

DNSSEC Deployment Activity in Japan - Introduction of DNSSEC Japan -

Yoshiki Ishida, Yoshiro Yoneya, Tsuyoshi Toyono, Miki Takata DNSSEC Japan

Agenda



- Background
- Introduction of DNSSEC Japan
- Accomplishments from the activity
- Future plan

Agenda



- Background
- Introduction of DNSSEC Japan
- Accomplishments from the activity
- Future plan

Background(1)



• DNSOPS.jp



- DNS Operators Group in Japan
- Voluntary DNS operators community in Japan
- Established on June 2006, forked from JANOG
 - JANOG(Japan Network Operators' Group)
 - http://www.janog.gr.jp/
- The Purpose of DNSOPS.jp is to share know-how and to discuss about daily DNS operations
- Activities:
 - Semiannual BoFs (about 100 participants)
 - ML (about 1400 subscribers)
 - <u>http://dnsops.jp/</u> (Japanese only)

Background(2)



- DNSSEC deployment is now ongoing
 - Almost DNS operators are not ready for DNSSEC.
 - It is difficult to adopt DNSSEC for average DNS operators, who have no documents in Japanese, no experience, no know-how, and no L10N activity
 - Signing schedules are coming up not only ".JP" but also other TLDs
 - DNS operators entreat DNSSEC deployment activity both in Japan and in Japanese
 - A collaboration group is needed especially at its introduction phase





Knowledge and Expertise about DNSSEC are not widespread!

Agenda



- Background
- Introduction of DNSSEC Japan
- Accomplishments from the activity
- Future plan



- The Charter of DNSSEC Japan (DNSSEC.jp)
 - Name of the Organization
 The official name of this organization is "DNSSEC Japan" and abbreviated as "DNSSEC.jp".
 - The Charter

"DNSSEC Japan (DNSSEC.jp)" is established as a forum for domain name registries, registrars, registrants and relevant parties such as DNS and network operators with the aim of introducing and deploying DNSSEC that enhances security of the DNS.

DNSSEC.jp makes it a principle to carry out activities based on the mutual cooperation by participants.



- Objectives and Activities of DNSSEC.jp
 - 1) Objectives

DNSSEC.jp intends to sort out and discuss issues in relation to deployment and operation of DNSSEC to enhance technical capability of participants and sharing of technical expertise. It also conducts outreach activities such as providing relevant tools and giving technical commentaries.

2) Activities

Activities of DNSSEC.jp are:

- To sort out and share issues regarding introduction and operation of DNSSEC;
- To conduct technical verifications and accumulate expertise for introduction and operation of DNSSEC;
- To develop BCP relating to introduction and operation of DNSSEC; and
- To deploy DNSSEC through propagating results of its activities.
- Established on 24 November 2009



- Membership (35 organizations as of January)
 - Registry/Registrar
 - Carrier/IXP
 - ISP
 - Hosting Provider
 - Contents Provider
 - Vendor/System Integrator
 - Internet-Related Organizations

Member List



Augment Inc.	NetAgent Co., Ltd.
Boot Communication Co., LTD.	NeuStar Inc.
Broadband Tower, Inc.	NRI Secure Technologies, Inc.
Digital-Effect Network Co., Ltd.	NTT Communications Corporation
DNS Operators Group, Japan	NTTPC Communications, Inc.
Future Spirits Co., Ltd.	Rakuten, Inc.
GMO Hosting & Security Inc.	Sakura Internet Inc.
Infoblox Inc.	SANYO Information Technology Solutions Inc.
Internet Multifeed Co.	Sarion Systems Research
Internet Initiative Japan Inc.	SOFTBANK BB Corp.
Internet Research Institute, Inc.	SOFTBANK TELECOM Corp.
Japan Computer Emergency Response Team Coordination Center	So-net Entertainment Corporation
Japan Internet Exchange Co., Ltd.	STNet Inc.
Japan Network Information Center	Telecom-ISAC Japan
Japan Registry Services Co., Ltd.	Thales Japan, Inc.
Livedoor Co., Ltd.	Tokyo Electron Device Limited
Mirai Communication Network Inc.	YOYO Planning
NEC BIGLOBE Ltd.	



Structure

- Officers
 - Chairman: Yoshiki Ishida
 - Co-Chairman: Tsuyoshi Toyono, Yoshiro Yoneya
- Plenary Meeting(bi-monthly)
 - Technology Verification WG(Tech-WG) chaired by Tsuyoshi Toyono
 - Public Relations WG(Pub-WG) chaired by Miki Takata
- Public Relations(in Japanese)
 - Web
 - http://dnssec.jp/
 - twitter
 - @dnssec_jp, #dnssec_jp







- Activities
 - Technology Verification and Research Activities
 - Summary on international trends
 - Survey on the interface between registrars and registries
 - Operational tools
 - Verification of network equipments
 - Registrar transfer / BCP method verification
 - Simulation scenarios
 - Proper method of introducing the trust anchor into recursive DNS servers



