



Infoblox DNSSEC Solution simple, secure and reliable

4. DNSSEC-Testbed-Meeting 24.11.2010

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- **Makes the process of deploying and managing DNSSEC as simple as possible**
 - *Transparent* to the end user
 - *Single-click* configuration
 - *Automatic* and *on-the-fly key generation* and management

- **Uses the latest technology and protocol features**
 - BIND 9.7.0 with NSEC3 support

- **HSM Module planed for future release**



Infoblox Appliances Automate Core Network Services



DNS DHCP IPAM FTP/TFTP/HTTP NTP MORE...

Microsoft
GOLD CERTIFIED
Partner



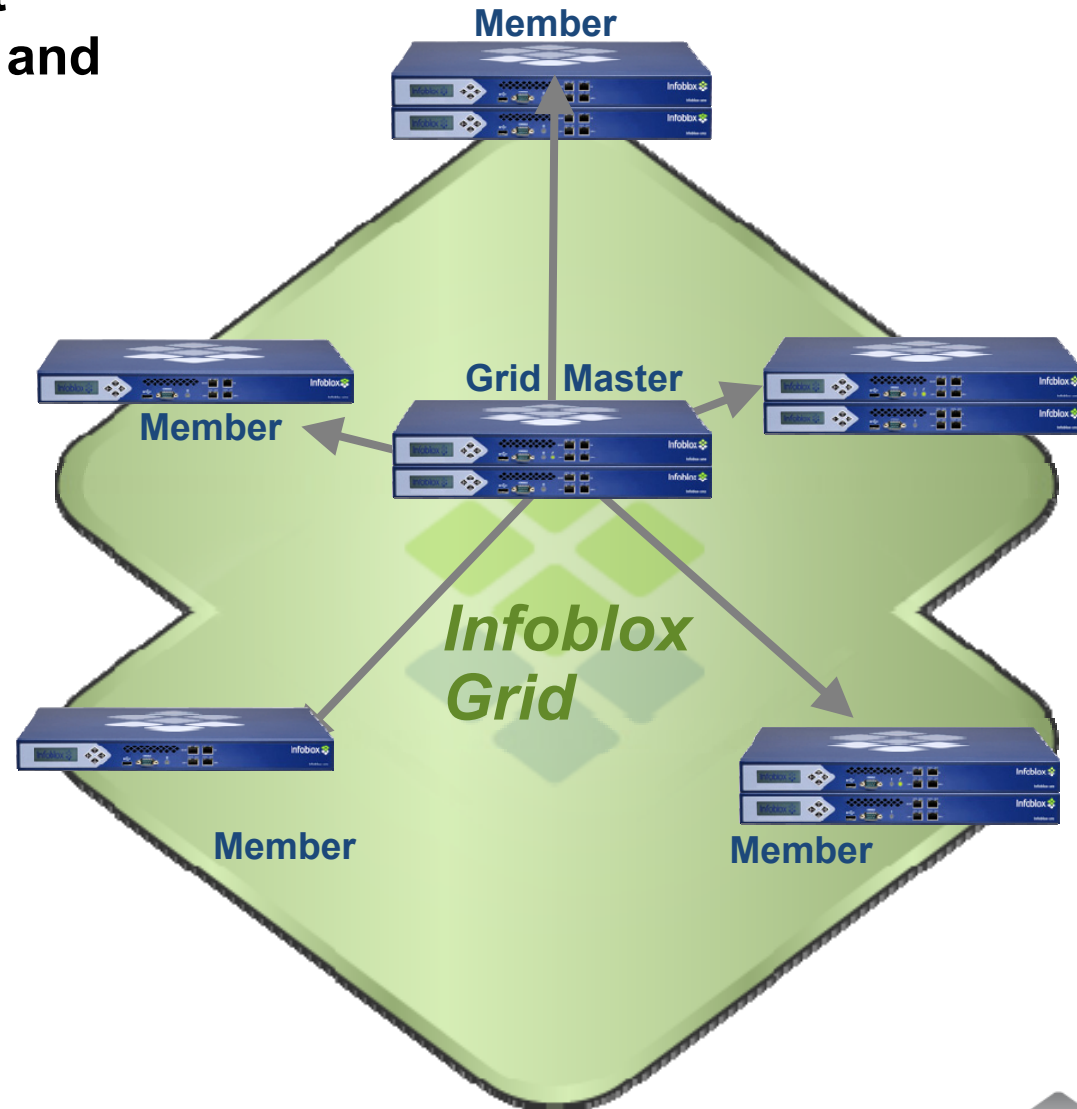
- Integrated core network services on hardened appliances
- Centralized visibility & control of appliances, protocols and data

