

2014.1-12



JP Domain Name Registry Report



Japan Registry Services Co., Ltd.

Introduction

As the Internet is being used in increasingly diverse areas of society, the need for domain names is growing and the area of domain name use is getting broader. With this background, the total number of registered JP domain names topped 1.38 million as of January 2015. In 2014, JPRS introduced Japanese Prefecture Labels into Prefecture Type JP Domain Names and provided an option for registrants to hide their names on Whois, in order to meet the rising demand for domain names.

In the global domain name industry, as the New gTLD Program led by ICANN*1 progresses, a number of new gTLDs have been launched. In addition, we have seen challenges related to Internet infrastructure such as domain name hijacking caused by unauthorized alteration of registration data in registry and registrar databases and vulnerability of DNS software.

As a company supporting the basis of the Internet society through JP domain names and DNS, JPRS is striving to make the Internet safe for everyone to use. To this end, JPRS promptly provides information and deals with risks and challenges related to domain names and DNS as they arise. JPRS also actively contributes to discussions of global issues and conveys relevant information to the community in Japan.

In addition to the above, JPRS is committed to its ongoing operations to improve JP domain name services, develop systems, and carry out promotional activities to facilitate the use of JP domain names and deliver greater value to users.

The management and administration of JP domain names require a high level of commitment to enhancing the public interest and encouraging sound competition. Recognizing this vital nature of its services and influence on society, JPRS annually publishes the “Registry Report” on its management and administration of .JP domain names.

JPRS will continue to ensure that JP domain names remain useful and contribute to the development of the Internet society.

Koki Higashida
President
Japan Registry Services Co., Ltd.

*1 ICANN: Internet Corporation for Assigned Names and Numbers
<http://www.icann.org/>

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01.1 Goal of JPRS as the JP Domain Name Registry

Our main objectives as the registry are: to continuously improve the value of JP domain names; to provide the registry services that contribute to society; and to gain stronger support from the local and global Internet community in an environment where JPRS competes and collaborates with other registries of Top Level Domains (TLDs)*1 and similar service providers.

JPRS defines the following as the core concepts for the registration and administration of JP domain names.

Reliability: establishing domain name space with the public trust

Stability: operating and administering the stable domain name system (DNS)

Usability: providing accessible domain name services which meet users' needs

Fee Performance: providing services at reasonable fees

With the mission of supporting the Internet infrastructure, JPRS considers it important to ensure reliability and stability while pursuing a good balance with usability and fee performance.

*1 TLD: Top Level Domain

01 · 2 Activities in 2014

In 2014, JPRS continued to contribute to the development of the Internet society and worked to enhance its registry services and the value of JP domain names in cooperation with the JP Registrars and other related organizations.

Publication of “Internet White Paper 2013-2014” (January)

“Internet White Paper” is a yearbook that summarizes the current state of the Internet from various perspectives including that of business, society and technology, and it has reported on the trend of the Internet in Japan since 1996. JPRS has been collaborating with Impress R&D^{*1}, IAjapan^{*2} and JPNIC^{*3} in the Internet White Paper Editorial Committee, in planning and steering of the White Paper since 2013. “Internet White Paper 2013-2014” edited by the Committee was published on January 31.

16th Japan Junior/Senior High School Web Contest (February)

JPRS supported the “16th Japan Junior/Senior High School Web Contest^{*4},” a Web contest was held by JAPIAS^{*5} for junior and senior high school students. JPRS provided 652 General-use JP domain names (both in Japanese and ASCII) free of charge for the works of 328 teams so that they could have original domain names.

JPRS also presented the “Best Domain Naming Award” to the team who had chosen the most effective domain name to increase the appeal of their work.

● <http://jprs.co.jp/press/2014/140224.html> (in Japanese)

Launch of “Internet White Paper ARCHIVES” (February)

JPRS is a member of the Internet White Paper Editorial Committee and participates in its planning and steering. The Committee launched “Internet White Paper ARCHIVES^{*6}” on February 21. This is a compendium of the Internet White Paper, which is published annually and spans from 1996 to the previous year’s edition. The archive is publicly available free of charge.

● <http://jprs.co.jp/topics/2014/140221.html> (in Japanese)

*1 Impress R&D

<http://www.impressrd.jp/> (in Japanese)

*2 IAjapan: Internet Association Japan

<https://www.iajapan.org/index-en.html>

*3 JPNIC: Japan Network Information Center

<https://www.nic.ad.jp/en/>

*4 Japan Junior/Senior High School Web Contest (formerly Think Quest JAPAN)

<http://webcon.japias.jp/> (in Japanese)

*5 JAPIAS: Japan Association for Promotion of Internet Application in School Education

<http://japias.jp/en/index.html>

*6 <http://IWParchives.jp/> (in Japanese)

Free Cartoon Booklet on the Internet System Sent to Junior and Senior High Schools and Technical Colleges across Japan (May)

“Info-Communications Promotion Month” is a nationwide initiative that has been conducted as part of Internet-related educational activities. In line with this, from May 15 to June 30, JPRS set up channels including a special website “<http://マンガで学ぶ.jp>”(learn from Manga) where junior and senior high schools and technical colleges could apply for the distribution of educational material produced by JPRS. JPRS distributed the material free of charge to those who applied. Recognizing the growing importance of Internet-related education and shortage of teaching materials in schools, JPRS has worked on this project since 2010, in parallel with the “Info-Communications Promotion Month” that starts on May 15 every year. JPRS has published and offered the booklet for five year in a row and received a number of applications from educational institutions across the nation. The number of copies distributed in these five years amounts to over 130,000. The material that JPRS distributed is a graphical comic-style booklet entitled “Ponta’s Great Adventure in the Network.” It contains a story with many illustrations to help readers learn how to reach particular websites and how a “Domain Name”, which is the Internet address, works.



Ponta's Great Adventure
in the Network

- <http://jprs.co.jp/press/2014/140515.html> (in Japanese)

Interop Tokyo 2014 (June)

To provide information on domain names and DNS, JPRS provided seminars to Interop Tokyo 2014 visitors and explained the basics of domain names, highlighted a technical topic related to DNS with the slide deck entitled “DNS Cache Poisoning Attacks — The overview and its countermeasures,” and outlined the latest developments of new gTLDs through presentations and exhibit panels in its exhibition booth at “Interop Tokyo 2014.”



JPRS booth

- <http://jprs.co.jp/topics/2014/140605.html> (in Japanese)

Report Published by Expert Team on Name Collision, including members from JPRS (June)

The introduction of new gTLDs has caused the issue of “Name Collision” which occurs when an attempt to resolve a name that is used in a private name space results in resolution of a DNS query to the Internet domain name system. This issue may affect a significant number of users worldwide, so a study on the impact of and measures against name collision issue was initiated in Japan as well. In January 2014, JPNIC set up the “Expert Team on Reviewing Risks and Developing Countermeasures on the Introduction of Large-scale New gTLDs”, and tasked it with considering the name collision issue and working out countermeasures. Shinta Sato and Takayasu Matsuura of JPRS participated in the team as members and worked on continuous and extensive measures to raise awareness in Japan.

In June 2014, the team published a report recommending a series of measures to be taken by concerned parties including managers of enterprise networks and ISP operators. Concurrently, JPRS posted the Japanese translation of “Guide to Name Collision Identification and Mitigation for IT Professionals,” a document on name collision issue published by ICANN.

- <http://jprs.co.jp/press/2014/140609.html> (in Japanese)

Whois Option to Hide Registrant Name Started (August)

JPRS started to provide an optional function for General-Use and Prefecture Type JP Domain Names, which allows registrants to hide their registrant name from the JPRS WHOIS record for their domain names. The principle of Whois is to publish registrant data (registrant name, organization name, etc.) in order to maintain stable operation of the Internet by autonomously solving technical issues and troubles related to trademarks and so on. However, as the Internet expands, awareness about personal information has risen, and the activities of domain name registrants have become limited or hindered due to publication of their registrant information on Whois. This trend rose the demands for the ability to hide registrant name. In view of this need, JPRS now allows registrants to opt-out from having their name shown in Whois.

- <http://jprs.jp/about/dom-rule/whois-concealment/> (in Japanese)

SECCON 2014 (September)

“SECCON 2014*7” is a series of events organized with the aim of recruiting and training information security personnel and of providing a place for hands-on experience with related technologies. JPRS supported as a special sponsor for SECCON 2014 Nagano Convention that focused on DNS. In the convention, JPRS assisted with preparing the exercises for the “DNS Security Challenge,” and provided a seminar about the basics of DNS, supported the running of the event, and set up its exhibition booth at the venue.



