DNSSEC trigger

Or how to get DNSSEC to the end-user

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&
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Executive Summary

How to get DNSSEC to your machine, without too much of a headache

dnssec-trigger

Run Unbound Locally

Catch reconfigs (DHCP etc)

Try to penetrate

If all fails call user

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Executive Summary

How to get DNSSEC to your machine, without too much of a headache

Fire and Forget

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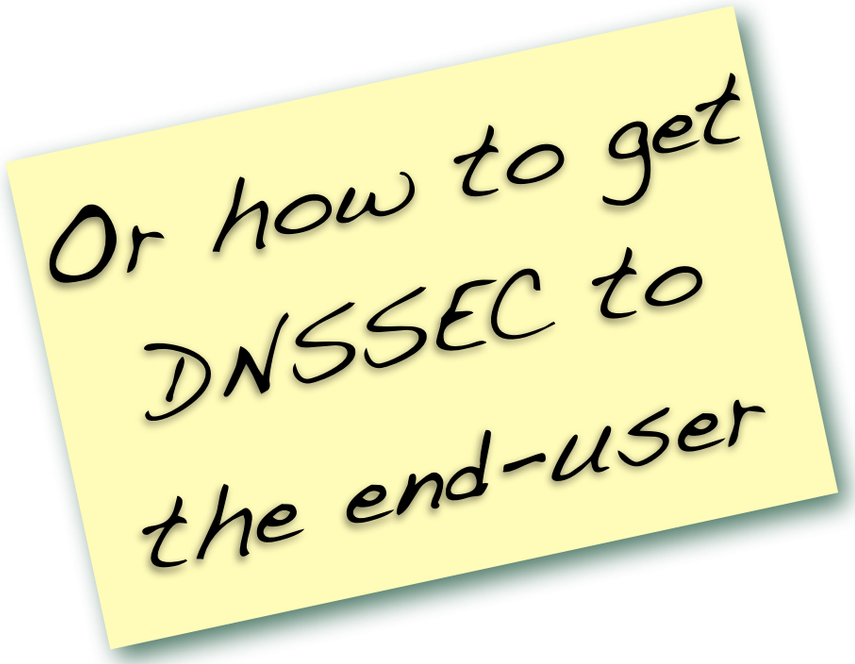
Motivation



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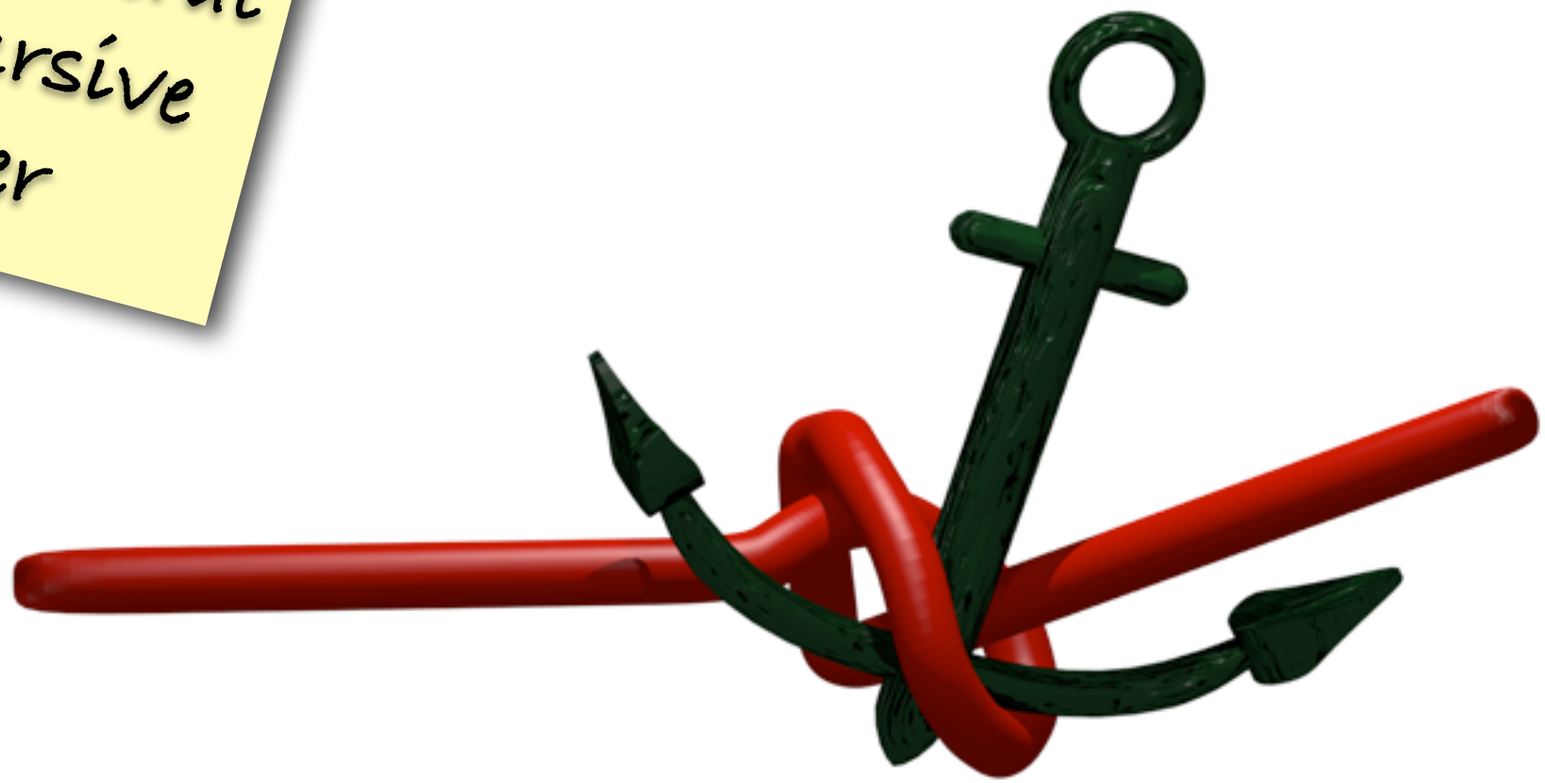
Components