SIMPLE

SECURE

RELIABLE

- One central Management Interface to all your DNS and even IPAM Data
- API for automation
- Easy to upgrade
- Easy to monitor/ audit



Example zone w/o DNSSEC



example.org Zone

Records

Go to

<input type="checkbox"/>	Name ▲	Comment	Type	Data	Address
<input type="checkbox"/>		Auto-created by Add Zone	SOA Record	Serial 12 MNAME member1.infoblox.net RNAME please_set_email Refresh 10800 Retry 1080 Expire 2592000 Negative Caching TTL 900	
<input type="checkbox"/>		Auto-created by Add Zone	NS Record	member1.infoblox.net	
<input type="checkbox"/>		Auto-created by Add Zone	NS Record	member2.infoblox.net	
<input type="checkbox"/>	test		A Record	1.2.3.4	1.2.3.4

Example zone with DNSSEC



example.org Zone

Records

Go to

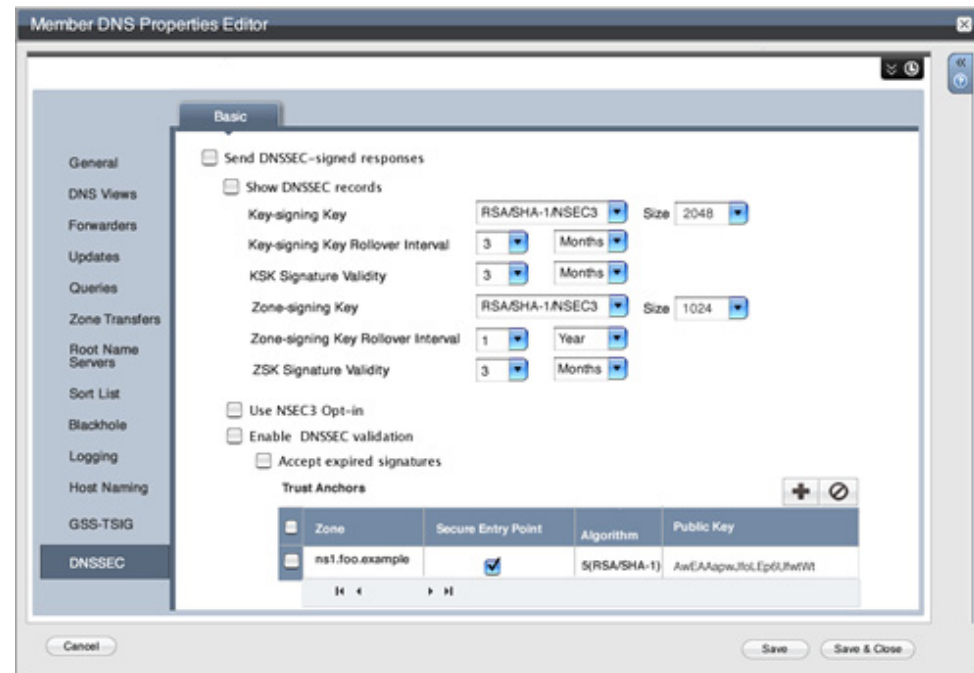
<input type="checkbox"/>	Name	Comment	Type	Data	Address
<input checked="" type="checkbox"/>		Auto-created by Add Zone	SOA Record	Serial 14 MNAME infoblox.localdomain RNAME please_set_email Refresh 10800 Retry 1080 Expire 2592000 Negative Caching TTL 900	
<input type="checkbox"/>			RRSIG Record	DNSKEY 5 2 43200 20101125140705 20101	
<input type="checkbox"/>			RRSIG Record	DNSKEY 5 2 43200 20101125140705 20101	
<input type="checkbox"/>			DNSKEY Record	257 3 5 AwEAAaJEiNTKbRiPY/saHJroQnQt	
<input type="checkbox"/>			DNSKEY Record	256 3 5 AwEAAavo0w7k7pNICjdfvD8kKSXzV	
<input type="checkbox"/>			RRSIG Record	SOA 5 2 28800 20101125140705 201011211	
<input type="checkbox"/>		Auto-created by Add Zone	NS Record	member2.infoblox.net	
<input type="checkbox"/>			RRSIG Record	NSEC 5 2 900 20101125140705 2010112113	
<input type="checkbox"/>			NSEC Record	test.example.org NS SOA RRSIG NSEC DN	
<input type="checkbox"/>		Auto-created by Add Zone	NS Record	member1.infoblox.net	
<input type="checkbox"/>			RRSIG Record	NS 5 2 28800 20101125140705 2010112113	
<input type="checkbox"/>	test		A Record	1.2.3.4	1.2.3.4
<input type="checkbox"/>	test		NSEC Record	example.org A RRSIG NSEC	
<input type="checkbox"/>	test		RRSIG Record	A 5 3 28800 20101125140705 201011211307	
<input type="checkbox"/>	test		RRSIG Record	NSEC 5 3 900 20101125140705 2010112113	