SECCON 2014

Internet Week 2014 (November)

JPRS supported Internet Week 2014 as a sponsor and Yoshiro Yoneya and Tomoya Sakaguchi of JPRS played a leading role in planning the DNS Tutorial and DNS DAY as members of Program Committee. JPRS staff members also gave presentations on DNS security and other latest topics and developments in the DNS-related programs, in order to share the latest information with the participants.



Lunch Seminar at Internet Week 2014

- <http://jprs.co.jp/topics/2014/141001.html> (in Japanese)

“History of Internet Resources Management in Japan — Focusing on Domain Name and IP Address —” Published (November)

JPNIC and JPRS jointly compiled and published a series of web contents entitled “History of Internet Resource Management in Japan — Focusing on Domain Name and IP Address —” that traced the history of Internet resource management in Japan.

JPNIC and JPRS are compiling a history of the Internet in Japan, which describes in plain language how the Internet has evolved in Japan in terms of resource management. The above-mentioned web contents were developed by the History Compilation Team which JPNIC and JPRS collaboratively worked as part of their history compilation activities.

- <http://jprs.co.jp/topics/2014/141117.html> (in Japanese)

*7 : <http://2014.seccon.jp/> (in Japanese)

Japanese Characters Introduced into Prefecture Labels of Prefecture Type JP Domain Names (November)

On November 3, 2014, JPRS made the names of the 47 prefectures in Japan (Prefecture Labels) specified in the “Prefecture Type JP Domain Name” space available in Japanese, in addition to ASCII (alphanumeric) characters.

Before this, Japanese characters could be used for a label on the left of a Prefecture Label only, and the Prefecture Labels themselves were represented solely with ASCII characters. With the introduction of Japanese characters into the Prefecture Labels, domain names such as “〇〇温泉.長野.jp” (for some spa in Nagano), “〇〇寺.京都.jp” (for some temple in Kyoto) and “〇〇うどん.香川.jp” (for some Udon noodle in Kagawa) became available, and thus registrants can now make effective use of such domain names.



Newspaper ad

As of August 2014, the percentage of Japanese domain name registration was higher in the Prefecture Type Domain Name than in the General-use JP Domain Name space, and there were requests from registrants who wanted to use Prefecture Type Domain Name with Japanese Prefecture Labels as well. Accordingly, JPRS decided to introduce Japanese Prefecture Labels, recognizing that some Prefecture Type JP domain names with a Japanese Prefecture Label would appear more attractive than those with an ASCII label and would also assist local revitalization.

With the introduction of Japanese characters into Prefecture Labels, JPRS promoted the service through web and newspaper advertisements across the country.

- <http://jprs.co.jp/en/press/2014/141104.html>

Events and Seminars for JP Registrars

May “JP Registrar Seminar – An Introduction to Domain Name Registration and Administration –”

JPRS provided basic information on domain names and outlined how to register and administer them to the newly accredited JP Registrars and those staff of JP Registrars who recently started handling JP domain names.

Jun. “Service Change Briefing”

JPRS explained to the JP Registrars about its service changes scheduled for implementation in 2014, including “Enforcement of Authentication for Domain Name Application Interface.”

Jul. “JPRS Technical Seminar”

The session “DNS-related Hot Topics” was held for engineers, including an overview of and countermeasures against cache poisoning attacks. The issue of name collision and measures to mitigate its risk were also outlined in the session. For newly-appointed technical staffers, JPRS shared essential knowledge of DNS administration such as the basic structure and operation of DNS.

Oct. “13th JP Partners’ Meetings”

JPRS described developments in the domain name industry, its service plans including future service changes as well as information useful for day-to-day operations. JPRS also explained the contents of the “DNS-related Hot Topics” introduced in the “JPRS Technical Seminar” held in July for non-technical participants.

Nov. “JP Registrar Seminar – An Introduction to Domain Name Registration and Administration –”

JPRS provided basic information on domain names and outlined how to register and administer them to the newly accredited JP Registrars and those staff of JP Registrars who recently started handling JP domain names.

01 · 3 International Relations

1. Participation in ICANN

ICANN is a private non-profit organization established in the United States in 1998 to coordinate resources underpinning the Internet, such as domain names, IP addresses and root servers.

ICANN holds three public meetings each year in different regions of the world to enable global stakeholders to participate in person and discuss policies and rules for resource management. In 2014, ICANN held its 49th meeting in Singapore, the 50th meeting in London, U.K. and the 51st meeting in Los Angeles, U.S.A.



ICANN 50

With the participation of numerous parties interested in ccTLD and gTLD, ICANN has always functioned as an important forum for information-sharing and discussing on issues on policies and governance concerning domain name management. In recent years, ICANN has also come to play a vital role in information-sharing and discussions on technical issues including DNS and DNSSEC.

Broad-ranging discussions were held in ICANN in 2014, covering various issues including those related to the introduction of new gTLDs, such as name collision issue and brand TLDs.

In addition, different working groups actively shared the latest information and developments at the ICANN meetings to encourage community discussions on IANA stewardship transition and enhancing ICANN accountability.

Since its foundation, JPRS has been actively participating in the organization of ICANN and various policy discussions, and supporting the coordination of Internet resource management led by the private sector, with ICANN playing the central role. In 2002, JPRS signed a “ccTLD Sponsorship Agreement” with ICANN, and has since been entrusted by ICANN to serve as the registry of Japan’s ccTLD “.jp”.

By participating in various organizations established within ICANN, as well as by giving presentations and information exchanges at various sessions JPRS participates in policy development and implementation-planning to cope with issues facing ICANN and registries. Also via ICANN, JPRS is sharing its experience in JP registry operations with the global community, thereby contributing to the development of the Internet as a whole.

The following reports JPRS’s activities in ICANN organizations:

(1) ccNSO

ccNSO*¹ is one of the Supporting Organizations set up in ICANN to assist its activities. The roles of ccNSO as the alliance of ccTLDs are to coordinate with the other Supporting Organizations within ICANN, to form a consensus in the ccTLD community on global issues concerning the entire ccTLD space and to make recommendations to the ICANN Board. JPRS has been a member of ccNSO since its inception in 2003, and Hirofumi Hotta of JPRS has served as a ccNSO Council member during the same time.

ccNSO held a forum for information-sharing at every ICANN meeting to update members on the status and efforts made in each country or territory with regard to Internet governance, the discussions on IANA stewardship transition as well as ICANN's accountability, and the latest developments in the United Nations concerning WSIS+10*². Hirofumi Hotta of JPRS as the Councilor actively worked on forming the ccNSO Council's position.

2014 saw a number of cyber attacks targeting registries and registrars, including unauthorized alteration of name server information contained in the domain name registration data that registries or registrars manage. In the ccNSO meeting held in Los Angeles in October, .il (Israel) explained the background and details of the attacks that took place in the country in July 2014. The members learned from the presentation how the ccTLD responded to the attacks and what it acquired from the experience.

CRI WG*³ studied the method and mechanism to register, provide and manage contact information which can be used to immediately get through to the relevant ccTLD operator staff without fail at the time of a DNS incident, and issued the WG's final report. Hitoshi Saito of JPRS participated in the group as a member. Based on the CRI WG final report, a new working group called SECIR WG*⁴ was formed. To date, SECIR WG has been discussing implementation of the final report, taking into account not only coordination among the ccTLDs but also future collaboration between ccTLDs and the regional ccTLD associations.

During another information exchange session among ccTLDs, JPRS reported that it had made the Japanese names of the 47 prefectures in Japan (Prefecture Labels) available as the second level label of the "Prefecture Type JP Domain Name" space, in addition to ASCII (English alphabet) characters on November 3, 2014.

The industry-wide impact of new gTLDs that are commencing operation one after another is attracting interest in ccNSO as well. Accordingly, ccNSO exchanged opinions as to how ccTLDs should respond to the current situation where hundreds of TLDs are emerging, and held panel discussions with gTLD registrars to discuss the topic.

*1 ccNSO : Country Code Names Supporting Organisation
<http://ccnso.icann.org/>

*2 WSIS+10 : <http://www.itu.int/wsis/review/>

*3 CRI WG : Contact Repository Implementation Working Group
<http://ccnso.icann.org/workinggroups/iriwg.htm>

*4 SECIR WG: Secure Email Communication for ccTLD Incident Response Working Group
<http://ccnso.icann.org/workinggroups/secir.htm>

(2) IDN Variant TLD Program

The “IDN Variant TLD Program” is a series of activities to develop Label Generation Rules (LGRs) for the root zone and aims to establish procedures to add non-ASCII script to the root zone.

To develop specific rules for the root zone, the following two panels are established:

1. Generation Panel (GP)

Each GP creates a proposed LGR for a given script to be added in the root zone. It is composed of key figures of each language community and experts in linguistics and domain names.

