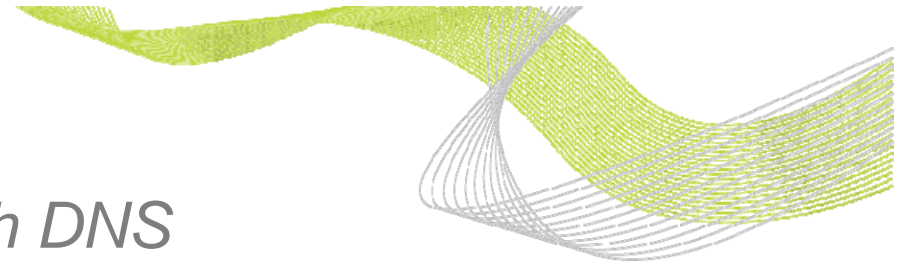


Nominum DNSSEC Solutions Overview

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Nominum

Making the Internet better through DNS

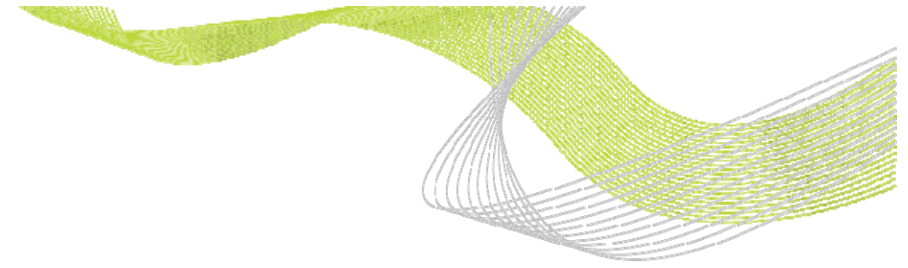


Multiple Reasons Nominum is Better		
Corporate Resume	Solution Diversity	Operational
Dr. Paul Mockapetris Invented the DNS in 1983	Range of solutions addressing business needs	Broadest network coverage - over 500 million end users
Bob Halley Architect of BIND8 and BIND9	In-Net, Off-Net, Combined offerings	Industry-leading performance
Ted Lemon Developer of ISC DHCP Over 30 Internet and networking standards authored or co-authored	Hosted Network Services	No restart for any configuration change
	Consumer Applications	Multiple layers of security

Nominum is building the new Internet based on proven infrastructure

Just a few of our more than 140 customers representing over 30% of the world's Internet traffic

Product Overview



- Software systems
 - ANS and ANS Premier
 - Vantio and policy software modules
 - Centris
 - DCS
 - Navitas
- Hosted Systems
 - Skye Resolution
 - Skye Authority
 - Skye Network Protection service

Authoritative Name Server/Premier (ANS/P)

