

# Infrastructure Security DNS and Routing

## Status and Update

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# DNSSEC Is Live!

- RIPE has signed all IPv4 reverse and a select set of forward zones:
  - <http://www.ripe.net/projects/disi/keys/>
- And will create secure delegations:
  - <https://www.ripe.net/rs/reverse/dnssec/registry-procedure.html>
- NIC-SE has signed .se and will create secure delegations:
  - <http://dnssec.nic.se/>

# DNSSEC Deployment Initiative

- Open working group focusing on deployment issues - active mailing list, regular telecons
- Organizes DNSSEC Workshops at conferences around the world (ICANN, Internet2, Joint Techs, APRICOT).
- Web site for news, charts deployment progress, provides support for deployments, and outreach to those considering DNSSEC:
  - <http://www.dnssec-deployment.org/>

# DNSSEC Deployment Initiative

Monday, February 13, 2006

## News

Posted: 12 Jan 2006  
[RIPE NCC Signs Reverse Delegation Zones](#)

Posted: 19 Dec 2005  
[DNSSEC Hedges Against Degrading Trust in SHA-1](#)

Posted: 13 Dec 2005  
 IETF standard for the registrar-to-registry communications for DNSSEC published ([RFC 4310](#))

[News Archive](#)

## New on the Site

- [DNSSEC Workshop - The Registrars' View - ICANN Vancouver \[proceedings\]](#)
- [Measuring the resource requirements of DNSSEC](#)

## Welcome

This is the website for the DNSSEC Deployment Initiative, which is a self-organizing, open effort made up of anyone active in deploying DNSSEC. *The initiative* includes an expert [working group](#) holding frequent discussions. *The site* publishes news, charts deployment progress, provides support for those actively engaged in deploying the protocol, and offers outreach to those considering DNSSEC.

DNSSEC (a shorthand for DNS security extensions), is an addition to the DNS that allows enabled systems to detect compromised domain name information. It does not stop or prevent attack, but it allows the systems to identify DNS data that is untrustworthy.

[RFC 3833](#) describes threats and attacks on the domain name system, and [this page](#) collects information on actual attacks and measurements related to risk. The extension for DNSSEC is specified primarily in [RFC 4033](#), [RFC 4034](#) and [RFC 4035](#). An excellent introduction and explanation of DNSSEC is provided by this [document](#). Another key piece for deployment, the Extensible Provisioning Protocol ([EPP](#)) application for registrar-to-registry communication of DNSSEC information, is specified in [RFC 4310](#).

For extensive technical background information, please visit the [DNSSEC - DNS Security Extensions](#) site. This is a great site with important references to the development of the protocol, configuration guides, technical papers and so on.

Other Sites to Visit:

- [DNSSEC Project at NIST](#)
- [NLnet Labs DNSSEC](#)
- [DNSSEC Deployment at RIPE](#)
- [DNSSEC at .SE](#)
- [The DNSSEC Tools Project at Sparta](#)



# DNSSEC-Tools Project


- Create a set of tools, patches, applications, wrappers, extensions, and plugins to ease DNSSEC Deployment:
  - <http://www.dnssec-tools.org/>
- Current release is v0.9 from 02/10/2006
- Also have released a modified Firefox 1.5 RPM that uses DNSSEC-Tools to validate signed zones.

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The Dnssec-Tools Project

http://www.dnssec-tools.org/

The Dnssec-Tools Project



# DNSSEC Tools

*Is your domain secure?*

### Project Links

<a href="#">Download</a>	<a href="#">SF Project Page</a>	<a href="#">Mailing Lists</a>	<a href="#">CVS</a>	<a href="#">Bug Database</a>	<a href="#">Test Zone</a>
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## About This Project

The goal of the DNSSEC-Tools project is to create a set of tools, patches, applications, wrappers, extensions, and plugins that will help ease the deployment of DNSSEC related technologies.

## Project News

**[DNSSEC-tools 0.9 released](#)** 2006-02-10 22:10 - [dnssec tools](#) [XML](#)  
We've released DNSSEC-tools 0.9, which is the latest snapshot of our DNSSEC aware tools and libraries. Get it from [http://sourceforge.net/project/showfiles.php?group\\_id=121671](http://sourceforge.net/project/showfiles.php?group_id=121671) !  
[Read More »](#)

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The Dnssec-Tools Project

http://www.dnssec-tools.org/

The Dnssec-Tools Project

## Applications:

Tool	Description	Screen-Shots
<a href="#">zonesigner:</a>	<b>A zone database signing utility that takes care of all necessary steps to sign and maintain a zone with as little hassle as possible.</b>	 <a href="#">Example Output</a>
<a href="#">donuts:</a>	<b>A dnslint like application to analyze zone files. Specifically tailored to dnssec but also tests for more general (non-dnssec) problems.</b>	 <a href="#">Example Output</a>
<a href="#">donutsd:</a>	<b>A long running daemon that routinely runs donuts on a number of zones and e-mails the appropriate administrators. It is intened to notify admins when their zones are expiring or have other problems.</b>	
<a href="#">mapper:</a>	<b>Maps DNS realms color coding the results to allow for easy visual interpretation of the results. Color codes are based on record types and/or errors and warnings.</b>	