2. Integration Panel (IP)

IP is a panel of experts in character encoding or IDNs and is tasked with integrating rules developed by the Generation Panels into a consistent set of LGRs.

In 2014, the IP and several GPs were formed and began their specific tasks.

The community that uses Kanji script includes the Chinese (including Taiwan and Hong Kong, etc.), Korean and Japanese communities, so it is necessary to develop Label Generation Rules that are consistent across those language communities. Therefore, the Japanese community started working on its LGR in consideration of such necessity. The study is being conducted involving experts representing the Japanese language community, linguists and gTLD registries, with JPNIC and JPRS serving as the secretariat. Hirofumi Hotta of JPRS is leading the initiative as the chair, with Yoshiro Yoneya of JPRS participating as a member to tap into the expertise gained through designing, providing and operating domain name services.

They are performing the study in cooperation with the other ccTLD registries such as CNNIC of China, TWNIC of Taiwan and KISA of Korea and are planning to submit an LGR as the GPs. They are expected to complete the coordination by the integration by the IP in mid 2015.

● <http://jprs.co.jp/topics/2014/140509.html> (in Japanese)

(3) WHOIS RT IRD WG

The WHOIS Protocol Specification (RFC 3912) does not define specifications for exchanging data in character codes other than US-ASCII. Therefore, each TLD has to develop its own specification to internationalize its Whois (to enable it to handle character codes other than US-ASCII). The number of non-English-speaking users keeps increasing, so it is desired to further standardize the protocol to internationalize Whois.

With this background, ICANN considered that it was necessary to structure the registration data applicable to gTLDs and in 2013 established “WHOIS RT IRD WG^{*5},” a working group to clarify the requirements.

This working group is tasked with defining the requirements and data model for internationalized registration data. Members of the working group were publicly sought, and a number of experts from IETF, registry and registrar operators were gathered. Naoki Kambe of JPRS is also participating in the working group as a member representing the registry operator.

The working group published a progress report entitled “Interim Report Internationalized Registration Data Expert Working Group” in April 2014 and called for public input^{*6}. The report mainly proposed the requirements for internationalized registration data.

Following this, the working group started to develop a final report reflecting the input gained from the public comments regarding the interim report and complementing the data model for internationalized registration data. The working group plans to publish the final report in the beginning of 2015, whereupon its task will be completed.

(4) DNSSEC Workshop Program Committee

As part of its efforts to promote DNSSEC, ICANN holds the DNSSEC Workshop in every ICANN meeting. This DNSSEC Workshop functions as a forum for registries, registrars, Internet service providers and businesses to share their experience of deploying DNSSEC and to learn the latest technological trends related to DNSSEC.

Yoshiro Yoneya of JPRS serves on the DNSSEC Workshop Program Committee as a member from Asia and plays a part by planning the workshops and sharing the situation in Japan.

(5) SSAC

SSAC^{*7}, one of the Advisory Committees in ICANN, advises the ICANN community and the ICANN Board on issues related to Internet security and stability. SSAC consists mainly of technical experts, such as registries, registrars, root server operators, and Internet-related researchers.

Since 2007, Shinta Sato of JPRS has been participating in SSAC as a member. Using his experience of working in a ccTLD registry, Sato is committed to ensuring that the Internet operates stably at the global level.

^{*5} WHOIS RT IRD WG: WHOIS Review Team Internationalized Registration Data WG
<https://community.icann.org/display/whoisird/WHOIS+RT+IRD+WG+Home>

^{*6} Interim Report Internationalized Registration Data Expert Working Group
<https://www.icann.org/public-comments/ird-interim-2014-04-14-en>

^{*7} SSAC: Security and Stability Advisory Committee
<http://www.icann.org/en/groups/ssac>

2. Participation in IETF

IETF*1 was established in 1986 by IAB (Internet Architecture Board) to promote standardization of Internet technologies. There are a number of Working Groups in IETF that make Internet standards in various technology areas.

Discussion and other activities of IETF are handled via its mailing lists. IETF also holds meetings three times per year, and these meetings are attended by engineers gathering from around the world. In 2014, IETF 89 was held in London, U.K., IETF 90 in Toronto, Canada and IETF 91 in Honolulu, U.S.A.

JPRS is participating in the standardization activities in IETF by working on internationalization of the identifiers to be used in the protocols, suggesting solutions to the issues related to DNS operations and proposing standardization of the technologies employed by registries.



IETF90

The following reports JPRS's activities in IETF:

(1) Promotion of the Standardization of Internationalized Identifier Processing (precis WG)

Internationalized identifiers generally refer to identifiers containing at least one non-alphanumeric characters (i.e., internationalized) that uniquely identify domain names, email addresses, and website addresses on the Internet.

To use internationalized identifiers, preprocessing is necessary to unify or normalize character types and compatible characters so that character strings can be matched up correctly. IETF issued an RFC in 2003 to make “stringprep” as the standard method of preprocessing. Since stringprep refers to the older version of Unicode specifications, it needs to be revised.

Accordingly, in June 2010, IETF set up the “precis Working Group (WG)*2” to discuss revisions to stringprep. Yoshiro Yoneya of JPRS was appointed Co-Chair of the WG to lead its activities.

It was decided that precis protocol was to define a core framework similar to stringprep and define the details of specific protocols applicable to such framework, so that the protocols according to stringprep could migrate into precis while being based on the changes in IDNA2008*3.

In April 2014, the proposed precis framework that would form a core part of the precis protocol was reviewed by the entire IETF, and the principle was mostly finalized. Thereafter, the framework was modified to make it easy to incorporate the change in Unicode which precis refers to. Currently, IESG*4 is conducting its final technical review, and the standardization is expected to be completed by the end of 2015. Following the standardization of the precis framework, detailed definitions (profiles) that allow specific protocols to apply that framework will be standardized.

*1 IETF: Internet Engineering Task Force
<http://www.ietf.org/>

*2 precis WG: Preparation and Comparison of Internationalized Strings WG
<https://datatracker.ietf.org/wg/precis/>

*3 Status of IDN standardization
<http://jprs.co.jp/idn/index-e.html>

*4 IESG: The Internet Engineering Steering Group
<https://www.ietf.org/iesg/>

(2) weirds WG

weirds WG^{*5} is a working group set up to develop a new protocol to replace the legacy WHOIS protocol and to conduct interoperability tests through implementing the prototypes.

JPRS implemented a prototype while the weirds WG developed the protocol specifications. JPRS also conducted interoperability testing with the other implementers, gave feedback on the edit of the document and helped to finalize the specification.

The legacy WHOIS specification needed to be replaced, as the data format of responses has not been standardized and the specification does not take internationalization into account. Therefore, the development of a new protocol to replace the legacy WHOIS protocol has long been an issue.

To settle the issue, the weirds WG adopted web-based RDAP (Registration Data Access Protocol) as the protocol for queries on registration data and JSON (JavaScript Object Notation) as the protocol to display structured and internationalized registration data.

The weirds WG finished developing the following seven Internet drafts in September 2014 and requested a review by the IESG, following which all of the drafts were approved by the IESG in December. These documents will be published as RFC in early 2015, whereupon its task will be completed.

- Finding the Authoritative Registration Data (RDAP) Service
(draft-ietf-weirds-bootstrap)
- JSON Responses for the Registration Data Access Protocol (RDAP)
(draft-ietf-weirds-json-response)
- Registration Data Access Protocol Object Inventory Analysis
(draft-ietf-weirds-object-inventory)
- Registration Data Access Protocol Query Format
(draft-ietf-weirds-rdap-query)
- Security Services for the Registration Data Access Protocol
(draft-ietf-weirds-rdap-sec)
- HTTP usage in the Registration Data Access Protocol (RDAP)
(draft-ietf-weirds-using-http)

In the weirds WG, the participating domain registries and IP address registries implemented RDAP servers and test programs independently on trial based on the Internet draft, and checked interconnectivity through a series of interoperability testing sessions. The tests were intended to inform the WG members of the issues that had not been detected at the time of developing the above drafts, and help them reflect such issues into the documents.

The testing sessions were held in conjunction with the IETF meetings. JPRS experimentally implemented a proprietary RDAP server and participated in the testing sessions held at the 89th, 90th and 91st IETF meetings.

*5 weirds WG: Web Extensible Internet Registration Data Service WG
<https://datatracker.ietf.org/wg/weirds/>

The engineers who participated in those sessions discussed various issues such as the appropriate error codes that should be sent out in response and the means to convert a message in HTML template, embedded in web servers or application servers, into JSON format.

(3) dnsop WG

The name of the dnsop WG*⁶ derives from DNS Operations, and aims to compile a guideline for DNS operation in general, including administration of DNS servers and registration data.

