

# Visualizing DNSSEC status in web browsers

CZ.NIC z.s.p.o.

Ondrej Surý / [ondrej.sury@nic.cz](mailto:ondrej.sury@nic.cz)

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# The DNSSEC visibility problem

- DNS is invisible to the end user
  - He just types some name...
- DNSSEC is also invisible to the end user
  - That's shame
- Browser used for almost everything on the Internet
- Find 10 differences in the pictures

# Unsigned domain

← → ↻ [www.fose.com/Events/FOSE-2012/Home.aspx](http://www.fose.com/Events/FOSE-2012/Home.aspx) ☆ ✖ 🔧

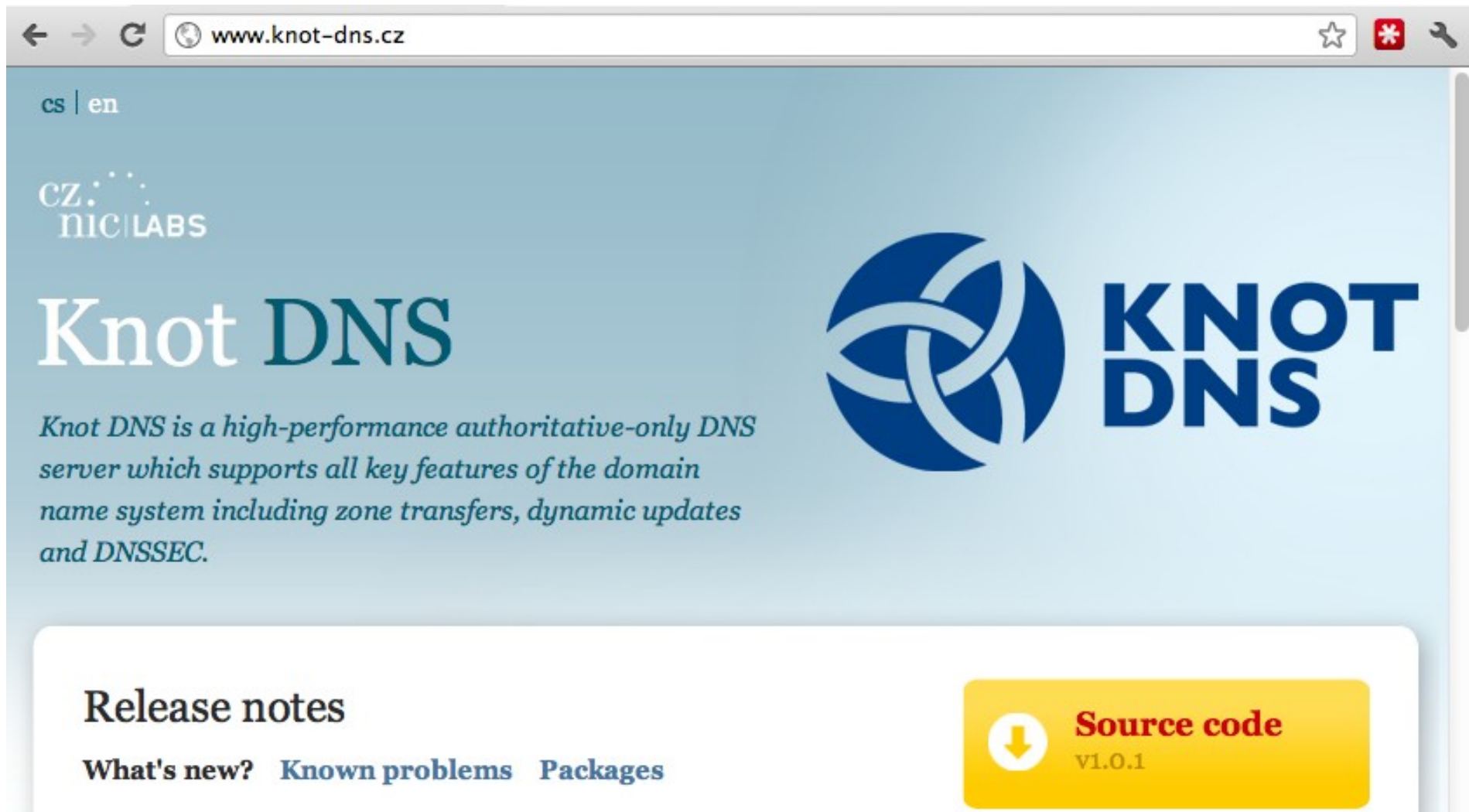
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# Signed domain