Software-only solution for authoritative DNS

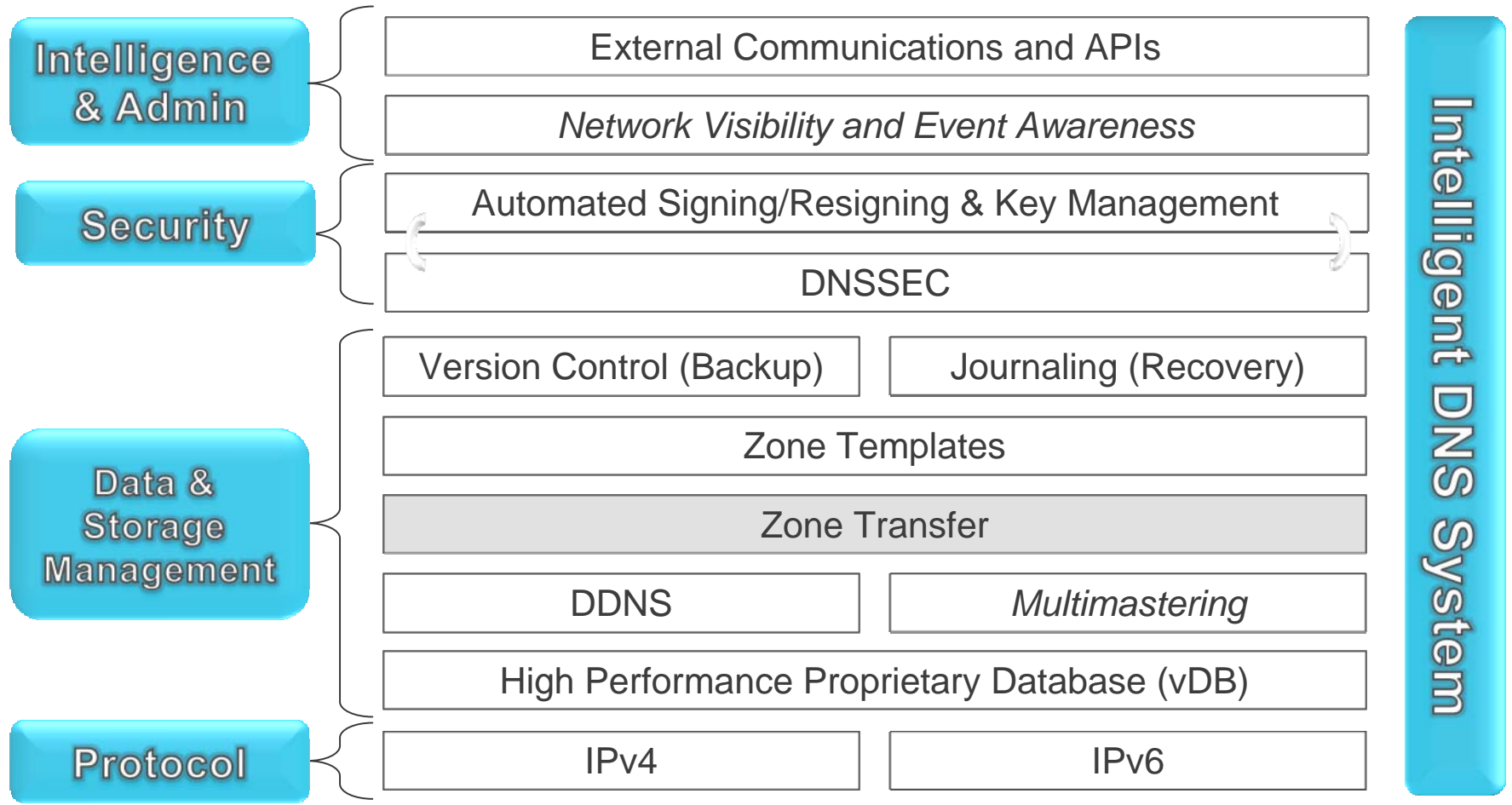
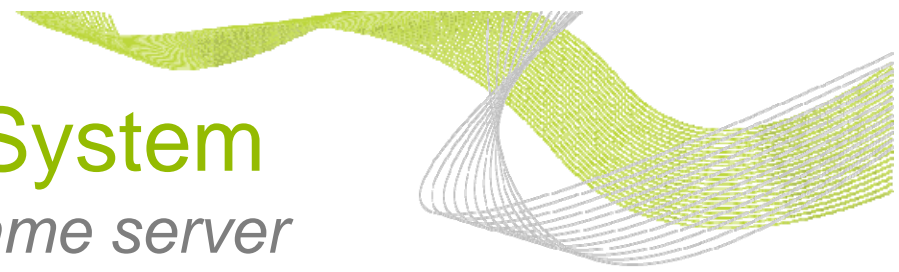


- Proprietary database
 - Scales to millions of names, zones, and records
- High performance
 - Over 100K QPS with millisecond latency
 - On-the-fly DNS zone updates without requiring server restart
 - Fast reload time even with the highest number of resource records
- Full compliance with DNSSEC standards
 - Automated DNSSEC lifecycle management
- Rich management layer
 - SOAP/XML APIs
 - SNMP and Alarms
 - Command Line Interface
 - Web GUI
 - Command Channel APIs (C, Java, Perl, Python)



ANS/P Intelligent DNS System

Beyond a simple authoritative name server



Demand Visibility and Awareness

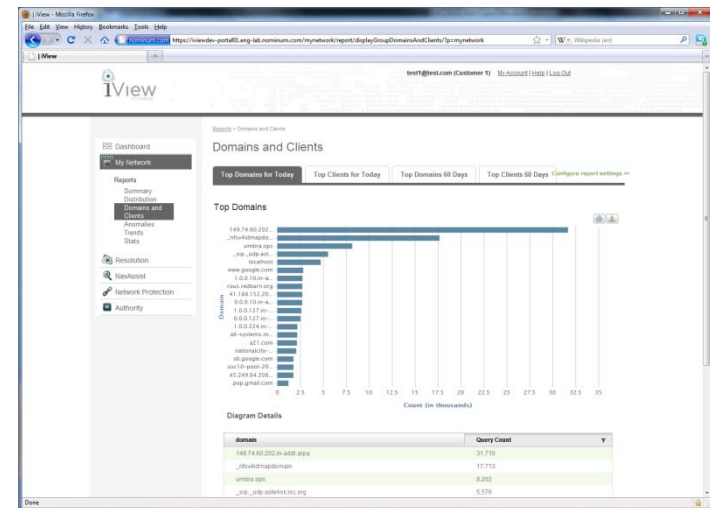


- Without visibility, you're flying blind
- Create events and/or alerts based on DNS attributes