JPRS has actively participated in the dnsop WG with its expertise as the JP DNS operator, by proposing RFC 4074, presenting the issues caused by misconfigurations of DNS servers and playing a part in the discussions on the change of DNS operators at the time of DNSSEC operation.

In 2014, JPRS proposed measures against cache poisoning attacks and pointed out ambiguities in the DNS protocol and related terms.

*6 dnsop WG : Domain Name System Operations WG
<https://datatracker.ietf.org/wg/dnsop/>

3. Participation in Registry Associations

(1) APTLD

JPRS has been a member of APTLD*¹ since 2002. As the registry for JP domain names, JPRS proposes improvements of APTLD activities, provides information and exchanges views at presentations and discussions so that the ccTLD community in the Asia-Pacific region can gain experience and expertise and raise the level of service standards. Besides this, Hirofumi Hotta of JPRS serves as the APTLD Board Director.

At the APTLD meetings, the members exchanged information and views as to the activities related to Internet governance and services provided and considered by each ccTLD in an effort to improve the security of domain names. Hotta gave a presentation in February and shared the status of studies within JPRS on enhanced authentication with digital certificates that was being planned to strengthen the security of the JP domain name application interface with JP Registrars. As the ccNSO Council member, he also summarized the discussions at the ccNSO members meetings that had been held during the ICANN meetings.

In the lead-up to the time when IDN ccTLD and new gTLD registries multiply, APTLD set up the “mission & objectives WG,” a working group to consider the mission and objectives of APTLD. Hotta served as the chair of the working group. The group reported the results of the members’ survey on the expected activities of APTLD and discussed it with the members in February. The survey revealed that the members expected information sharing sessions and training sessions for improving the knowledge and technology base of the entire membership. It was also found that the members wanted further sharing of the experiences and activities of each ccTLD as well as the results and analyses of member ccTLD surveys.

(2) CENTR

CENTR*² is an association consisting of ccTLD registries mainly in Europe. As an Associate member, JPRS shares information and exchanges opinions with other CENTR members. In addition, CENTR conducts surveys and information-sharing among members, so JPRS is actively taking part in these activities to consider its future services in the light of what it learns in CENTR.

In the meeting held in June, Hirofumi Hotta of JPRS gave a presentation and shared, from the registry operator’s viewpoint, the trend in regulations in Japan affecting the registry business.

*1 APTLD : Asia Pacific Top Level Domain Association
<http://www.aptd.org/>

*2 CENTR : Council of European National Top Level Domain Registries
<https://www.centri.org/>

4. Other International Activities

(1) Participation in the Internet Governance Forum (IGF)

IGF*¹ is an international conference that has been held annually since 2006. In 2014, IGF was held in Istanbul in Turkey from 1 to 5 September, 2014, with the Pre-IGF meeting held on the opening day. JPRS participated in the conference, and Hirofumi Hotta of JPRS sat on a panel on contributing to improved Internet governance literacy and multilingual environments on the Internet. At the panel he explained the situation in Japan.

(2) Participation in Asia Pacific Regional Internet Governance Forum (APrIGF)

APrIGF*² has been held annually since 2010, with the participation of mainly the members of the community in the Asia Pacific. It has been a forum for discussing Internet governance issues and other issues specific to the region.

APrIGF 2014 was held from 3 to 6 August in Delhi, India, in which Hirofumi Hotta and Yuri Takamatsu of JPRS participated. In this particular forum the participants shared the status of Internet governance discussions in each country, territory, and whole Asia. ICANN also participated in the APrIGF and outlined the development of the transition of IANA stewardship which was an issue at the time following the so-called Snowden revelation in June 2013.

(3) Efforts Related to Internet Governance

a) JPRS submitted its comments in response to the questionnaire of CSTD

On September 15, 2014, JPRS submitted its comments in response to the questionnaire of the Commission on Science and Technology for Development (CSTD) within the United Nations.

The purpose of this questionnaire provided by CSTD is to gather comments relevant to the implementation of "World Summit on the Information Society (WSIS)" outcomes. Submitted comments will be used in the review of WSIS outcomes including the "Tunis Agenda" which was adopted at WSIS in November 2005. CSTD widely sought inputs to this questionnaire.

Since its establishment JPRS has supported the coordination of issues relevant to the Internet through an open and bottom-up initiative led by the private sector, with the participation of diverse players. From this standpoint, JPRS responded to the CSTD questionnaire.

● <http://jprs.co.jp/en/topics/2014/140916.html>

b) Participation in NETmundial

The Snowden revelation in June 2013 saw growing public concern about the fact that discussions on Internet resources and the fundamental authority such as delegation were uniquely controlled by the United States. On the back of this, the Brazilian President, Dilma Rousseff, announced her intention to provide a forum (NETmundial) in which all stakeholders could participate and consider a broad range of issues related to Internet governance.

*1 IGF : Internet Governance Forum
<http://www.intgovforum.org/>

*2 APrIGF : Asia Pacific Regional Internet Governance Forum
<http://www.rigf.asia/>

Following that, NETmundial was held under the auspices of the government of Brazil in Sao Paulo for two days from April 23, 2014. The principles and roadmap of Internet governance were discussed during the meetings, involving broad participation from governments, civil society, academia, the private sector and the technical world.

JPRS also participated in the forum and made statements calling for more concrete rationales and definitions to be incorporated in the outcome documents that were under consideration at the time.

(4) Participation in the DotAsia Organisation

The DotAsia Organisation^{*3} is the sponsoring organization and registry for the “.asia” top level domain. It is a not-for-profit organization incorporated in Hong Kong and contributes its proceeds of the .asia registration services toward promoting the Internet in the Asia-Pacific region by carrying out various community projects.

The DotAsia Organisation’s Internet advancement initiatives include the APRIIGF Secretariat and the “NetMission Ambassadors Program,” a capacity building effort for young people who are expected to play a role in the evolution of the Internet.

JPRS has participated in the DotAsia Organisation as a Sponsor Member since its foundation, and Atsushi Endo of JPRS plays a role in its organizational operation as one of the Board Directors.

(5) APWG

APWG^{*4} is a non-profit organization established in 2003 for the purpose of sharing anti-phishing measures and other related information. It consists of more than 2,000 organizational and business members that include financial institutions, Internet service providers, law enforcement authorities and governments.

Hirofumi Hotta of JPRS participated in Counter eCrime Operations Summit VIII held by the APWG in Hong Kong from April 8 to 10, 2014. In one of the panels, he introduced the security measures taken by JPRS and discussed the issue with the other participants.

(6) Participation in Root DNS Server Operator Organizations’ Meetings

IETF holds meetings three times a year, and representatives of root DNS server operator organizations meet on the first day of each meeting. JPRS has been participating in these meetings as one of the organizations in charge of M-Root DNS server operations. At these meetings, attendees share information principally on the stability of server operations and topics related to the latest technology. In addition, tabletop exercises are held as preparation for a large-scale failure.

As one of the operators of the M-Root DNS server, JPRS has also been participating in RSSAC, one of the Advisory Committees within ICANN that advises the ICANN Board on matters relating to the operation of the Root Server System. Hirofumi Hotta of JPRS represents the M-Root DNS server and plays an active role in the committee as the standing proxy of Dr. Jun Murai with the WIDE Project. The discussions continued from 2013 saw the RSSAC explore methods to collect traffic information across all the root DNS servers. The organizational structure of the RSSAC was also reconsidered. These issues were considered with a view to maintaining stable operation of the root servers without interruption after the introduction of new gTLDs.

*3 DotAsia Organisation

<http://www.dot.asia/>

*4 APWG: Anti-Phishing Working Group

<http://www.antiphishing.org/about-APWG/>

(7) Participation in DNS-OARC

DNS-OARC^{*5} is an international organization established in 2004 for the purpose of improving the stability and quality of DNS through various activities related to operation, analysis and study of DNS, the system widely used on the Internet. DNS-OARC conducts the annual DITL^{*6}, which involves collecting and evaluating server packets of DNS including the root servers once a year for 50 hours.

DNS-OARC has held workshops twice a year. In 2014, JPRS pointed out the fact that many full-resolvers were sending massive amounts of unnecessary queries under normal circumstances to the root DNS servers. It also reported on its attempt to monitor the root DNS servers to measure the share of TLD utilization in each country.

(8) Relationship with other ccTLDs

a) TW Registrar Meeting

Hirofumi Hotta of JPRS was invited to the TW Registrar Meeting hosted by TWNIC (.tw, Taiwan) on August 15 as a lecturer. At the presentation sessions, the services and activities of each ccTLD were briefed and information and opinions were exchanged among the participants. He also reported on the introduction of internationalized domain names into the second level domain of Prefecture Type JP Domain Names and on the activities of JPRS.

b) Visit from VNNIC

VNNIC (.vn, Vietnamese ccTLD Registry) visited JPRS on November 27 and exchanged information on the organizational structure and statistics of domain names with JPRS. VNNIC is planning to deploy DNSSEC in the next few years, and agreed with JPRS to continue to share knowledge and information.