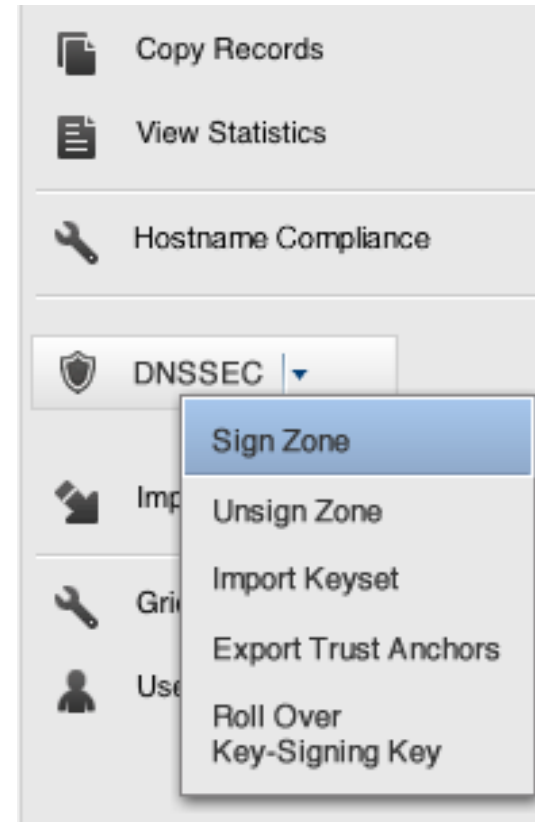
Easy Access to All Global DNSSEC Configuration Parameters



- **Central configuration of all DNSSEC parameters**
- **Enforce standards by configuring DNSSEC parameters at a Grid level**
 - Default key type, size and validity period
 - Defaults based on NIST-800-81 and RFC 4641 standards
- **NSEC and NSEC3 support included**



- **Any zone can be signed with a single click” by using the “Sign Zone” toolbar button**
 - Keys are generated on the fly and records are automatically signed
 - Auto-creation of all associated DNSSEC records
- **Automatic maintenance of signed zones**
 - All key expiration and resigning are handled automatically
 - DNSSEC zones automatically resigned when new records are added



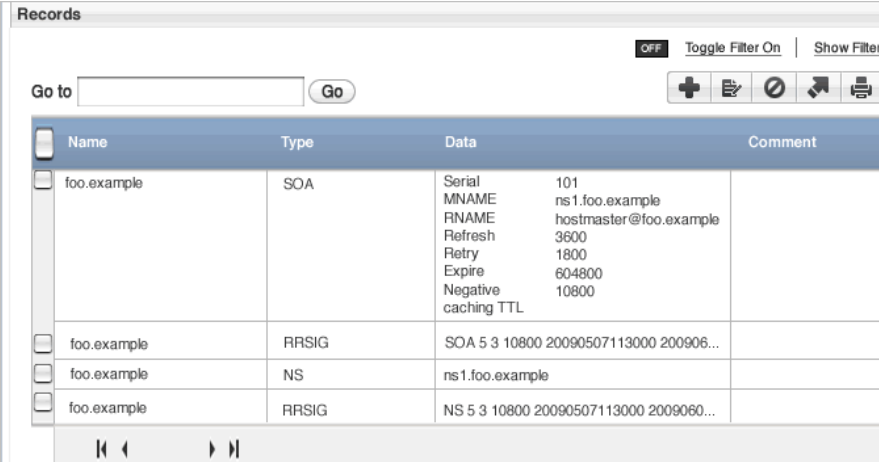
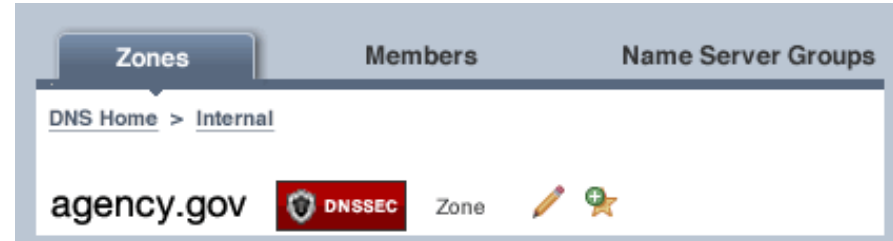
More useful tasks...