Automatic probing and configuration software

Unbound

A (specific) general purpose Recursive Nameserver



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Unbound

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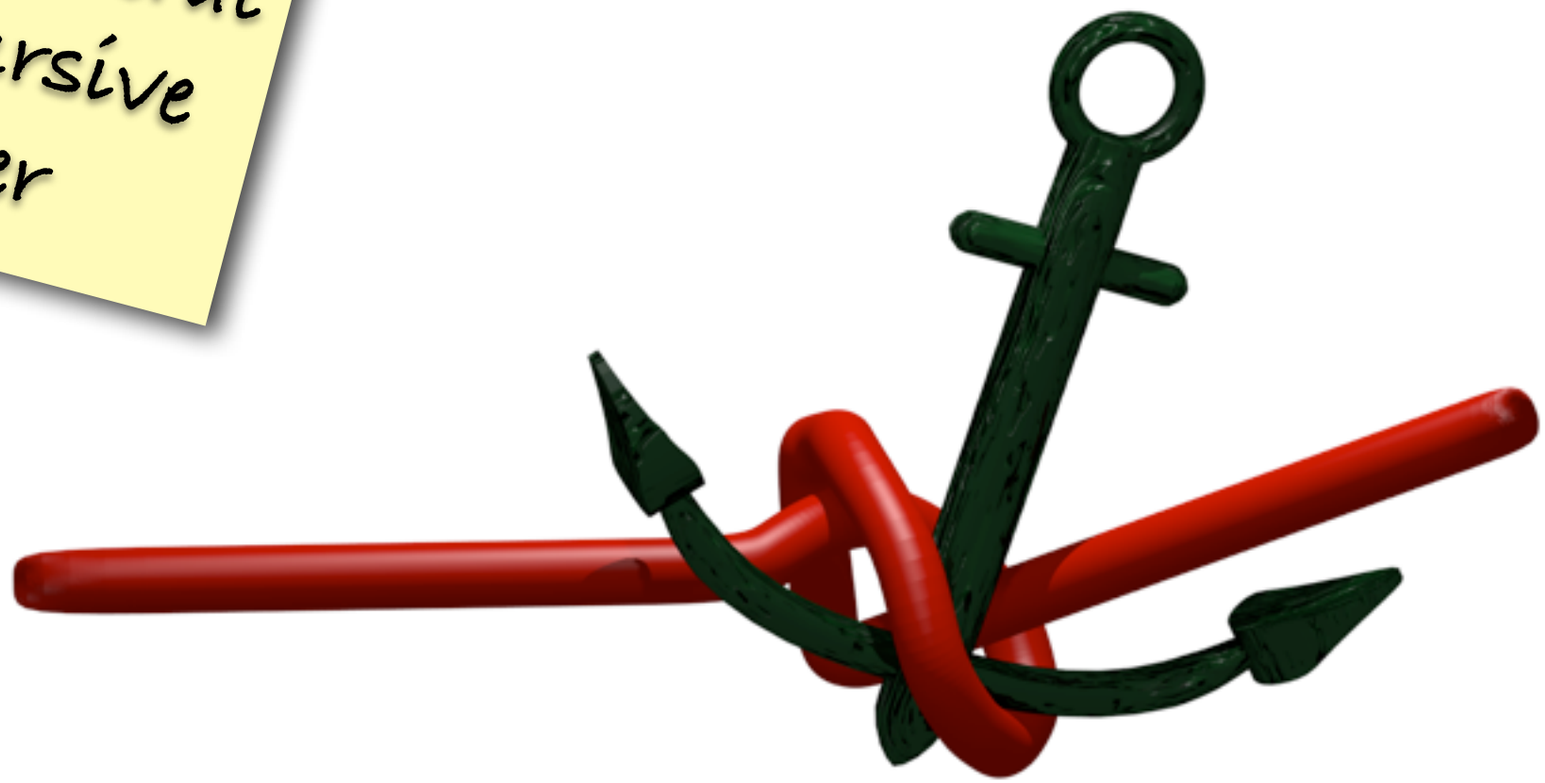