(9) Activities in Academic Societies

JPRS is conducting ongoing research on DNS. In 2014, Kazunori Fujiwara of JPRS presented his findings to the academic society as follows.

- Invited lecture at the 2014 Second Technical Committee on Internet Architecture
 “Has the ‘Root’ Been Eliminated? — Revisiting DNS Cache Poisoning and Countermeasures —”

*5 DNS-OARC: The DNS Operations, Analysis, and Research Center
<https://www.dns-oarc.net/>

*6 DITL: Day In The Life of the Internet
<https://www.dns-oarc.net/oarc/data/ditl>

01 · 4 Activities in Japan

(1) Participation in JANOG

JANOG*¹ is the organization established to promote the smooth operation of networks through discussions and information-sharing among network operators to contribute to Internet users and engineers. The members discuss various issues on the mailing list and gather at JANOG Meetings held twice a year. JANOG also convenes its Interim Meeting as necessary between the regular JANOG meetings.



JANOG34 Meeting

The JANOG Meetings were held in January and July in 2014, and the Interim meeting was held in April. JPRS supported these JANOG Meetings as one of the platinum sponsors. Also, the engineers of JPRS participated in the discussion on the mailing list as well as in the meetings and gave presentations in the sessions.

In the JANOG34 Meeting held in July, Yasuhiro Morishita of JPRS gave a presentation entitled “How to Address Security Issues” and outlined cache poisoning attacks. He also described JPRS’s efforts to respond to the attacks.

(2) Participation in DNSOPS.JP

DNS Operators Group, Japan (DNSOPS.JP*²) was established in 2006 with the intention of contributing to the stable operation of the Internet through the administration of DNS. Yasuhiro Morishita of JPRS participated in the establishment as one of the founding members. DNSOPS.JP serves as a forum for DNS operators can exchange and share information and discuss related issues. DNSOPS.JP holds a BoF (Birds of a Feather) forum for technical presentations and discussions twice a year. Also, in 2012, it started a new initiative to hold an annual “DNS Summer Days,” a two-day event consisting of tutorials and workshops relating to DNS.

In the tutorial within “DNS Summer Days 2014” held for two days from June 26, Takafumi Mizuno of JPRS made a tutorial entitled “An Introduction to DNS Operations for Beginners” and talked about possible troubles in DNS operations and the keys to effective troubleshooting. Kazunori Fujiwara of JPRS also presented “DNS-OARC/RIPE68 report” and “Expected Time to Implement and Inject Attacks Written in wikipedia DNS_spoofing and Optimization of Attack Tools.”

*1 JANOG : JAPAN Network Operators' Group
<http://www.janog.gr.jp/en/>

*2 DNSOPS.JP: DNS Operators Group, Japan
<http://dnsops.jp/> (in Japanese)

(3) Participation in ICANN Readout Sessions

Since 2001, JPRS has been reporting the latest topics including ccTLD trends to the Japanese Internet community at ICANN Readout Sessions held jointly by JPNIC and IAjapan. The sessions were held in January, May and August 2014, where JPRS reported the latest developments and issues of the following organizations and discussed the key agenda matters of ICANN with the other participants.

- ccNSO (Country-Code Names Supporting Organization)
- RySG (Registries Stakeholder Group)
- NTAG (New TLD Applicant Group)
- RSSAC (DNS Root Server System Advisory Committee)

(4) Participation in IETF Update Meeting

ISOC-JP^{*3} was established in August 1994 and made various efforts to promote the Internet in Japan as the Japan Chapter of ISOC^{*4}. There was a time when ISOC-JP was temporarily inactive. However, ISOC-JP resumed its activity thanks to volunteers who realized its importance, and in 2012 it was approved as the Japan Chapter again. In 2014, Takaharu Ui of JPRS contributed to the activities of ISOC-JP as a board member.

ISOC-JP and JPNIC jointly organized three IETF Update Meetings in 2014, and Kazunori Fujiwara of JPRS gave a presentation entitled “Topics Related to DNS” and reported on the development of discussions on DNS including the status of related working groups.

In addition, he shared the issues on DNS in recent years and the latest technical update in the lecture entitled “DNS Evening — Security and Technology Trend” at the 1st ISOC-JP Study Meeting.

*3 ISOC-JP: The Internet Society Japan Chapter
<http://www.isoc.jp/> (in Japanese)

*4 ISOC : Internet Society
<http://www.internetsociety.org/>

(5) Participation in Expert Team on Name Collision

As the New gTLD Program advances, a number of gTLDs have been delegated in the root zone consecutively since 2013. With this, new gTLDs that had not existed on the Internet in the past became available, and a security issue called “Name Collision” has emerged.

With this background, JPNIC established “Expert Team on Reviewing Risks and Developing Countermeasures on the Introduction of Large-scale New gTLDs*⁵.” JPRS sent Shinta Sato and Takayasu Matsuura to the team to participate in the study of the name collision issue and the development of measures against the issue. JPRS also contributed to the outreach activities of the team. The report of the team was published by JPNIC in June 2014.

In addition, JPRS translated a guide for experts which had originally been published by ICANN and publicly posted the translation for system administrators in Japan*⁶.

(6) Engagement in Domain Name Policy Committee of Information and Communications Council, Ministry of Internal Affairs and Communications

At the General Meeting of the Information and Communications Council held on October 1, 2013, the Minister of Internal Affairs and Communications asked the Council about the whole concept of reliability and transparency required in the management and administration of the ccTLD and new gTLDs in Japan, and asked how they could be ensured. In response, the Information and Communications Policy Committee under the Council established the Domain Name Policy Committee. Subsequent discussions at this Committee resulted in the Information and Communications Council’s advice entitled “Desirable Information and Communications Policy Regarding Domain Names” that was issued on December 18, 2014.

The Domain Name Policy Committee set up a working group with a remit to prepare a draft of the abovementioned report. The working group held four meetings from April 25 to August 25 in 2014. As the party directly associated with the aforementioned inquiry, JPRS provided information and conducted exchanges in the working group as an observer.

In addition, JPRS submitted its comments in response to “Request for Comments on the Draft Report of the Domain Name Policy Committee” published by the Information and Communications Council on October 7, 2014.

- <http://jprs.co.jp/topics/2014/141107.html> (in Japanese)

*5 Expert Team on Reviewing Risks and Developing Countermeasures on the Introduction of Large-scale New gTLDs
<https://www.nic.ad.jp/ja/topics/2014/20140121-01.html> (in Japanese)

*6 Japanese translation of “Guide to Name Collision Identification and Mitigation for IT Professionals”
<http://jprs.jp/tech/material/name-collision-mitigation-05dec13-ja-1.0.pdf> (in Japanese)

(7) Engagement in U.S.-Japan Internet Economy Industry Forum Joint Statement

The policymakers of Japan and the United States have held the “U.S.-Japan Policy Cooperation Dialogue on the Internet Economy (IED: Internet Economy Dialogue)” as the Director General-level meeting, and exchanged opinions on the issues surrounding the Internet since 2010.

In line with this, the Japan Business Federation (Keidanren) and the American Chamber of Commerce in Japan (ACCJ) have issued private-sector joint statements as recommendations to the two governments*7. Work related to the statement is conducted by the U.S.-Japan Internet Economy Industry Forum of the Planning Subcommittee within the Committee on Information and Telecommunication Policy at Keidanren. JPRS has been participating in the forum and the subcommittee.

At the US-Japan IED meeting held in Washington D.C. in the United States for two days from September 16, 2014, a private-sector joint statement discussing the following four points was produced. JPRS drafted the part about IANA stewardship transition.

1. ITU Plenipotentiary Meeting
2. IANA stewardship transition
3. Cybersecurity
4. Protection of personal information

(8) Participation in Internet Governance Conference Japan

Internet Governance Conference Japan (IGCJ*8) was formed in June 2014 with the following two objectives. It conducted information-sharing and discussions at its meetings held in August, October and November.

1. To construct a platform in Japan for well-informed considerations of Internet governance issues
2. As appropriate, to make recommendations on Internet governance issues for in-country stakeholders and the global arena

JPRS has participated in the IGCJ since its first meeting and has actively discussed the ideal approach of the conference. In particular, it is taking part in considering how the IGCJ should cater to participants with different backgrounds and how it should clarify its mission and long-term goals.

