

A

Dan Ports <drkp@mit.edu>
6.033 handson #4 - 2004/03/31
Karger TR1

I.
thyme.lcs.mit.edu is a CNAME for mercury.lcs.mit.edu, which has address 18.26.0.122. This was found with 'dig thyme.lcs.mit.edu'. The CNAME indicates that thyme.lcs is a synonym for mercury.lcs.

context ai has IP 128.52.32.80, and ai. has IP 209.88.68.34. 'ai' is resolved in the domain mit.edu (as ai.mit.edu). 'ai.' is resolved as the name 'ai' in the root.

II.
'dig . NS' gives a list of NS records for ., i.e. a list of nameservers for the root. This list comes from the local nameserver, which has a list of root nameservers. good

dig @b.root-servers.net amsterdam.lcs.mit.edu +norecurs
[...] edu. 172800 IN NS L3.NSTLD.COM.
dig @l3.nstld.com amsterdam.lcs.mit.edu +norecurs
[...] mit.edu. 172800 IN NS BITSY.mit.edu.
dig @bitsy.mit.edu amsterdam.lcs.mit.edu +norecurs
[...] lcs.mit.edu. 21600 IN NS MINTAKA.lcs.mit.edu.
dig @mintaka.lcs.mit.edu amsterdam.lcs.mit.edu +norecurs
[...] amsterdam.lcs.mit.edu. 1800 IN A 18.26.4.9

The address for amsterdam.lcs.mit.edu is 18.26.4.9. It took four iterations, with the commands above, to find this.

III.
'dig +norecurs www.dmoz.org' returns only a NS record for 'org.', indicating that the local nameserver does not have any information about dmoz.org in cache (otherwise it would have returned the requested address, or at least the authoritative nameserver for dmoz.org). The total query time was 2 msec.

With recursion, the local nameserver finds and returns the requested IP in 5107 msec.

When repeated, the query only takes 1 msec. The cache dramatically improves the speed of the lookup.

(Doubleclick?)

\$Id: handson4.txt,v 1.1 2004/04/01 04:38:22 dan Exp \$