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Initial configuration

Unbound Anchor

Root Key

Unbound

incoming DHCP info

Machine specific

dnssec-trigger daemon

DNS Probes

Unbound specific

unbound-control sets Forwarding Config

Dynamic configuration

/etc/resolv.conf

user space

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Normal Operation

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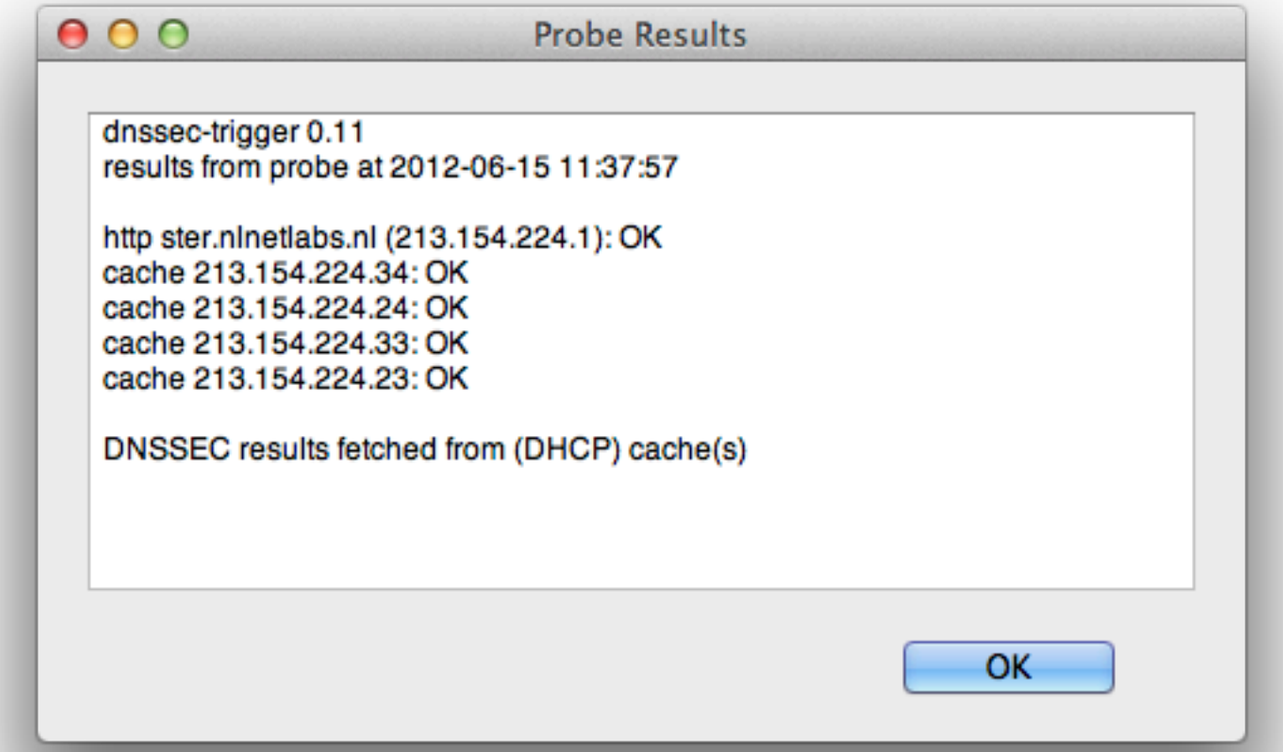
Normal Operation



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PROBE EXPECTATIONS

EDNS support

RRSIGS

DNSKEY and DS

NSEC3 Support

Lengthy Packets (>512)