- Include or exclude any of the below:

client-address	domain	local-address	query-class	regex-name
client-network	Flags	local-port	query-id	result-code
client-port	ip-version	name	query-type	view

- Set duration, high and low watermarks for alerts
- Alert via SNMP, syslog or command channel event
- Graphical Reporting



ANS/P and DNSSEC

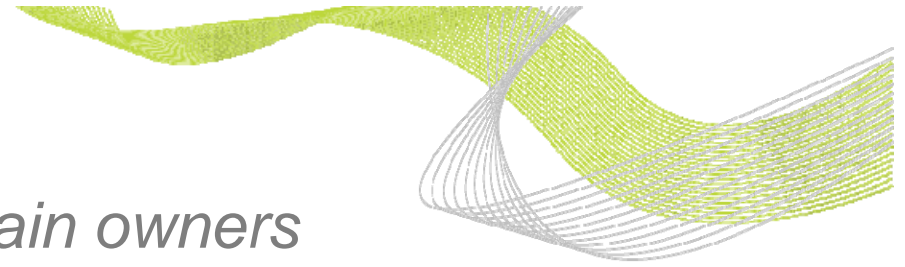
Vital functionality for today's domain owners

- Challenges

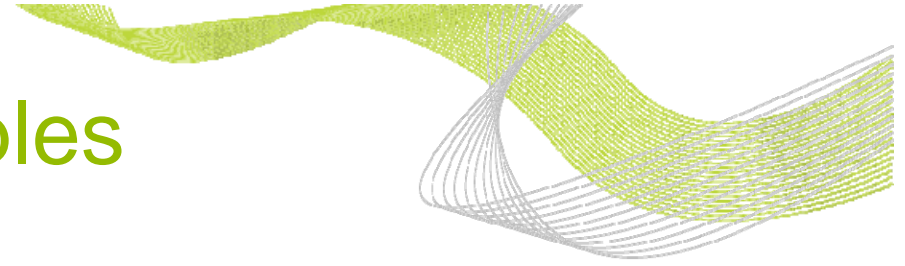
- Database size can increase by 6x or more
- Key Administration
- Managing Signing of Zones
- Updating Zones When Data Changes
- Administration, Administration, Administration!!

- The solution - Nominum DNSSEC Packs

- Administrative bundle that manages DNSSEC lifecycle automation
- All activities done via single command utility
- "DNSSEC Made Easy"
 - Integration of all DNSSEC functions
 - Complete automation
 - No change to data interface



ANS/P real world examples



- Securing a zone

```
- ans_dnssectool create-pack --name initial  
example.com
```

