri.go.id 202.155.38.2
nameservers: batam.go.id internet1.batam.go.id 202.155.4.98
```

How do we get all .com ?



From: VeriSign Customer Service
Subject: **Re: pending tld agreement, no news for 2 weeks [REF:3612923067]**
Date: 19 August 2005 21:13:04 GMT+04:00
To: Anthony C. Zboralski
Reply-To: tldzone@verisign-grs.com

Dear Anthony,

Your username is azboralski and the password is [redacted]. The server is rz.verisign-grs.com.

Best Regards,

Bryant, Bonnie
Customer Service
VeriSign, Inc
www.verisign.com
1 703.925.6999
1 703.421.5828 Fax

2nd try

- We extend the original proof of concept to all .com, .net and .org domains.

```
4.1k    arpa.zone.gz
1.6G    com.zone.gz
226M    net.zone.gz
112M    org.zone.gz
25k     root.zone.gz
```

2nd try

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```
4.1k    arpa.zone.gz
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25k     root.zone.gz
```

2nd try: scalability issues

- 102,359,087 domains
- 233,191,505 records just for NS and A glue records
- expands to 500 million records
- only 2 million name servers

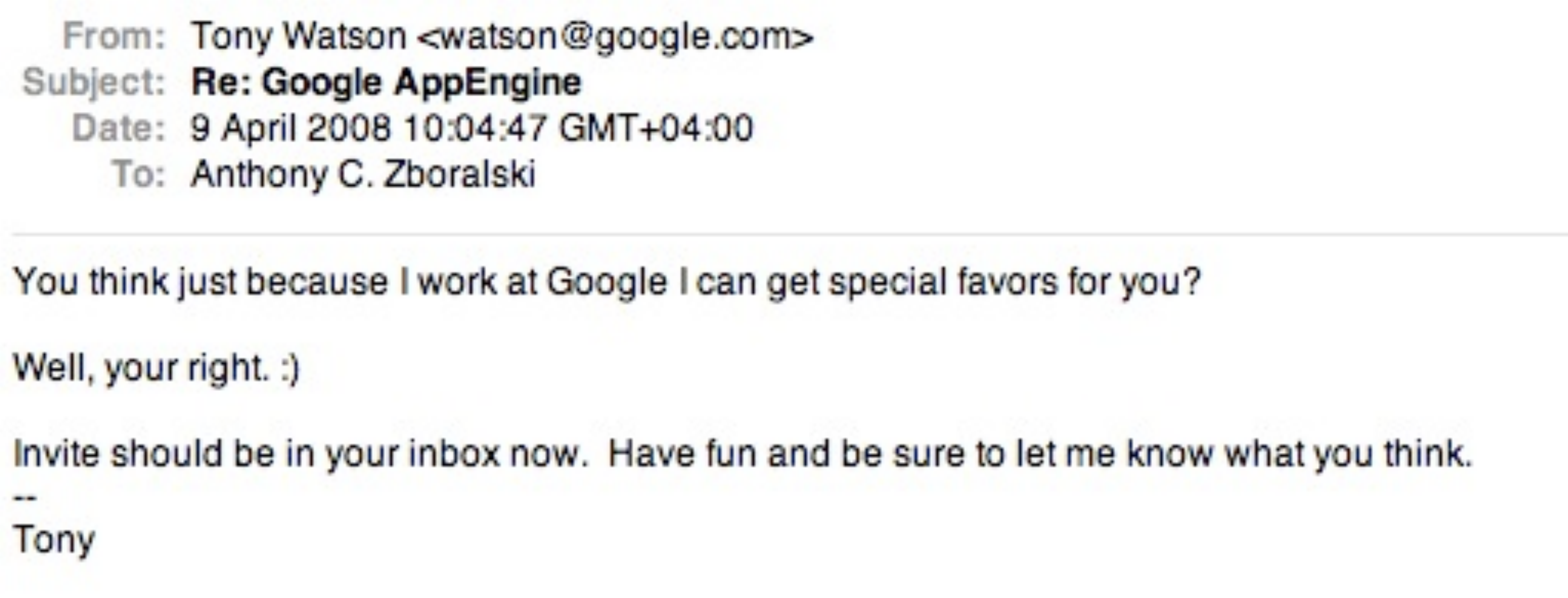
    -
      ```
      52            arpa.data
      187,029,891   com.data
      28,706,090    net.data
      17,452,806    org.data
      2,666         root.data
      233,191,505   total
      ```