Transparent Proxy that is transparent to DNSSEC

AND IT WILL PROBE AGAIN

If insecure against its will

exp backoff

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PROBING STRATEGY

All IPs in resolv.conf are tried in parallel, first response wins

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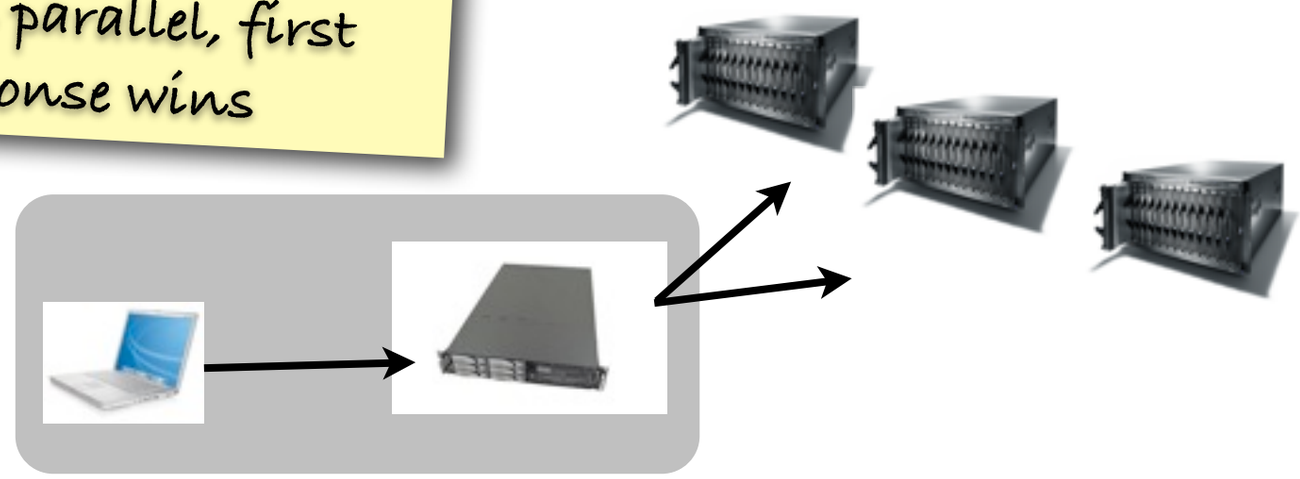

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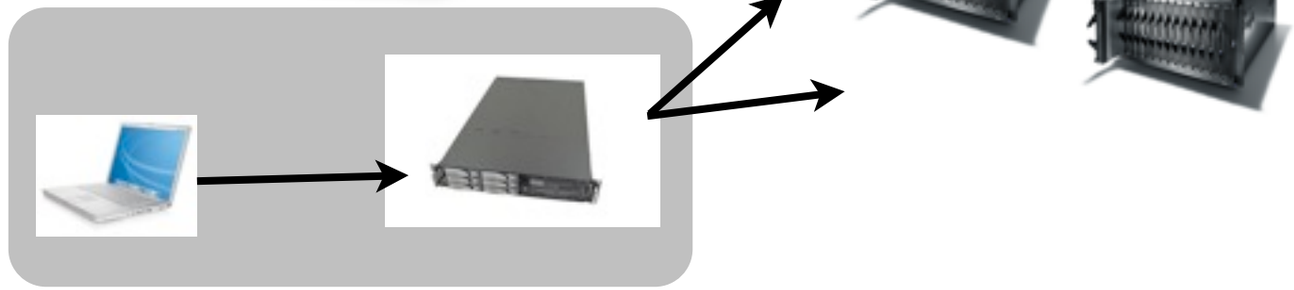
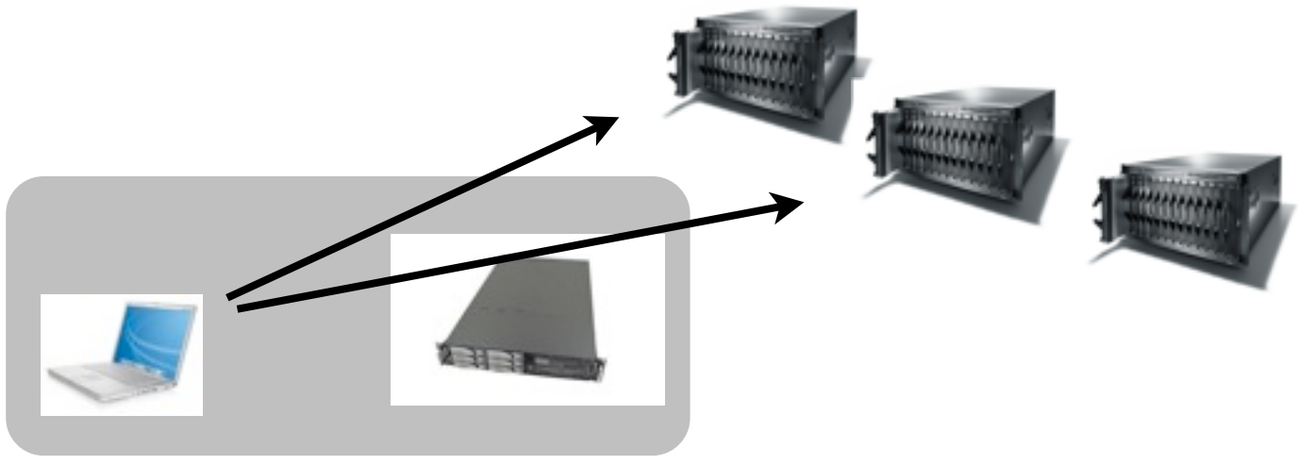