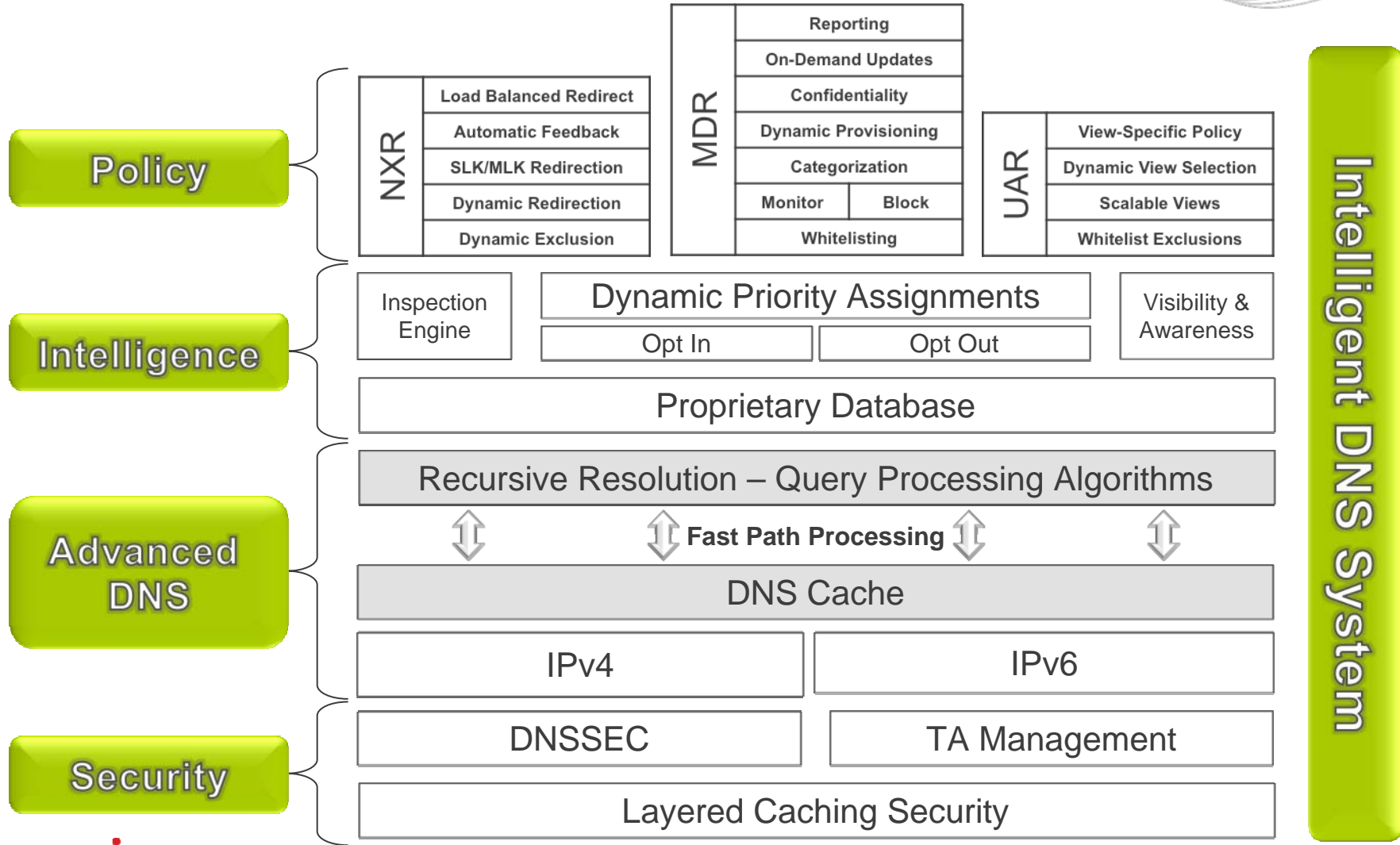
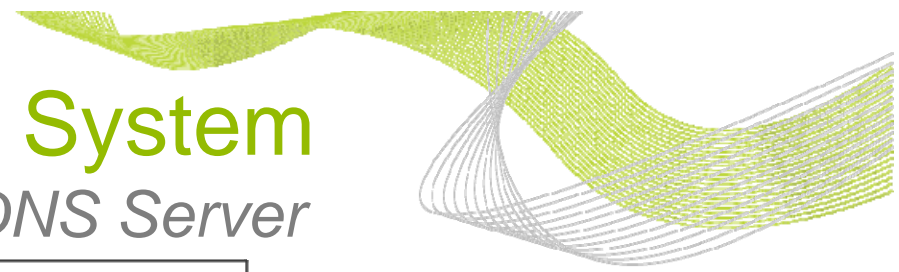
- Issuing a key rollover

```
- ans_dnssectool rollover-zsk -name santa-  
claus-zsk \                               --start  
20101206123400 example.com
```

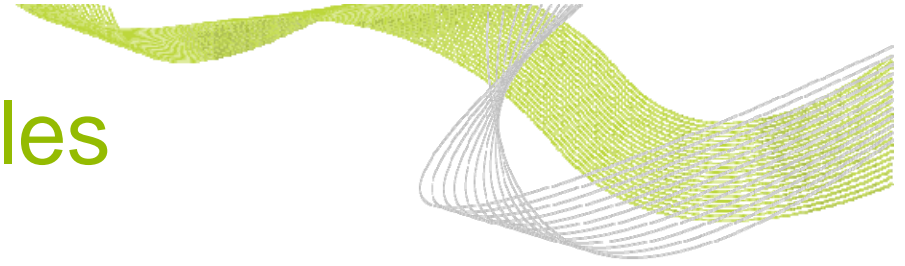
- You can provision multiple ZSK key rollovers that all will be stored in the database and executed appropriately

Vantio Intelligent DNS System

More than a Simple Caching DNS Server



Vantio real world examples



- Adding the root key

- `view.managed-keys-set name=world domain=. initial-keys='(257 3 8 AwEAAagA.....`