The screenshot shows the Infoblox web interface for DNS management. The top navigation bar includes 'Dashboard', 'Data Management', 'Smart Folders', 'Grid', and 'Administration'. Below this, there are tabs for 'IPAM', 'DHCP', 'DNS', and 'File Distribution'. The main content area is titled 'Zones' and shows a table of DNS zones. A toolbar on the right contains various actions like 'Add', 'Open', 'Edit', 'Delete', and a context menu with options like 'Sign Zone', 'Unsign Zone', 'Import Keyset', etc.

Name	Type	Comment	Function	Signed
<input type="checkbox"/> 0.0.127.in-addr.arpa	Auto-created		IPv4 Reverse-mapping	No
<input checked="" type="checkbox"/> example.org	Authoritative		Forward-mapping	No

- **Signed zones are easily identified with the DNSSEC icon**
 - The following record types are supported: DNSKEY, RRSIG, DS, NSEC, NSEC3, NSEC3PARAM
- **New Zone Signing Keys are automatically generated before the current keys expire**
 - Key rollover is transparent to the admin
 - Admins are automatically notified in the GUI before keys expire

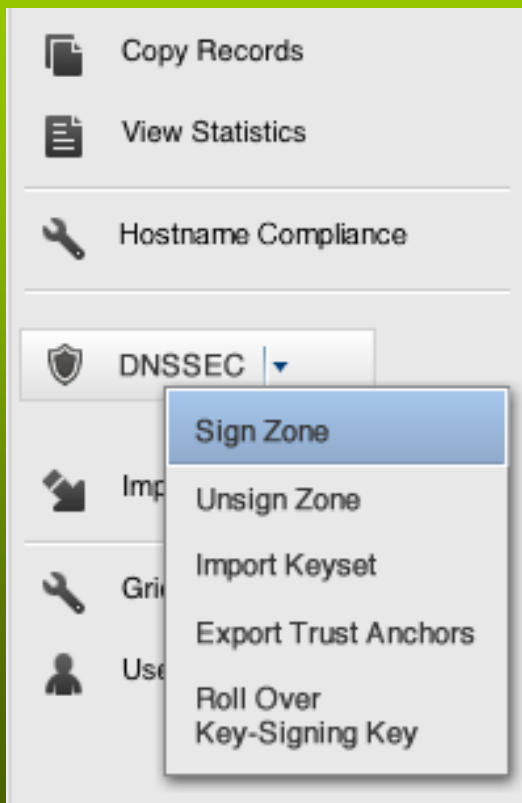


The screenshot shows the 'Records' view in the Infoblox GUI. It includes a search bar with 'Go to' and a 'Go' button, and a table of records. The table has columns for Name, Type, Data, and Comment. The records are for 'foo.example' with types SOA, RRSIG, NS, and RRSIG.

Name	Type	Data	Comment
foo.example	SOA	Serial 101 MNAME ns1.foo.example RNAME hostmaster@foo.example Refresh 3600 Retry 1800 Expire 604800 Negative caching TTL 10800	
foo.example	RRSIG	SOA 5 3 10800 20090507113000 200906...	
foo.example	NS	ns1.foo.example	
foo.example	RRSIG	NS 5 3 10800 20090507113000 2009060...	