Use cache from DHCP

Full resolver mode, querying authority servers directly



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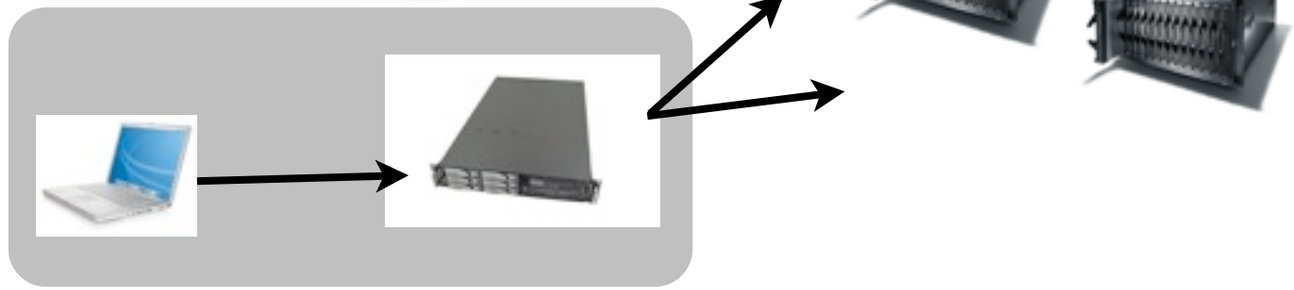