- Events
 - March September, 2010: Study group on DNSSEC protocols and its operational technology with hands-on
 - July 21, 2010: DNSSEC 2010 Summer Forum
 - November 15, 2010: DNSSEC Service Model Workshop
 - November 25, 2010: DNS DAY (within Internet Week 2010)
 - April, 2011: DNSSEC 2011 Spring Forum (coming)
- Public Relations
 - Presentations at some related conferences in Japan
 - Disclosure of all accomplishments on the Web
- Miscellaneous
 - Logo contest (July , 2010)
 - Novelties sponsored by JPRS

This is keyhole



- DNSSEC 2010 Summer Forum
 - Date: 21 July, 2010
 - Agenda
 - What is DNSSEC
 - Introduction of DNSSEC Japan
 - DNSSEC Japan's Working Group
 - The status of root zone signing
 - The status of ccTLD, gTLD zone signing
 - The schedule of ".JP" zone signing
 - DNSSEC Key Management
 - Clothing
 - Participants: 120
 - ISP, DNS Provider, Hosting, SIer, DNS operators at enterprise and academic organizations, etc.





- DNSSEC Service Model Workshop
 - Date: 15 November, 2010
 - Closed Meeting
 - Participants: 12
 - Carrier, ISP, Hosting Provider, Registrar, Registry
 - Discussion about DNSSEC Service Model
 - Service Styles
 - Authoritative DNS servers
 - Recursive DNS servers
 - Charge
 - Some Practices derived from the discussion were presented at "DNS Day" on 25 November, 2010

Agenda



- Background
- Introduction of DNSSEC Japan
- Accomplishments from the activity
- Future plan

Purpose of Tech-WG



- To investigate what kind of effect will occur on WG members' service and products, and to verify them in a lab environment.
- 2. To check the DNSSEC status of WG members' services and products, and to share and accumulate operational know-how.
- 3. To publish guidelines and BCPs from accumulated expertise.

Publication List from Tech-WG

- DNSSEC mechanisms and the present status
 - Brief summary of DNSSEC and the present state of it.
- Issues on adopting DNSSEC
 - Summarized issues which each player should consider in case of adopting DNSSEC.
- How to set up DNSSEC trust anchors for the resolver
 - Best current practice on configuring trust anchor to recursive DNS server (or resolver) in secure way.
- Report on the DS registration interface for the various registries
 - Tech-WG carried out in the summary of research on the interface for the registry key.
- Registrar Transfer Guideline
 - Guideline of Practical methods for Registrar transfer







Results from Scenario Simulation

- There are many point of changing specification
 - Key generation, Key management, zone signing, update DNS servers
 - Key registration systems must be changed according to registry systems
- User Interface for registrants is very important
 - DNSSEC signing, unsigning
 - Delete, re-regsitration
- Registrar must review all configurations
 - Load Balancers
 - Rate Limit against amplifier attack or DDoS attack
 - TCP port53 Filtering



- Adopting DNSSEC into the Service
 - There is no "Active" Motivation.
 - Cost: very expensive
 - Additional Income: very small (or none)
- "Passive" Motivations
 - Risk is very high when security incidents or accidents occur.
 - Business Chances may be lost without DNSSEC skills.
- Suggestions:
 - Adopting DNSSEC has little advantages but not adopting has many disadvantages
 - Service Providers should decide when and how they adopt DNSSEC in a short time

Registrars and DNS Service Providers

- Authoritative DNS servers side
 - TLD Registries adopt or will adopt DNSSEC
 - Registrars should consider whether they adopt or not
 - DNS Service Providers are same as above
- Recursive DNS servers side
 - Internet Service Providers should consider whether they adopt or not, and when and how if they adopt



Unofficial status among members

Registrar

Name	Service Style	Owner of keys	Fee	When?
А	DS Record Handling	Registrant	Free	TBD
В	DS Record Handling	Registrant	Toll	Mar, 2011

Authoritative DNS Provider

Name	Service Style	Owner of keys	Fee	When?
С	Optional Service	Provider	Toll	Mar, 2011
D	Optional Service	Provider	Free	TBD
E	Default Service	Provider	Free	TBD
F	Default for New Customers	Provider	Free	Mar, 2011
G	System Integration & Outsourcee	Individual Support	Toll	Jan, 2011
Η	OEM Service for Small ISPs	Provider	Toll	Mar, 2011



ISP(Recursive DNS Server Provider)

Name	Owner of keys	Fee	When?
I	Dual Types of Service/Opt-in	Free	Jan, 2011
J	Validation Enabled for certain services	Free	TBD
К	TBD	Free	TBD
L	Validation Enabled	Free	TBD

• SANYO Information Technology Solutions(SANNET) has enabled DNSSEC validation on 21 Jul 2010.



Agenda



- Background
- Introduction of DNSSEC Japan
- Accomplishments from Activities
- Future Plan

Future Plan of DNSSEC.jp



- Collections of failure knowledge on DNSSEC operation and sharing them among operators
- Measurement of DNSSEC deployment in Japan in cooperation with JPRS
- "DNSSEC enabled" logo for service providers
- Translation of our documents into English or other languages(Call for Volunteers)
- Transferring all knowledge and materials to DNS operators as regular basis after introduction phase is finished