The Infoblox way

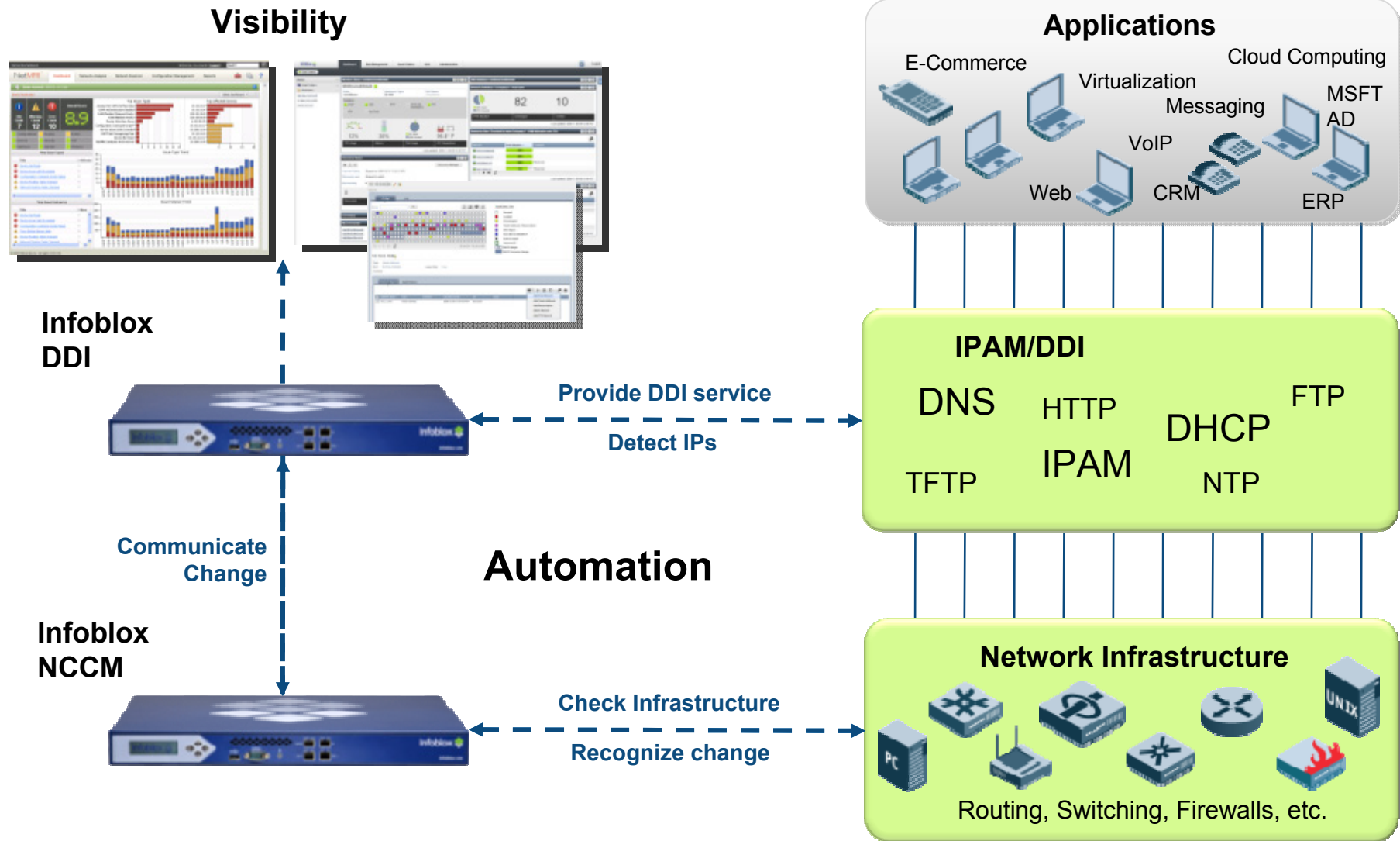
- One click



The BIND way

- The NIST guidelines for signing a single zone with standard BIND tools are 16 pages long
- Typical steps required to sign a zone:
 - Generate a key pair for the Key Signing Key using the command line tool `dnssec-keygen`
 - Generate a key pair for the Zone Signing Key using the command line tool `dnssec-keygen`. E.g.,
`dnssec-keygen -a RSASHA1 -b 1024 -n ZONE foo.com`
 - Add the output of the KSK and the ZSK public key to the zone db file
 - Use the `dnssec-signzone` command line tool to sign the zone using the private key pair. E.g.,
`dnssec-signzone -o foo.com -k Kfoo.com.+005+67829.key /var/named/zonedb.foo.com Kfoo.com.+005+45798.key`
- The zone must be re-signed every time there is a change in the contents
- Manual process is error prone and can take hours
- Tool development requires significant expertise

Even more... also integrates NCCM





For More Info

DNS Security Center:

<http://www.infoblox.com/library/dns-security.cfm>

Infoblox DNSSEC Offering:

<http://www.infoblox.com/en/solutions/technology-solutions/dnssec.html>

Infoblox general:

<http://www.infoblox.com>

Cricket Liu:

<http://www.ask-mrdns.com>