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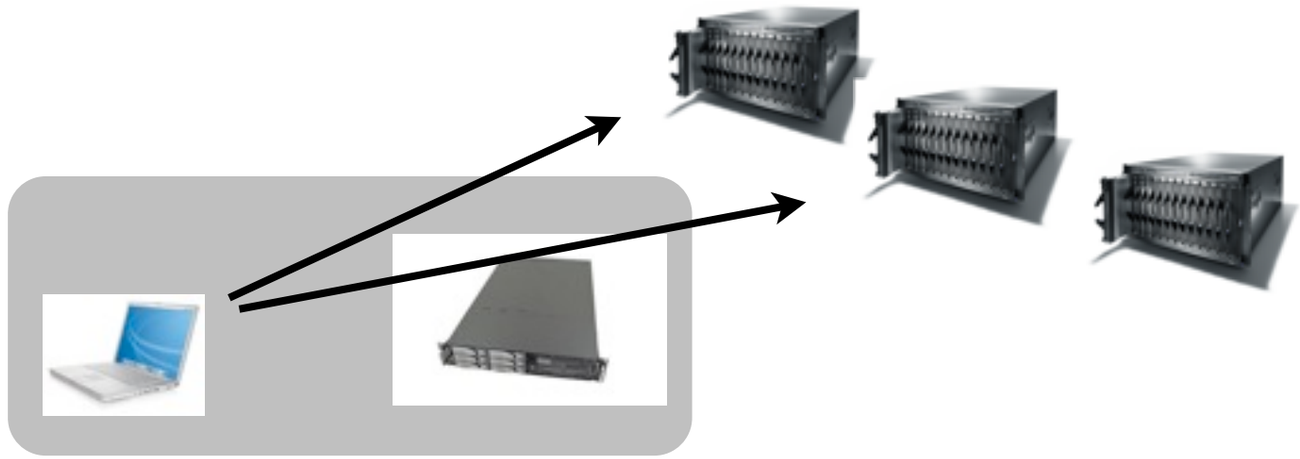
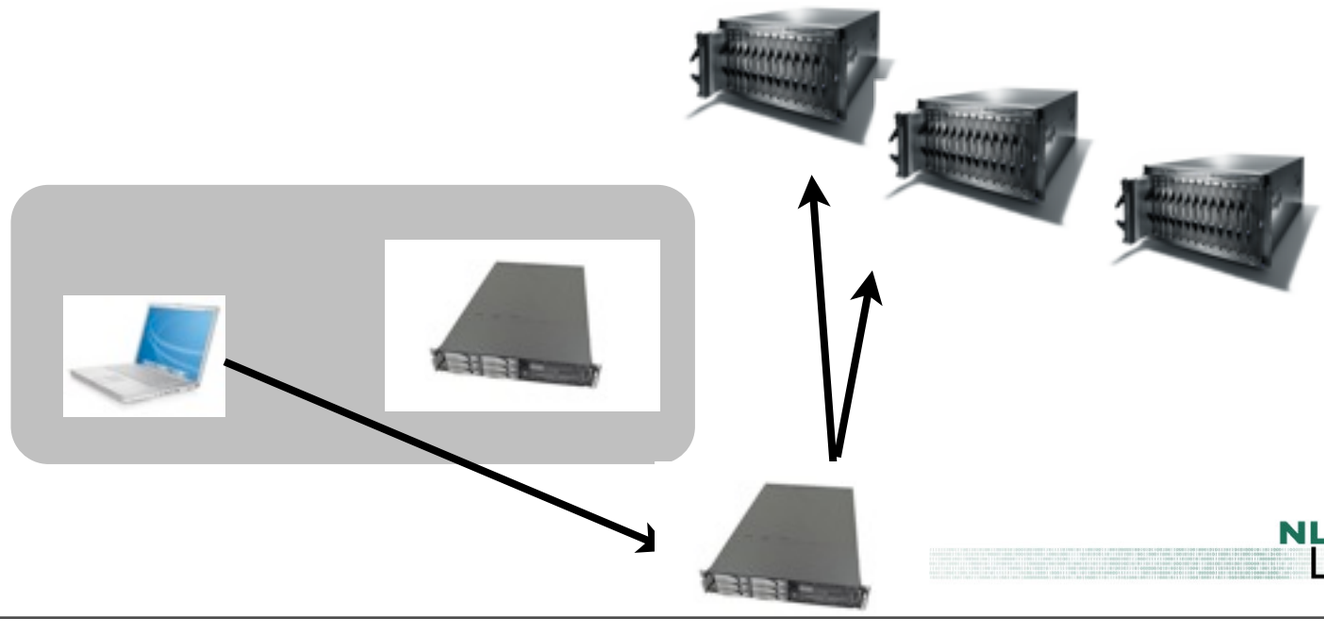