- Even easier with supplied script that downloads and verifies it

- `getrootkey4vantio.py`

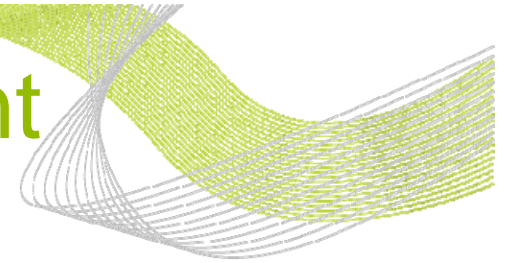
- Temporary disable validation for a domain

- `view.update name=world negative-trust-anchors+=(example.com)`

- Inspect a record in the server

```
vantio> inspect name=www.denic.de
{
  type => 'inspect'
  view => 'world'
  name => 'www.denic.de.'
  exists => '1'
  types => {
    A => {
      exists => '1'
      ttl => '84584'
      data => ('81.91.170.12')
      trust => 'proven-insecure'
      origin => '2001:608:6:6::11'
```

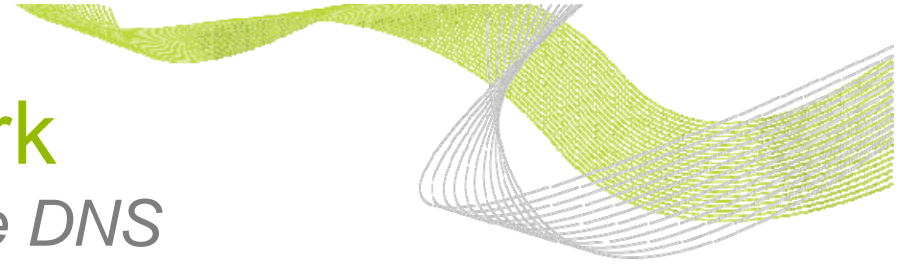
Comcast DNSSEC Deployment



- Most advanced DNSSEC deployment in the world
- DNSSEC enabled on all Vantio servers nationwide
 - Will sign all 5,000 managed domains by Q1/2011
- 100% Nominum Solution
 - "we have been working closely with our vendor to make sure the tools were easy to use and that it was not an onerous process." - Jason Livingood (Executive Director of Internet Systems Engineering)

Nominum Global Network

Worldwide network for full service DNS

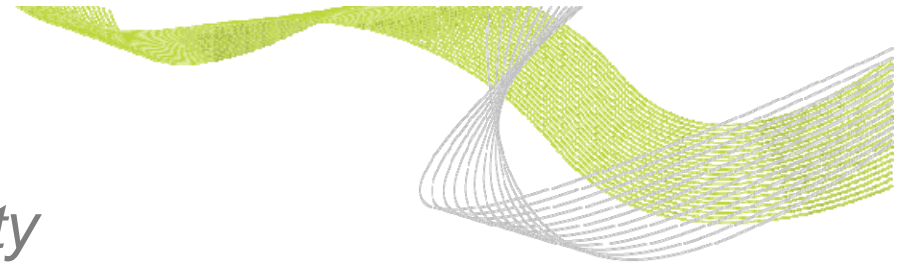


- The network
 - Highly redundant global network
 - Multi-Tier-1 ISP connectivity
 - Fully redundant, industry-best network elements
 - Carrier-class data centers
 - Site-level service redundancy and load balancing
 - Anycast architecture
 - State-of-the-art security
 - Full DNSSEC compliance



SKYE Resolution

On-demand caching DNS capacity



Hosted caching DNS service offering that seamlessly extends the capacity and resilience of in-network caching DNS infrastructure

- Three implementation options
 1. Total DNS offload
 2. Virtual network extension
 3. Disaster recovery service
- Three configuration options
 1. Client configuration
 2. Load Balancer
 3. IP Anycast





SKYE Authority Hosted DNS Service

Proven 100% DNS Uptime & Fast Resolution

- Highly available, high speed, anycast DNS network with 13 datacenters world-wide
- Nominum anycast network routes user requests to the closest datacenter

DDoS Protection

- Multi-layered security protection (software, network) to pro-actively mitigate heavy DDoS attacks

Automated DNSSEC

- Automated zone signing eliminates complexity associated with DNSSEC roll-out

Real-time Visibility and Control

- iView service offers complete visibility into the DNS traffic
- APIs to automatically create and manage zones that can integrate with your own portal

Lower TCO

- Save on additional server, network hardware, maintenance as well as operational costs associated with bandwidth, power, space, cooling.

Questions