The screenshot shows a web browser window with the address bar containing "www.knot-dns.cz". The page content includes a language selector "cs | en", the "CZ: NIC LABS" logo, and the "Knot DNS" title. A descriptive paragraph states: "Knot DNS is a high-performance authoritative-only DNS server which supports all key features of the domain name system including zone transfers, dynamic updates and DNSSEC." To the right is the "KNOT DNS" logo, which consists of a blue circular icon with three interlocking loops and the text "KNOT DNS" in bold blue letters. At the bottom left, there is a "Release notes" section with links for "What's new?", "Known problems", and "Packages". At the bottom right, there is a yellow button with a download icon and the text "Source code v1.0.1".

cs | en

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## Knot DNS

*Knot DNS is a high-performance authoritative-only DNS server which supports all key features of the domain name system including zone transfers, dynamic updates and DNSSEC.*

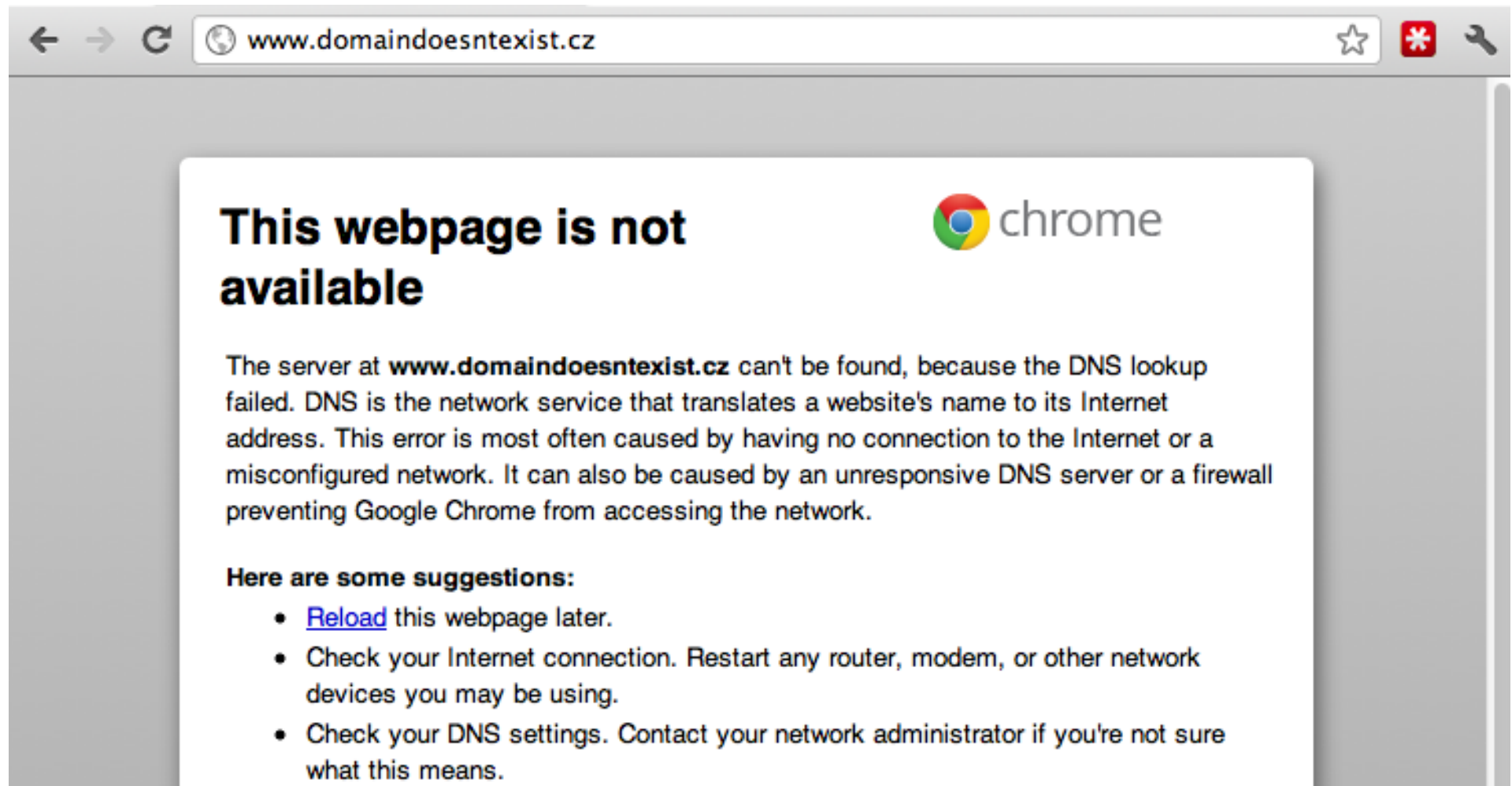
### KNOT DNS

### Release notes

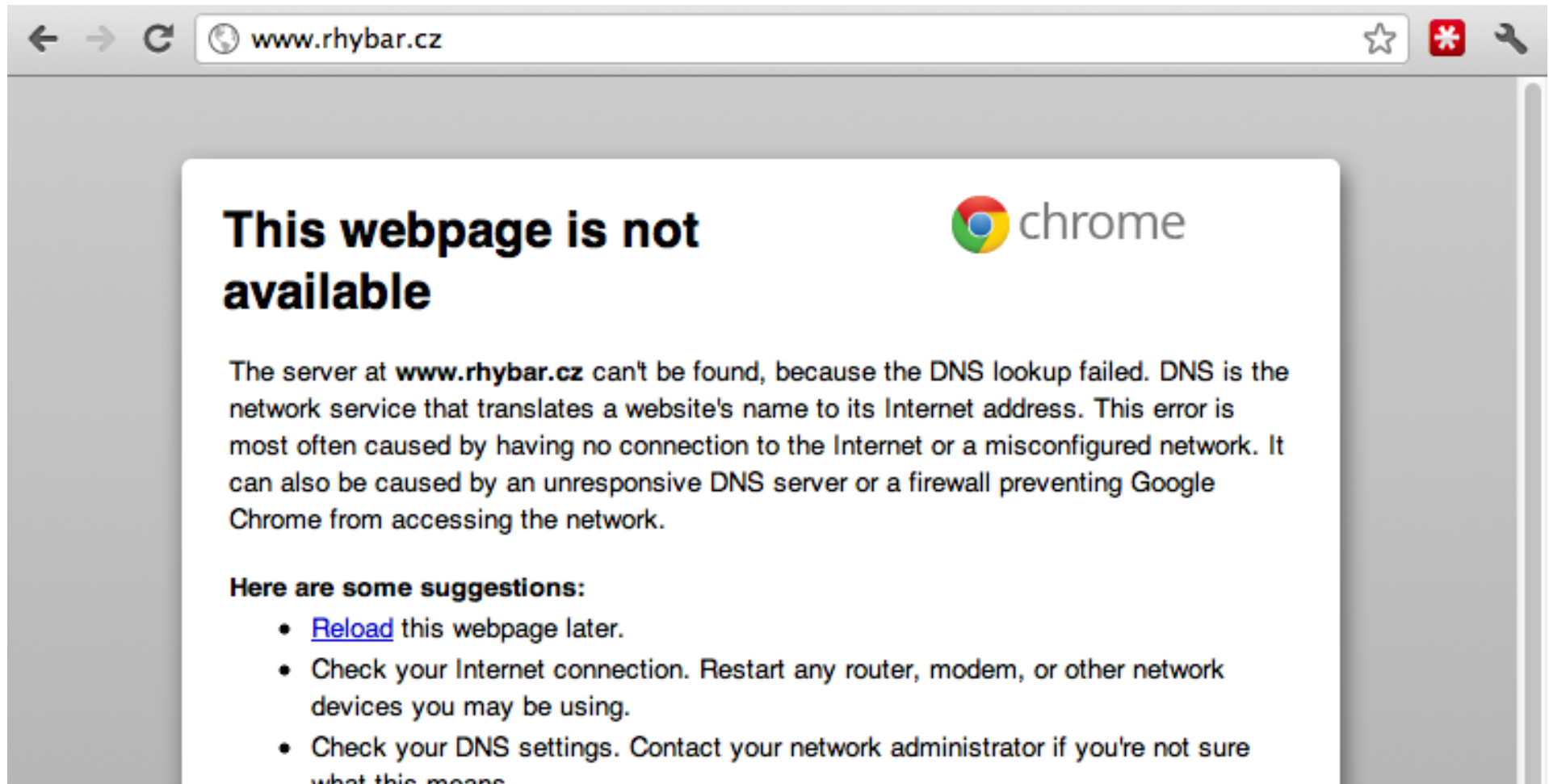
[What's new?](#) [Known problems](#) [Packages](#)

