How Dual DNS Improves Resiliency

Overview of LinkedIn's Edge Services

- DNS
- CDN
- RUM DNS
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Overview of LinkedIn's Edge Services

- DNS
- CDN
- RUM DNS
ns1.p43.dynect.net.
ns2.p43.dynect.net.
ns3.p43.dynect.net.
ns4.p43.dynect.net.

dns1.p09.nsone.net.
dns2.p09.nsone.net.
dns3.p09.nsone.net.
dns4.p09.nsone.net.
Navigation Timing API

Prompt for unload
  | redirect
  | App cache
  | DNS
  | TCP
  | Request
  | Response
  | Processing
  | onLoad

- navigationStart
- redirectStart
- redirectEnd
- fetchStart
- domainLookupStart
- domainLookupEnd
- connectStart
- (secureConnectionStart)
- connectEnd
- requestStart
- responseStart
- responseEnd

- loadEventEnd
- loadEventStart
- domComplete
- domContentLoaded
- domInteractive
- domLoading
- unloadEnd
- unloadStart
90th non-zero DNS times on Friday Oct 21st 2016
Traffic count on Friday Oct 21st 2016

Traffic Count

12:00 am 12:00 pm 12:00 am

WoW Friday
Basic vs. Advanced zone

Basic zones: static records

Advanced zones:

- GeoDNS
- Health checking
- Weighted Round Robin
- Dynamic
Keep your zones in sync

Basic zones: Use AXFR

<table>
<thead>
<tr>
<th>Record</th>
<th>TTL</th>
<th>Type</th>
<th>Value</th>
<th>Locked</th>
</tr>
</thead>
<tbody>
<tr>
<td>test-me-now-1111-555555555.licdn-beta.com</td>
<td>86400</td>
<td>A</td>
<td>7.7.7.7</td>
<td>Delete</td>
</tr>
<tr>
<td>test-one-letme-eat-the-person-yup.licdn-beta.com</td>
<td>86400</td>
<td>A</td>
<td>4.4.4.4</td>
<td>Delete</td>
</tr>
<tr>
<td>test-right-now-you-sil-nose.licdn-beta.com</td>
<td>86400</td>
<td>A</td>
<td>33.3.3.3</td>
<td>Delete</td>
</tr>
<tr>
<td>test-something-now-1111-3444-22222.licdn-beta.com</td>
<td>86400</td>
<td>A</td>
<td>9.9.9.9</td>
<td>Delete</td>
</tr>
<tr>
<td>test-test-test-0001.licdn-beta.com</td>
<td>86400</td>
<td>A</td>
<td>3.3.3.3</td>
<td>Delete</td>
</tr>
<tr>
<td>test-test-test-123123123-test-11111.licdn-beta.com</td>
<td>86400</td>
<td>A</td>
<td>3.3.3.3</td>
<td>Delete</td>
</tr>
<tr>
<td>test-one-name.licdn-beta.com</td>
<td>86400</td>
<td>CNAME</td>
<td>prodtest1624_domainkey.linkedin.com</td>
<td>Locked</td>
</tr>
<tr>
<td>test.licdn-beta.com</td>
<td>86400</td>
<td>TXT</td>
<td>222</td>
<td>Delete</td>
</tr>
<tr>
<td>test.licdn-beta.com</td>
<td>86400</td>
<td>TXT</td>
<td>updated one more test</td>
<td>Delete</td>
</tr>
<tr>
<td>test021.licdn-beta.com</td>
<td>86400</td>
<td>TXT</td>
<td>test003</td>
<td>Delete</td>
</tr>
</tbody>
</table>
2. Advanced zones

Manually sync at first
Now have DNS Sync Tool
3. Alert on zone diffs
• Lowest common denominator features
• No DNSSEC with advanced zones
• SOA won't match with advanced zones
• Don't undelegate NS if completely down during DDOS
IETF Proposal - Serving Stale Data to Improve DNS Resiliency

- draft-tale-dnsop-serve-stale-01
- Some resolvers already support this
Closing thoughts
Questions?

linkedin.com/in/jafferali