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The Dnssec-Tools Project

http://www.dnssec-tools.org/

## Mailing Lists

We have a number of [Mailing Lists](#) to which you can subscribe

## DNSSEC Operator Guidance Documentation

- DNSSEC-Tools Software User Manual [\[PDF\]](#)
- [Draft] DNSSEC-Tools HOWTO and Step-by-Step Guide To Signing Your Zone [\[PDF\]](#) [\[HTML\]](#)
- Step-by-Step DNS Security Operator Guidance Document (using BIND Tools) [\[PDF\]](#)

## Other DNSSEC-Related Documentation

- DNSSEC-101 documents
  - [Domain Information Signing for DNS](#)
  - [Transaction Authentication for DNS](#)
- DNSSEC Presentations
  - [DNS Security Technical Overview](#) (ICANN Workshop, Apr 2005)
  - [DNSSEC Specification and Operational Overview](#)
  - [DNSSEC Deployment: Big Steps Forward; Several Steps to Go](#) (NANOG-32 Meeting, Oct 2004)
  - [Planning for DNSSEC deployment](#) (wwTLD Community Meeting, Cape Town, Nov 2004)
  - [DNSSEC: Browser and MTA Support](#) (APRICOT, Feb 2005)
- Demos and Experiments

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SourceForge.net: Files

http://sourceforge.net/project/showfiles.php?group\_id=121671

SourceForge.net: Files

RPMs dnssec-tools 0.9 February 10, 2006 Download

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**File Releases**

Below is a list of all files released by this project. Before downloading, you may want to read Release Notes. The current release for each package is shown.

Package	Release (date)	Filename	Size (bytes)	Downloads	Architecture	Type
<b>dnssec-tools</b>						
Latest	<input checked="" type="checkbox"/> <a href="#">dnssec-tools 0.9</a> [Notes] (2006-02-10 16:38)					
		<a href="#">dnssec-tools-0.9-1.src.rpm</a>	572521	5	None	None
		<a href="#">dnssec-tools-0.9.tar.gz</a>	569225	0	None	None
	<input type="checkbox"/> <a href="#">DNSSEC-Tools 0.2</a> [Notes] (2005-08-31 14:14)					
	<input type="checkbox"/> <a href="#">dnssec-tools 0.1</a> [Notes] (2005-05-06 11:41)					
<b>RPMs</b>						
Latest	<input checked="" type="checkbox"/> <a href="#">dnssec-tools 0.9</a> [Notes] (2006-02-10 16:38)					
		<a href="#">dnssec-tools-0.9-1.fc4.i386.rpm</a>	120998	1	None	None
		<a href="#">dnssec-tools-debuginfo-0.9-1.fc4.i386.rpm</a>	243304	0	None	None
		<a href="#">dnssec-tools-libs-0.9-1.fc4.i386.rpm</a>	77297	1	None	None
		<a href="#">dnssec-tools-libs-devel-0.9-1.fc4.i386.rpm</a>	98974	0	None	None
		<a href="#">dnssec-tools-libs-devel-0.9-1.fc4.i386.rpm</a>	67283	1	None	None
	<input checked="" type="checkbox"/> <a href="#">Firefox 1.5 with dnssec</a> [Notes] (2006-02-06 16:15)					
		<a href="#">firefox-1.5-dnssec.1.fc4.i386.rpm</a>	11968051	6	None	None
		<a href="#">firefox-1.5-dnssec.1.src.rpm</a>	41540976	0	None	None
<b>Totals:</b>	<b>5</b>	<b>11</b>	<b>56268781</b>	<b>217</b>		

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# Securing the Routing Infrastructure

- Important problem, but no traction on deployable solutions
- Three workshops have been held with a wide net of the interested parties
  - Operators (ISPs, access and content providers), vendors, security geeks
  - DHS hosted, anxious to find and facilitate a solution
  - <http://www.hsarpacyber.com/public/spri/>

# Operators' Emphasis

- A strong call from the operators for an authenticated list of authorized prefix originations (accurate, complete, secure..)
  - Useful in responding to customer requests to route a prefix
  - Useful in debugging routing difficulties
  - Useful in building filters
  - Necessary first step of any solution for BGP route verification

# New ARIN Policy Suggestion

- Recommendation
  - New field in address templates (direct and sub delegations) for list of permitted ASs
- Benefits
  - Inherits self-discipline of completing the form (IRR entries aren't always done)
  - Inherits scrutiny of ARIN process on creation
  - ARIN is authority for who is allocated prefixes
  - Any IRR would have to check prefix with RIR

# Authentication and Currency in IRRs

## Authenticating IRR objects

- RIR run IRRs have internal access to authentication for prefix holders
- Non-RIR run IRRs would have to find a way to get that authentication from the RIR
  - Same is true for RIR IRR objects referring to non-member resources
- Currency for IRR objects
  - Reclaimed resources have to result in IRR purges
  - Why not a TTL in IRR objects?