 **Source code**  
v1.0.1

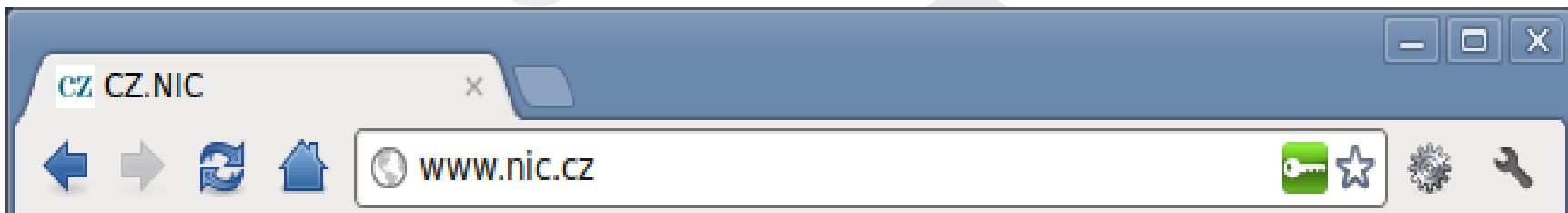
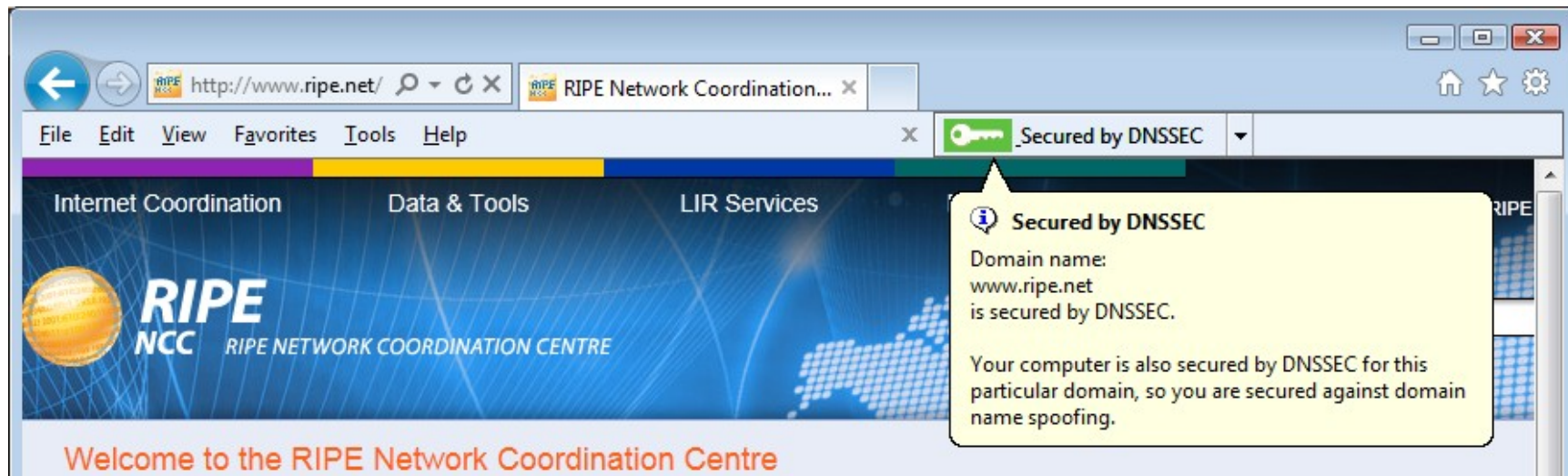
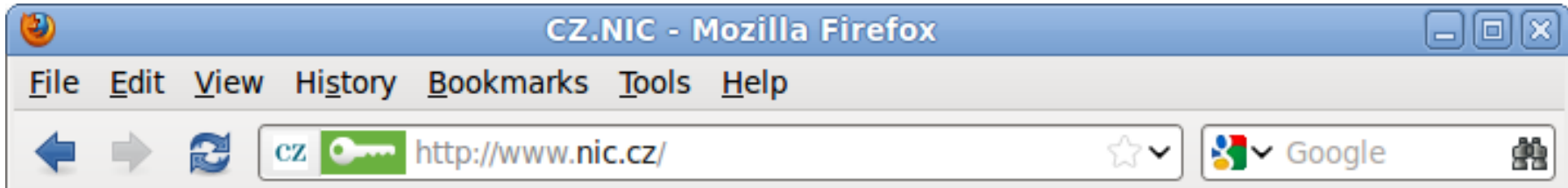
# Domain doesn't exist