*7 <http://www.keidanren.or.jp/en/policy/2014/079.html>

*8 IGCJ: Internet Governance Conference Japan
<http://igcj.jp/> (in Japanese)

01·5 Overview of this Term's Activities and Challenges for the Future

JPRS has constantly worked to strike a proper balance among reliability, stability, usability, and fee performance, which constitute the basis of JP domain name registry services, while also improving each of the four values.

To respond to expanding needs and enhance the usability of the JP Domain Name, JPRS introduced Japanese characters into the Prefecture Labels of the "Prefecture Type JP Domain Name" in November 2014. The Prefecture Type JP Domain Name was created in November 2012 with the Prefecture Labels in alphabet only. However, there were requests from parties including registrants for Prefecture Labels in Japanese. JPRS therefore introduced Japanese characters into the labels to meet such needs.

In addition, JPRS reviewed the balance between "disclosure of registration information" and "protection of personal information" in response to rising concern over personal information and demand for its protection. As a result, JPRS started to provide an optional function that allows registrants to hide their registrant name from Whois record for their domain name.

Utilizing its expertise as the JP domain name registry, JPRS worked to disseminate information and promote understanding of domain names and DNS at various events and conferences at home and abroad.

2014 saw, among other things, a number of attacks targeting the basic structure of DNS and incidents threatening the stable operation of DNS. These troubles involved either domain name hijackings that abusively changed the registration information maintained by registries or registrars, a serious vulnerability of DNS software that needed an urgent response, or name collision issue associated with the introduction of new gTLDs. In response, JPRS collaborated with other related organizations to remind the community of the issues and propose countermeasures for ensuring stable DNS operations.

Recognizing the growing importance of Internet-related education in schools, JPRS has distributed a free booklet on how the Internet works to educational institutions across Japan for five years in a row as part of its Internet-related educational support activities. As a result, the number of copies distributed in these five years amounted to over 130,000. JPRS also provided free JP domain names to junior and senior high school students that participated in a Web contest.

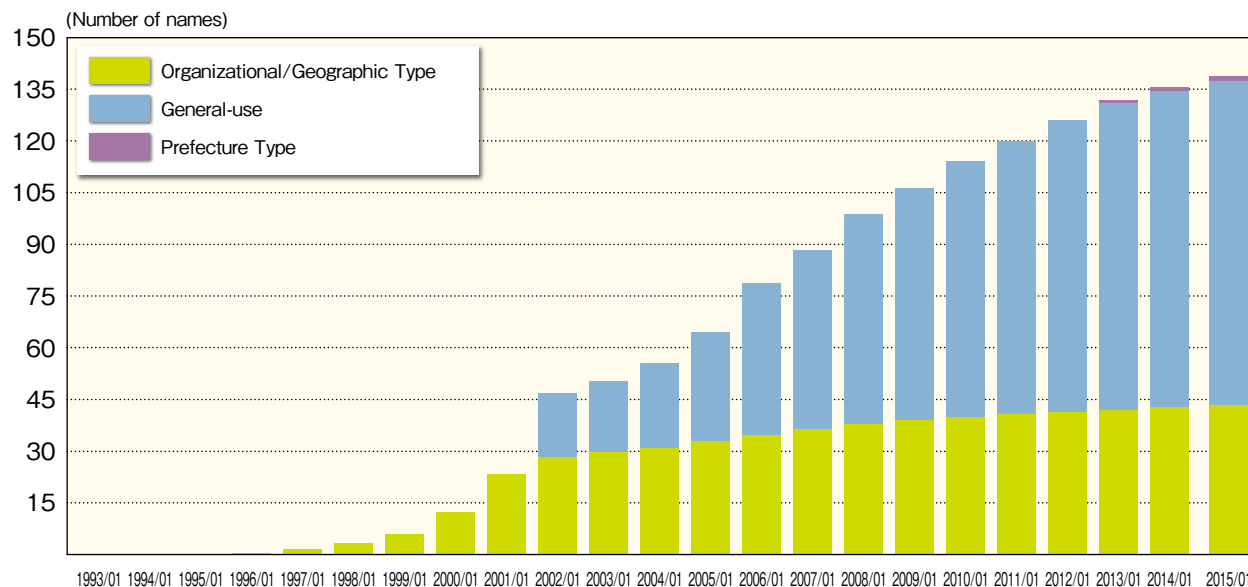
The Great East Japan Earthquake that occurred in 2011 has added further weight to need for the reliability and stability of the Internet infrastructure. To ensure continuity of service in case of disaster and strengthen the operational infrastructure, JPRS worked on optimizing the functional layout between the base in Tokyo and the disaster recovery site in Kansai area which was established for fully duplicating the operation base and registry system.

For the future, JPRS plans to further reinforce and implement the disaster service structure. It will enhance the security and reliability of its services through such measures as a new function to forestall unintended alteration of domain name registration information. In addition, JPRS will continue to disseminate information on DNS technology through advisories on vulnerability and reminders to ensure the stable operation of DNS.

As the registry of JP domain names, JPRS will continue its efforts to provide better and stable services.

02.1 Change in the Cumulative Number of Registered JP Domain Names

As of January 1, 2015, the cumulative number of registered JP domain names reached 1,387,501, an increase of 31,399 in one year.



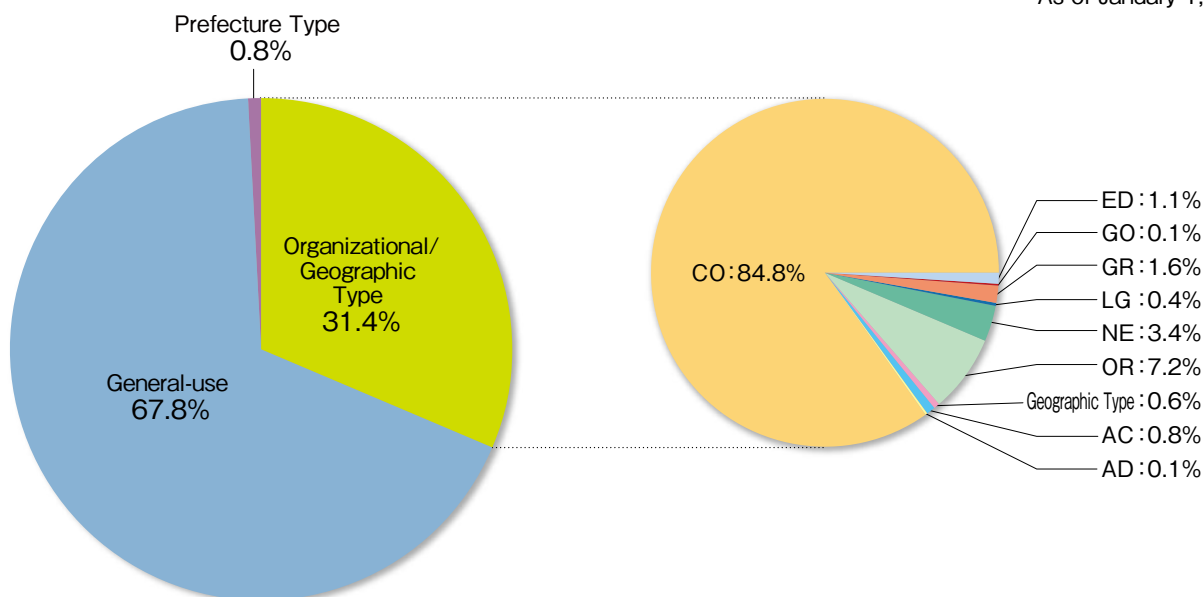
(Number of names)

Month/Year	Organizational/ Geographic Type	General-use (Japanese domain name)	Prefecture Type (Japanese domain name)	Total
1993/01	953	—	—	953
1994/01	1,341	—	—	1,341
1995/01	2,206	—	—	2,206
1996/01	4,781	—	—	4,781
1997/01	15,477	—	—	15,477
1998/01	33,739	—	—	33,739
1999/01	58,549	—	—	58,549
2000/01	124,573	—	—	124,573
2001/01	234,294	—	—	234,294
2002/01	283,340	183,499 (61,507)	—	466,839
2003/01	297,413	205,493 (51,544)	—	502,906
2004/01	309,193	245,100 (45,402)	—	554,293
2005/01	327,742	317,455 (63,324)	—	645,197
2006/01	346,340	439,784 (116,602)	—	786,124
2007/01	363,768	518,557 (124,153)	—	882,325
2008/01	378,903	609,983 (141,858)	—	988,886
2009/01	389,598	674,133 (134,921)	—	1,063,731
2010/01	399,339	740,820 (133,754)	—	1,140,159
2011/01	406,856	791,249 (123,711)	—	1,198,105
2012/01	413,332	845,054 (119,337)	—	1,258,386
2013/01	421,606	888,657 (122,394)	8,452 (1,915)	1,318,715
2014/01	428,467	915,854 (126,182)	11,781 (2,948)	1,356,102
2015/01	435,390	940,427 (120,801)	11,684 (3,117)	1,387,501

*Please refer to "Domain Name Statistics" (<http://jprs.co.jp/en/stat/>) for the latest information.