Port 80 and 443 to an NLnet Labs resolver



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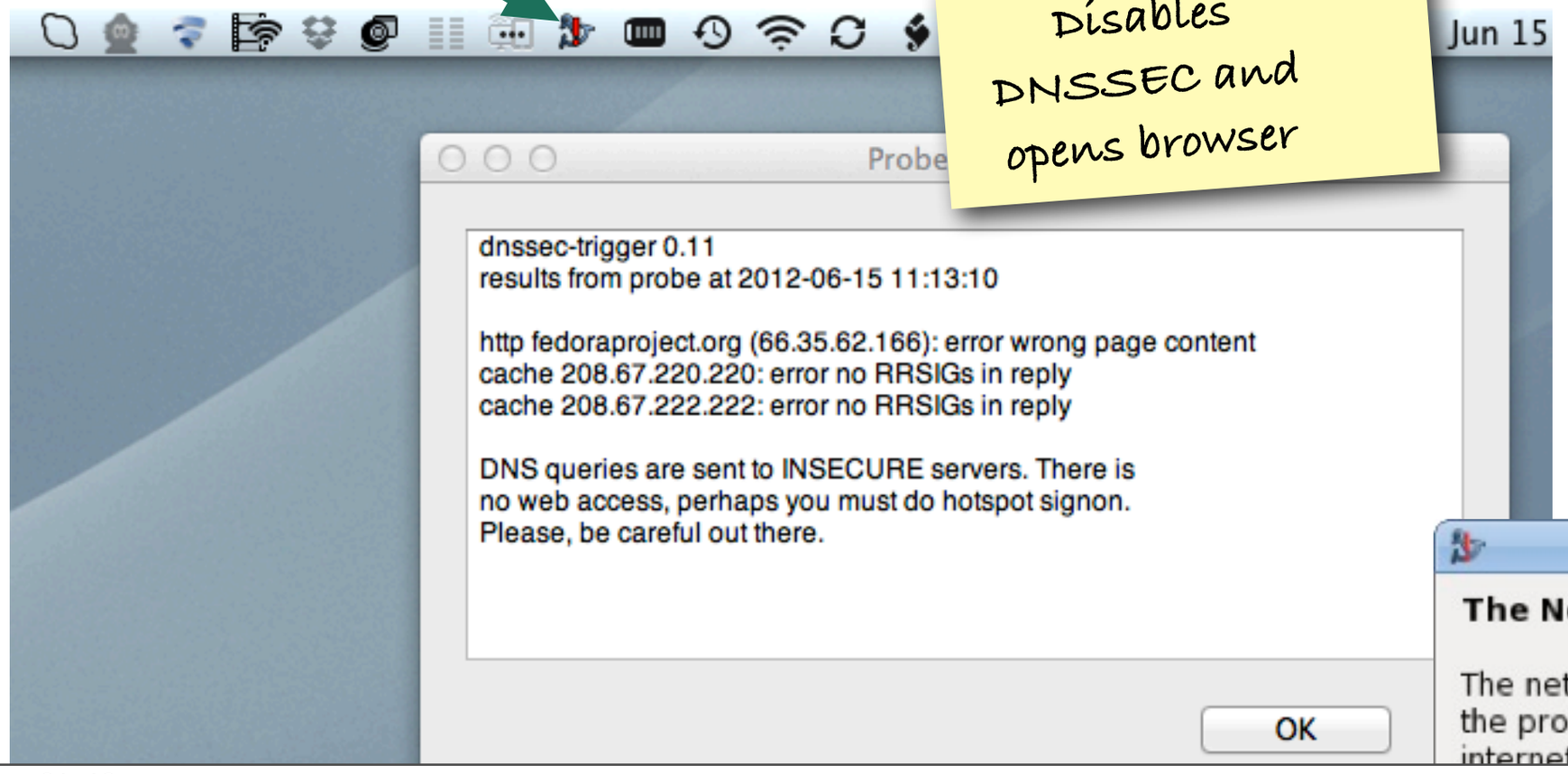
ON THE ROAD

No Pop-ups if everything just works

Only during probing operation

Probe fails to get through, are you in a hotel?

Disables DNSSEC and opens browser



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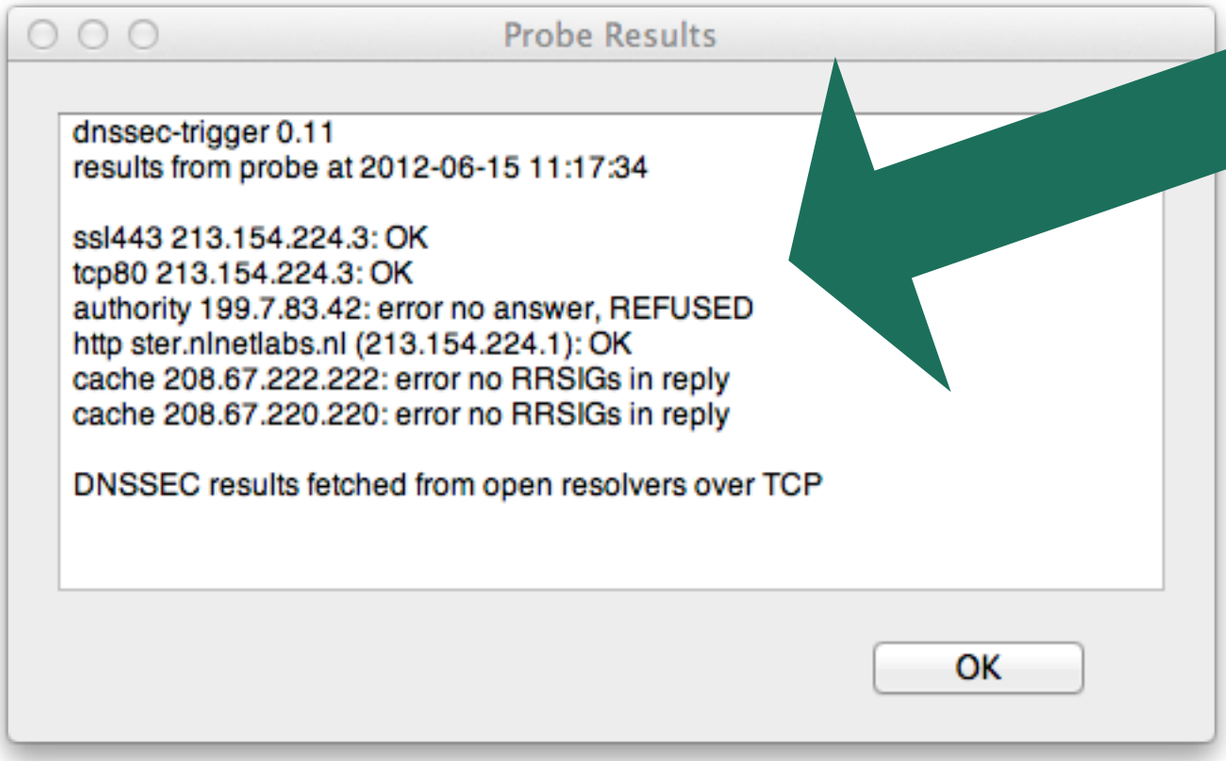