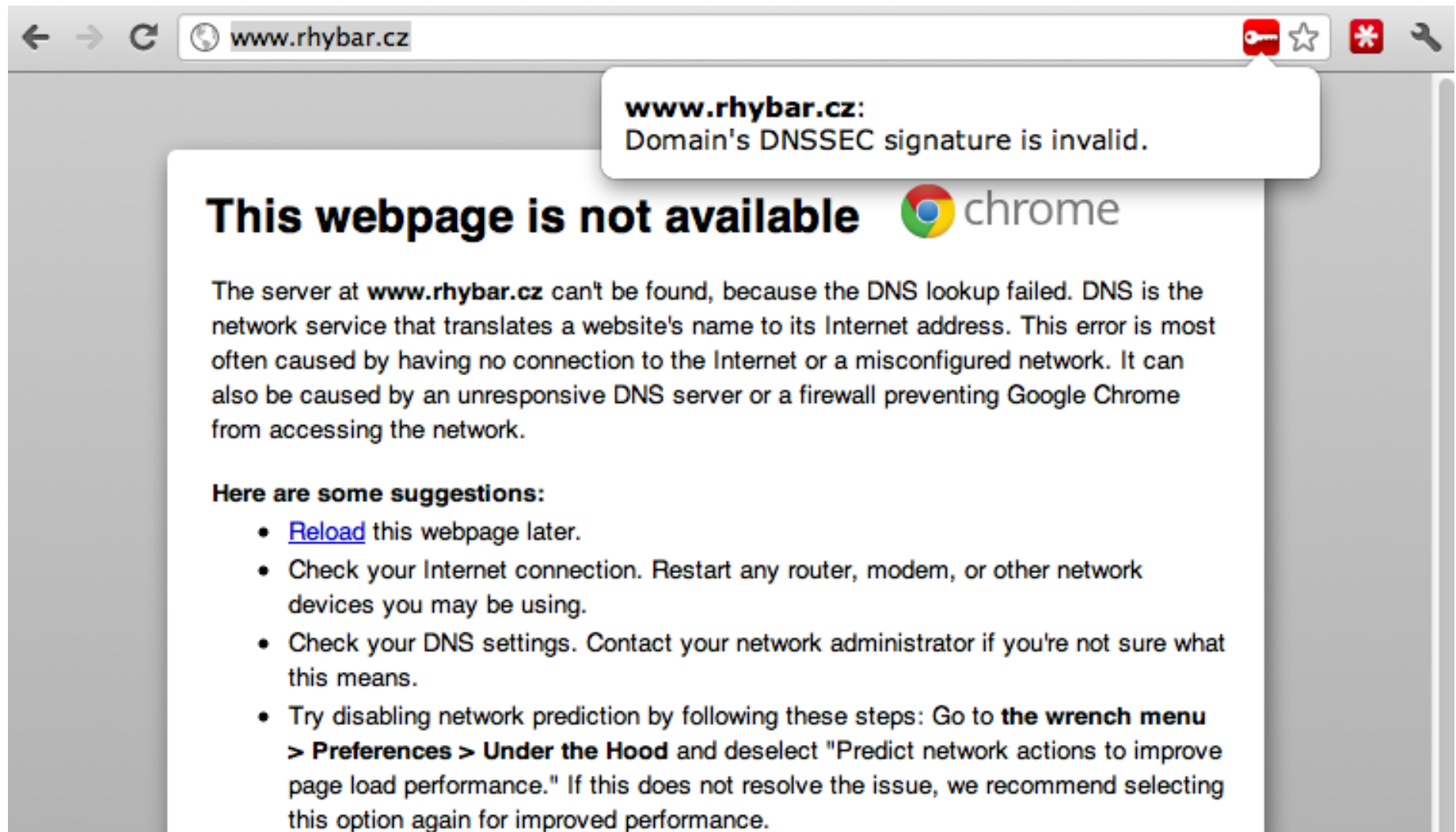
# Validation failure (invalid signatures)