02.2 Breakdown of the Cumulative Number of Registered JP Domain Names

*As of January 1, 2015



(Number of names)

JP Domain Name Types		1 Jan 2015 Number of Registrations	1 Jan 2014 Number of Registrations	Difference
Organizational/ Geographic Type	AC: Higher education institution	3,525	3,536	-11
	AD: JPNIC Member	259	261	-2
	CO: Company	369,071	362,364	+6,707
	ED: Primary school, junior and senior high school	4,976	4,832	+144
	GO: Japanese government	600	621	-21
	GR: Group	6,807	7,072	-265
	LG: Japanese local authority	1,841	1,840	+1
	NE: Network service	14,710	15,345	-635
	OR: Corporation other than company	31,179	30,116	+1,063
	Geographic Type	2,422	2,480	-58
General-use (Japanese domain name)		940,427 (120,801)	915,854 (126,182)	+24,573 (-5,381)
Prefecture Type (Japanese domain name)		11,684 (3,117)	11,781 (2,948)	-97 (+169)
Total JP Domain Name Registration		1,387,501	1,356,102	+31,399

*Please refer to "Domain Name Statistics" (<http://jprs.co.jp/en/stat/>) for the latest information.

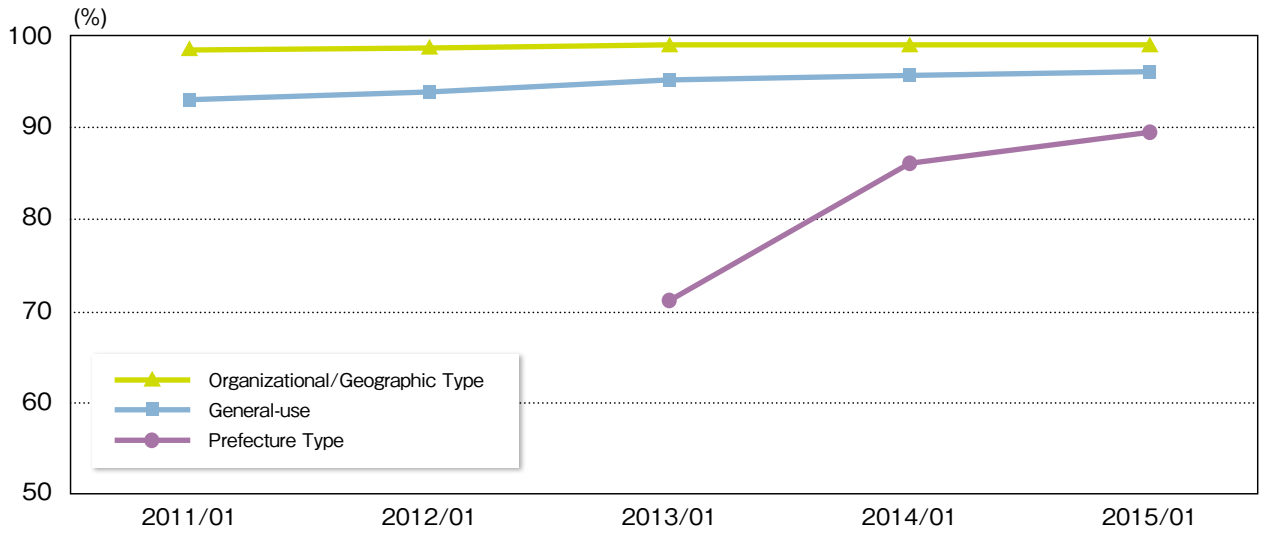
02-3 Number of JP Domain Name Registrations by Prefecture

*As of January 1, 2015

Prefecture	Organizational/ Geographic Type	General-use	Prefecture Type
Hokkaido	2.8%	2.0%	1.9%
Aomori	0.5%	0.3%	0.4%
Iwate	0.4%	0.3%	0.3%
Miyagi	1.3%	0.8%	0.6%
Akita	0.4%	0.2%	0.3%
Yamagata	0.6%	0.3%	0.3%
Fukushima	0.8%	0.5%	0.4%
Ibaraki	1.4%	1.0%	0.5%
Tochigi	1.0%	0.5%	0.7%
Gunma	1.1%	0.7%	1.3%
Saitama	4.2%	2.8%	2.9%
Chiba	3.2%	2.4%	2.9%
Tokyo	32.6%	43.3%	42.2%
Kanagawa	6.7%	5.2%	6.2%
Niigata	1.2%	0.7%	0.7%
Toyama	0.7%	0.4%	0.5%
Ishikawa	0.7%	0.5%	0.3%
Fukui	0.5%	0.4%	0.2%
Yamanashi	0.5%	0.4%	0.4%
Nagano	1.4%	0.9%	0.8%
Gifu	1.2%	0.7%	0.7%
Shizuoka	2.2%	1.5%	1.2%
Aichi	5.5%	3.6%	2.9%
Mie	0.8%	0.5%	0.7%
Shiga	0.6%	0.5%	0.8%
Kyoto	2.1%	3.3%	6.1%
Osaka	9.5%	13.5%	8.2%
Hyogo	3.1%	2.4%	1.7%
Nara	0.6%	0.6%	1.4%
Wakayama	0.4%	0.3%	0.3%
Tottori	0.2%	0.2%	0.2%
Shimane	0.3%	0.2%	0.1%
Okayama	1.1%	0.9%	0.4%
Hiroshima	1.6%	1.0%	1.7%
Yamaguchi	0.5%	0.4%	0.3%
Tokushima	0.3%	0.3%	0.1%
Kagawa	0.5%	0.4%	0.4%
Ehime	0.6%	0.5%	0.5%
Kochi	0.3%	0.2%	0.2%
Fukuoka	3.1%	2.6%	4.2%
Saga	0.3%	0.2%	0.2%
Nagasaki	0.5%	0.4%	0.3%
Kumamoto	0.7%	0.6%	0.6%
Oita	0.4%	0.3%	0.5%
Miyazaki	0.4%	0.5%	0.4%
Kagoshima	0.5%	0.4%	0.5%
Okinawa	0.6%	0.5%	1.6%

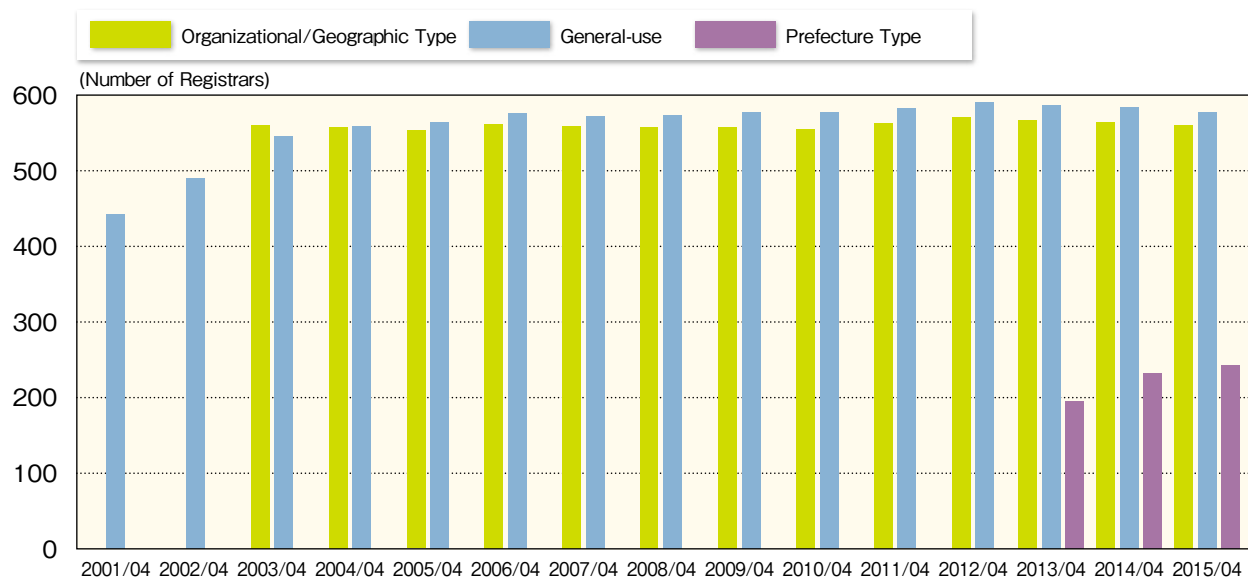
02.4 Transition of DNS Configuration Rate

