How many sites have problems with IPv6 lookups?

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AAAA lookup problems

Should return ≥ 0 records. Problems listed in

`draft-ietf-dnsop-misbehavior-against-aaaa-01.txt`

1. Name server returns NXDOMAIN.

2. Name server doesn't reply.

3. Name server returns NOTIMP.

4. Name server returns junk AAAA record.

5. Name server makes lame delegation.

On mailing lists NXDOMAIN or no reply seem most common. Diagnosis is tricky for end users.

```
www.cnri.dit.ie/cgi-bin/check_aaaa.pl
```

Works by: recursive A query, note best matching domain, get A for each NS and query each NS for A and AAAA records.

Using this, do survey to find out how common the problem is. Works by: take proxy logs, extract hostnames (about 24000) use tool on each, summarise.

Results by name

Names with	Jan'04		Apr'04	
AAAA records	42 of 22863	0.18%	54 of 29287	0.18%
a nameserver that times out on AAAA	102 of 22863	0.45%	113 of 29287	0.39%
a nameserver that returns NOTIMP on AAAA	6 of 22863	0.03%	4 of 29287	0.01%
a nameserver that returns NXDOMAIN on AAAA	16 of 22863	0.07%	24 of 29287	0.08%
a nameserver that returns REFUSED on AAAA			2 of 29287	0.01%
a nameserver that returns 15 on AAAA			4 of 29287	0.01%
a nameserver that returns SERVFAIL on AAAA	15 of 22863	0.07%	23 of 29287	0.08%
NO nameservers that respond correctly on AAAA	107 of 22863	0.47%	100 of 29287	0.34%
a nameserver that has any issue with AAAA	139 of 22863	0.61%	170 of 29287	0.58%

In terms of ≈ 2000000 URLs fetched, 1.8% potentially had problems with AAAA lookups and 0.4% had AAAA records (Apr'04).

Results by nameserver

Nameservers that	Jan'04		Apr'04	
returned AAAA records	105 of 16838	0.62%	123 of 20631	0.60%
timed out on AAAA	64 of 16838	0.38%	49 of 20631	0.24%
return NOTIMP on AAAA	8 of 16838	0.05%	9 of 20631	0.04%
return NXDOMAIN on AAAA	11 of 16838	0.07%	19 of 20631	0.09%
return REFUSED on AAAA			4 of 20631	0.02%
return 15 on AAAA			3 of 20631	0.01%
return SERVFAIL on AAAA	14 of 16838	0.08%	23 of 20631	0.11%
have any issue with AAAA	97 of 16838	0.58%	107 of 20631	0.52%

Ran fpdns against broken servers. Relatively small number of signatures (MyDNS, pliant DNS Server, PowerDNS, several BIND, several unknown).

Conclusion

- There's a problem for IPv6 capable hosts/users.

- Only a small number of servers/names effected,

- including a number of common servers/names.

- People are working to fix it: `news.bbc.co.uk` and `ftp.perl.org` fixed, doubleclick on the way.

- Should we let people know? (Name'n'shame? Nag hostmaster?)