# DNSSEC status in the browser



# Validation failure



The screenshot shows a Chrome browser window with the address bar containing `www.rhybar.cz`. A notification bubble above the address bar reads: **www.rhybar.cz:** Domain's DNSSEC signature is invalid.

**This webpage is not available**  chrome


The server at **www.rhybar.cz** can't be found, because the DNS lookup failed. DNS is the network service that translates a website's name to its Internet address. This error is most often caused by having no connection to the Internet or a misconfigured network. It can also be caused by an unresponsive DNS server or a firewall preventing Google Chrome from accessing the network.

**Here are some suggestions:**

- [Reload](#) this webpage later.
- Check your Internet connection. Restart any router, modem, or other network devices you may be using.
- Check your DNS settings. Contact your network administrator if you're not sure what this means.
- Try disabling network prediction by following these steps: Go to **the wrench menu > Preferences > Under the Hood** and deselect "Predict network actions to improve page load performance." If this does not resolve the issue, we recommend selecting this option again for improved performance.



# Features

- Icon with colored key:
  - address bar (Firefox, Chrome)
  - a separate toolbar (IE)
- Color match DNSSEC status 
- Independent DNS lookup
- Relies on recursive resolver for validation
  - uses AD bit
- Different DNS resolvers may be selected

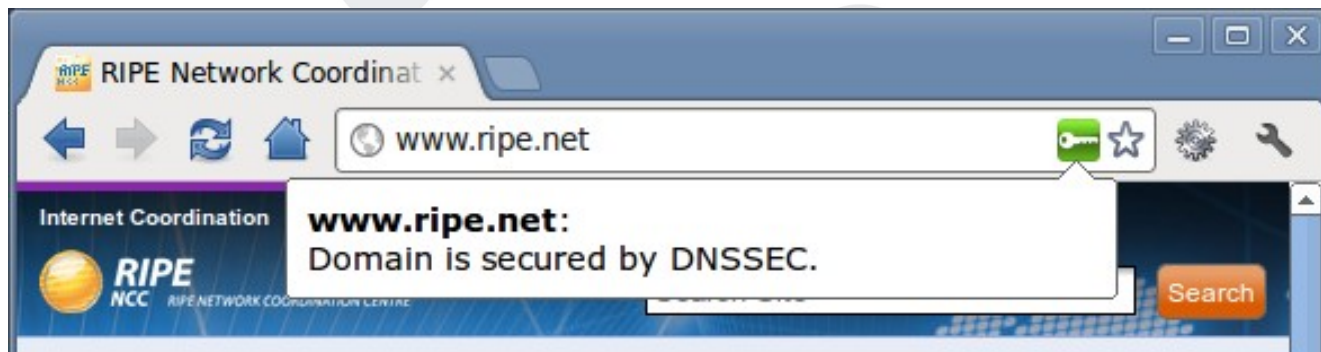
# Firefox

- stable, production ready
- Linux, Mac OS X, Windows
- <http://www.dnssec-validator.cz/>
- <https://addons.mozilla.org/cs/firefox/addon/dnssec->