2nd try scalability issues

- IO limits... 100 seek per second per hard disk
- tried mysql, berkeley db, postgres, posgres with patricia tri indexes...
- reverse engineering big tables
- hadoop
- budget issues...

google app engine

- 10,000 invites to the first beta and I missed it
- Lucky I had some friends



From: Tony Watson <watson@google.com>
Subject: **Re: Google AppEngine**
Date: 9 April 2008 10:04:47 GMT+04:00
To: Anthony C. Zboralski

You think just because I work at Google I can get special favors for you?

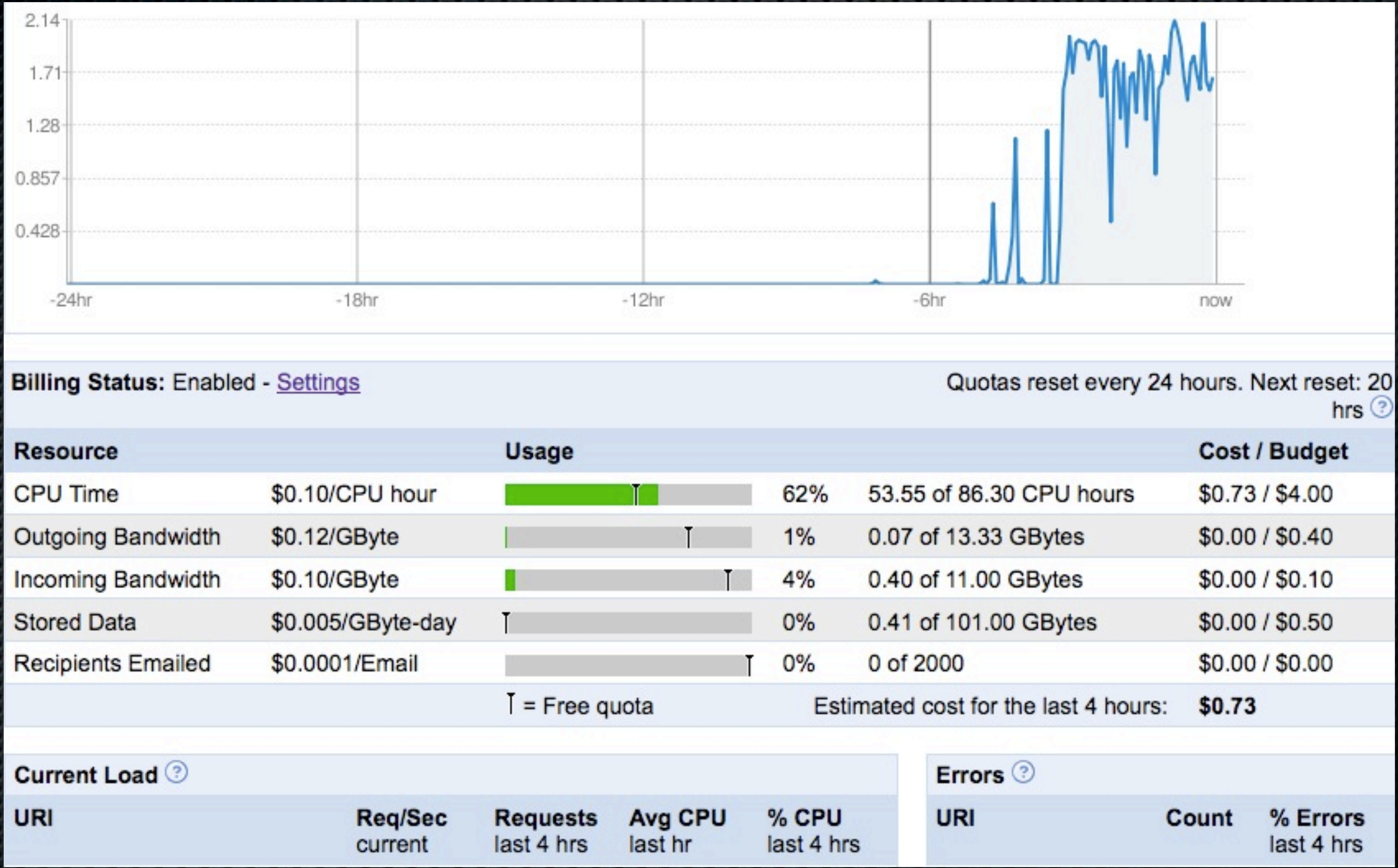
Well, your right. :)