DNSSEC trigger worked around the local DNS resolver

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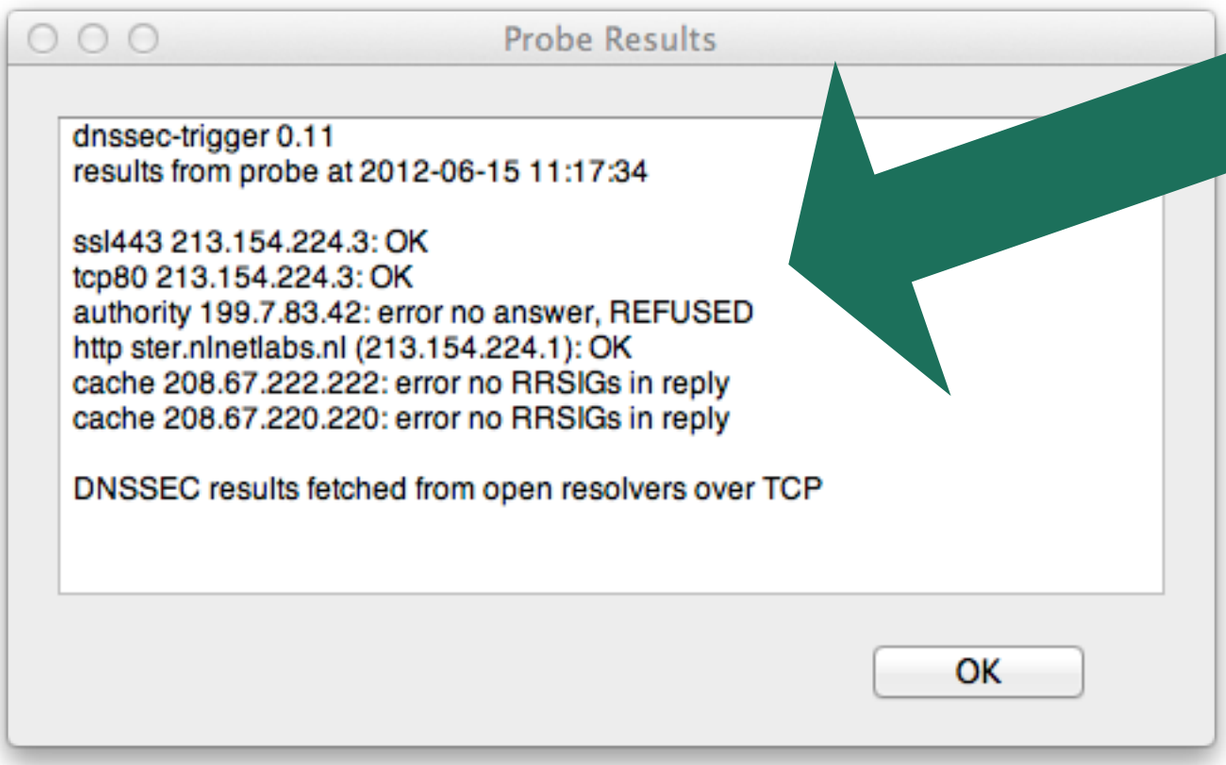

DNSSEC trigger worked around the local DNS resolver

And you never even noticed

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Network Manager
Netconfig

WSALookupService
(XP, Vista, 7)

scripts, ifconfig,
ipconfig

GTK2

Unity

Windows Native

Cocoa OS X

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Designed for dynamic environments (road warriors)

But also used on 70 $ routers

or behind all the others to route around DNSSEC support in those routers

See the following presentation.

https://www.dnssec-deployment.org/index.php/2012/03/is-a-70-router-fast-enough-for-dnssec/

RECENT IMPROVEMENTS

Auto detecting hot-spot sign-on

Software Update for Windows and OSX

RPM readily available.

Mailing list for user experiences

http://open.nlnetlabs.nl/mailman/listinfo/dnssec-trigger

Webpage

http://nlnetlabs.nl/projects/dnssec-trigger/

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That's it folks

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