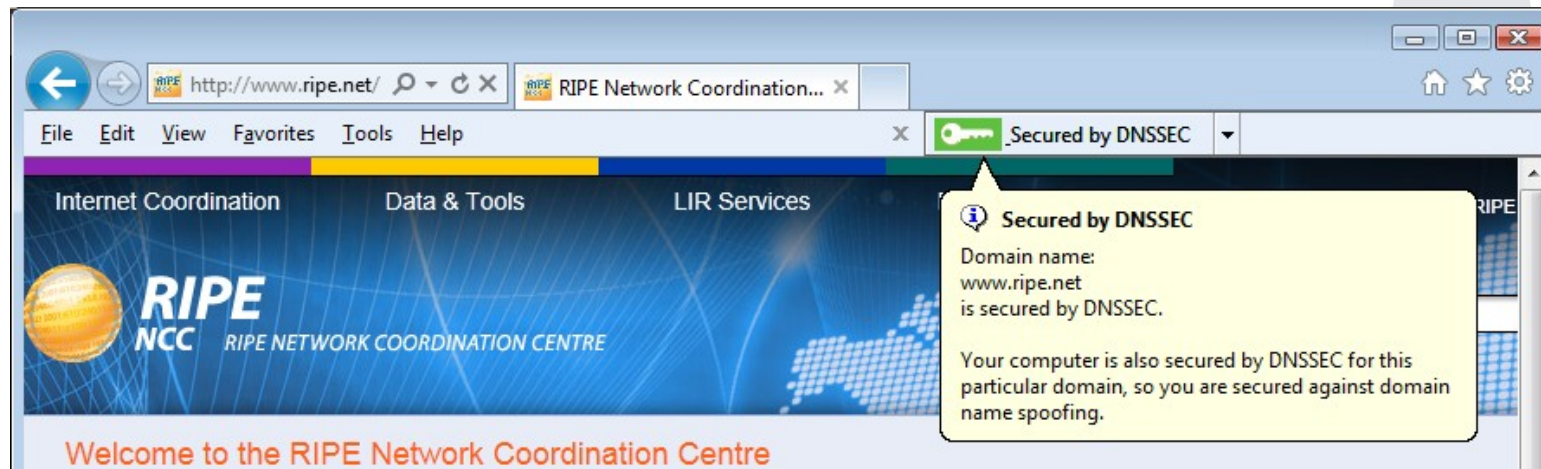
# Chrome

- alpha release
  - no caching, no proxy support
  - Missing API in Chrome lacks API to validate IP address
- Linux, Mac OS X, Windows
- <https://labs.nic.cz/page/990/>
- <https://chrome.google.com/webstore/detail/hpmbmjbcmglohjdcbicfdhmgmcoeknm>



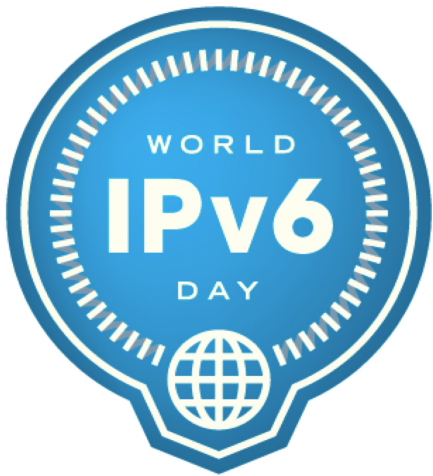
# Internet Explorer

- technical preview (pre-alpha)
  - only system resolver supported
  - no caching, no proxy support
- IE 6.0-9.0, Windows XP and higher
- <https://labs.nic.cz/page/1031/>



# Future development

- Stabilize and merge the common code
- Move validation and the root key to Add-Ons
  - Embed libunbound library
- Safari(?)
- Mobile platforms(?)



# Questions?