Invite should be in your inbox now. Have fun and be sure to let me know what you think.
--
Tony

3rd try: app engine

- At first there were too many limitations
- The datastore is not a SQL database
- You can still follow the relational model
- google services (google accounts, memcache, google docs,
- Django with App Engine Patch
- It scales really well

3rd try: app engine



Billing Status: Enabled - Settings

Quotas reset every 24 hours. Next reset: 20 hrs ?

Resource		Usage			Cost / Budget
CPU Time	$0.10/CPU hour		62%	53.55 of 86.30 CPU hours	$0.73 / $4.00
Outgoing Bandwidth	$0.12/GByte		1%	0.07 of 13.33 GBytes	$0.00 / $0.40
Incoming Bandwidth	$0.10/GByte		4%	0.40 of 11.00 GBytes	$0.00 / $0.10
Stored Data	$0.005/GByte-day		0%	0.41 of 101.00 GBytes	$0.00 / $0.50
Recipients Emailed	$0.0001/Email		0%	0 of 2000	$0.00 / $0.00
		⊺ = Free quota	Estimated cost for the last 4 hours:		**$0.73**

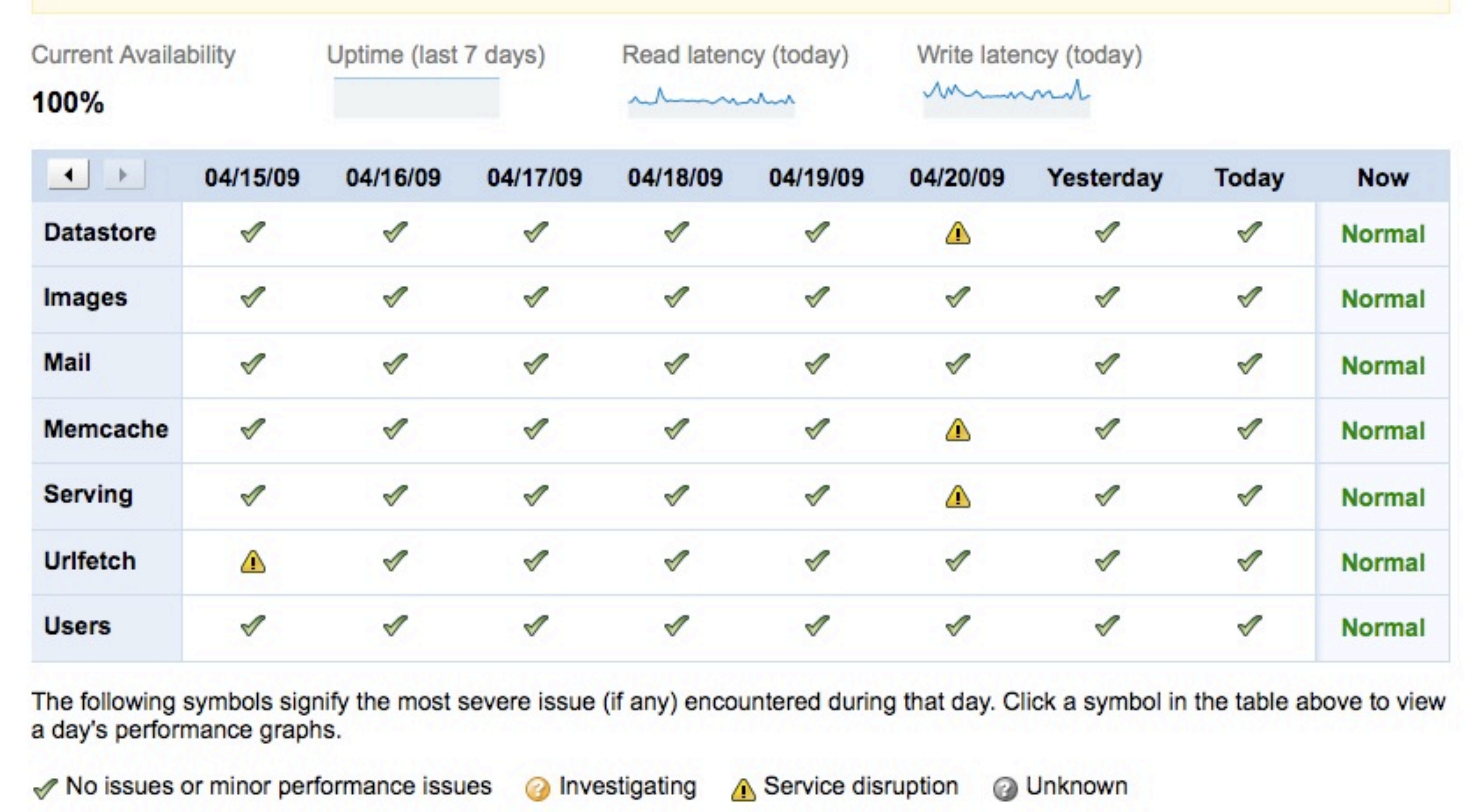
Current Load ?

URI	Req/Sec current	Requests last 4 hrs	Avg CPU last hr	% CPU last 4 hrs

Errors ?

URI	Count	% Errors last 4 hrs

3rd try: app engine



Current Availability

100%

Uptime (last 7 days)

Read latency (today)

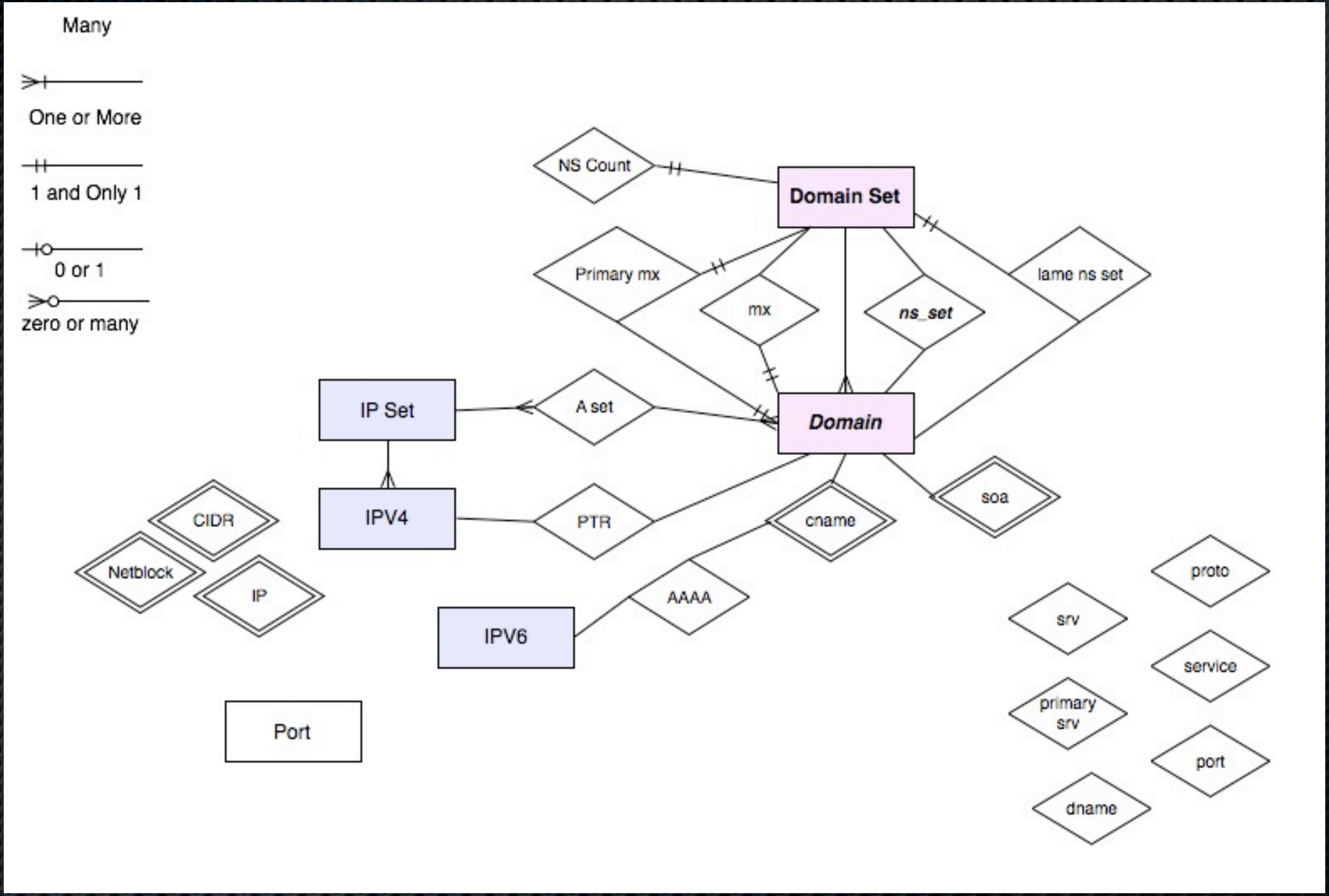
Write latency (today)

◀ ▶	04/15/09	04/16/09	04/17/09	04/18/09	04/19/09	04/20/09	Yesterday	Today	Now
Datastore	✓	✓	✓	✓	✓	⚠	✓	✓	Normal
Images	✓	✓	✓	✓	✓	✓	✓	✓	Normal
Mail	✓	✓	✓	✓	✓	✓	✓	✓	Normal
Memcache	✓	✓	✓	✓	✓	⚠	✓	✓	Normal
Serving	✓	✓	✓	✓	✓	⚠	✓	✓	Normal
Urlfetch	⚠	✓	✓	✓	✓	✓	✓	✓	Normal
Users	✓	✓	✓	✓	✓	✓	✓	✓	Normal

The following symbols signify the most severe issue (if any) encountered during that day. Click a symbol in the table above to view a day's performance graphs.

✓ No issues or minor performance issues ? Investigating ⚠ Service disruption ? Unknown

3rd try: app engine



TODO

- iphone interface
- distributed scanner using boinc client
- DNS fingerprinting... version.bind is not popular
- geoip / google maps
- API to integrate with other tools (e.g. kismet)
- Internet simulator
- link to other databases (zone h, etc...)

thank you

- e-mail z@nkill.com for beta access
- Q/A?