*As of January 1, 2015



Year/Month	Organizational/Geographic Type	General-use	Prefecture Type
2011/01	98.7%	93.1%	—
2012/01	98.9%	93.9%	—
2013/01	99.0%	95.3%	71.0%
2014/01	99.0%	95.6%	86.9%
2015/01	99.0%	96.0%	89.9%

02.5 Number of Accredited JP Registrars



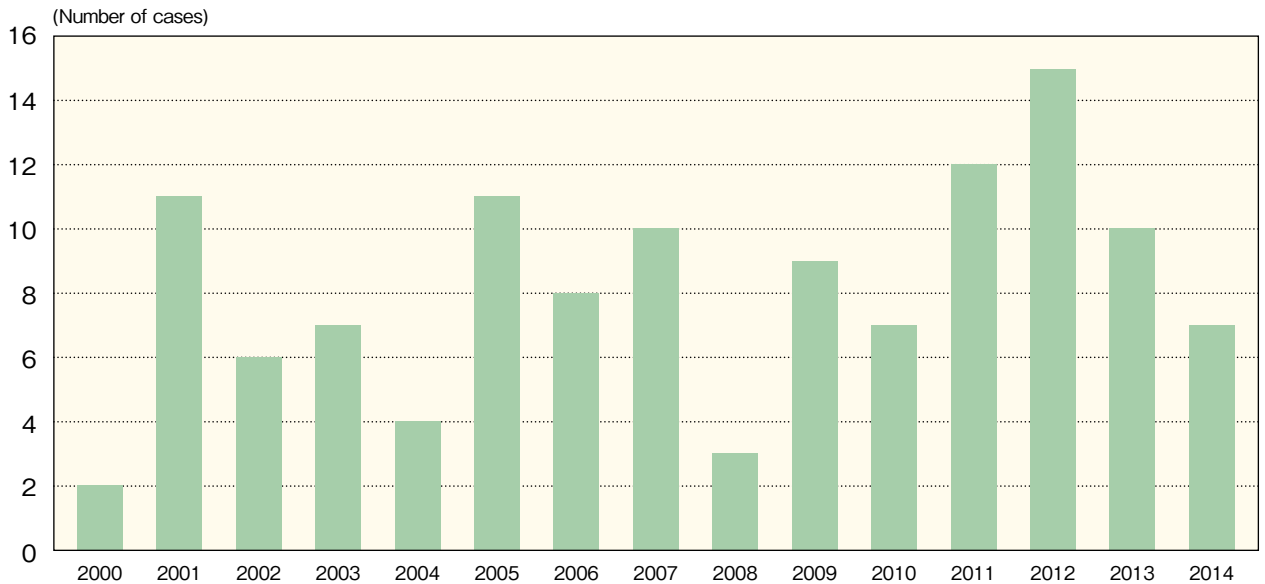
(Number of Registrars)

Year/Month	Organizational/ Geographic Type	General-use	Prefecture Type	Total
2001/04	—	443	—	443
2002/01	—	490	—	490
2003/01	560	546	—	1,106
2004/01	557	559	—	1,116
2005/01	553	564	—	1,117
2006/01	562	576	—	1,138
2007/01	559	572	—	1,131
2008/01	557	573	—	1,130
2009/01	558	577	—	1,135
2010/01	555	577	—	1,132
2011/01	563	582	—	1,145
2012/01	571	590	—	1,161
2013/01	566	586	197	1,349
2014/01	564	582	227	1,373
2015/01	560	577	241	1,378

*The number of JP Registrars for the Organizational/Geographic Type JP domain names is the figure after April 2002 when management and administration was transferred from JPNIC to JPRS.

02.6

Number of Complaints Based on JP Domain Name Dispute Resolution Policy (JP-DRP)



(Number of cases)

Year	Number
2000	2
2001	11
2002	6
2003	7
2004	4
2005	11
2006	8
2007	10
2008	3
2009	9
2010	7
2011	12
2012	15
2013	10
2014	7

*For details of domain name disputes, please refer to the "Domain Name Dispute Resolution Policy (DRP)" posted by Japan Network Information Center (<https://www.nic.ad.jp/en/drp/>)

03·1 History

- 2000 Dec. JPRS was established.
- 2001 Feb. General-use JP Domain Priority Registration Application started.
 Apr. General-use JP Domain Concurrent Registration Application started.
 May General-use JP Domain First-Come First-Served Registration Application started.
- 2002 Feb. ccTLD Sponsorship Agreement was concluded with ICANN.
 Apr. Management and administration of .JP TLD was transferred from JPNIC to JPRS.
 Oct. LG.JP was established.
 JPRS started distributing a plug-in for Microsoft Internet Explorer®, “i-Nav™.”
- 2003 Jan. The cumulative number of JP domain names exceeded 500,000.
 Jun. JPRS received the approval from ICANN to start IDN service.
 Jul. RFC-based Japanese JP Domain Name registration service started.
 Dec. “Japanese JP Access Site (<http://jaip.jp/>)” for mobile phones was established.
- 2004 Feb. IP Anycast technology was introduced in JP DNS service ([a.dns.jp] [d.dns.jp]).
 “Nihongo JP Navi” service was started.
 Jul. JP domain name started full support for IPv6, for the first time in the world as a TLD.
 Dec. The portal site “Nihongo dot JP” (<http://日本語.jp/>) for promoting Japanese JP Domain Name was launched.
- 2005 Jan. The portal site “Jinmei Jiten dot JP” (<http://人名辞典.jp/>) to introduce Japanese JP domain names using personal names was launched.
 Jun. Work on eliminating risks due to improper management of DNS servers was started.
 Dec. “Eki Machi Guide dot JP” (<http://駅街ガイド.jp/>), which provides information on areas around stations using Japanese JP domain names consisting of station names throughout Japan, started.
 JPRS started operation of the M-Root DNS server in cooperation with the WIDE Project.
- 2006 Jan. JPRS started deleting improper DNS server registrations.
 Apr. JPRS shortened the processing time for JP DNS update.
 Sep. JPRS changed the number of GO.JP domain names which each government organization can register.
 Japanese JP domain names (for public administration, judiciary and legislative process) reserved for the government were released for relevant government organizations.
 Nov. The cumulative number of registered General-use JP domain names exceeded 500,000.
 Dec. JPRS published guidelines for making URLs consisting of Japanese domain names clickable in email text.
- 2007 Jan. The cumulative number of registered CO.JP domain names exceeded 300,000.
 Mar. “Procedure for recovering deleted domain name registration” was introduced for General-use JP Domain Name.
 Dec. IP Anycast technology was introduced to the JP DNS service ([e.dns.jp]).
- 2008 Mar. The cumulative number of registered JP domain names exceeded one million.
 Jun. JPRS started the real-time application process service for CO.JP Domain Name.
 Oct. The JP DNS server configuration was changed (c.dns.jp and g.dns.jp added).
- 2009 Apr. JPRS announced its participation in the BIND 10 development project.
 Nov. JPRS extended the coverage of the real-time application process service.
- 2010 May JPRS distributed a cartoon booklet “How the Internet Works” free of charge to junior and senior high schools across Japan.
- 2011 Jan. JPRS deployed DNSSEC to the JP domain name service.
 Feb. The cumulative number of registered JP domain names exceeded 1.2 million.
 JPRS published “DNS Practices,” a book on DNS, written by JPRS engineers.
 Sep. JPRS decided to establish “Prefecture Type JP Domain Name”.
- 2012 Jul. Priority Registration Application of the Prefecture Type JP Domain Name started.
 Aug. The cumulative number of registered JP domain names exceeded 1.3 million.
 Sep. Concurrent Registration Application of the Prefecture Type JP Domain Name started.
 Nov. General Registration Application of the Prefecture Type JP Domain Name started.
- 2013 Mar. The cumulative number of registered Prefecture Type JP domain names exceeded 10,000.
 Nov. The TTL value of the DS RR for JP DNS servers was changed.
- 2014 Nov. JPRS introduced Japanese characters into the Prefecture Labels of the Prefecture Type JP Domain Name.

03·2 JP Domain Name Advisory Committee

The JP Domain Name Advisory Committee was established in 2002 in order to maintain fairness and neutrality of the .JP registry operations. The committee members from outside of JPRS with various viewpoints consider policies for JP domain name services.

JP Domain Name Advisory Committee meetings are open to the public, and the minutes and documents are publicly accessible on the JPRS website.

(1) Consultations and Advisories

Consultation / Advisory	Consultation Date Document No.	Advisory Date Document No.
Introduction of Japanese labels into the second level domain (2LD) of the Prefecture Type JP Domain Name	May 21, 2014 JPRS-ADV-2014001	Jul. 31, 2014 JPRS-ADVRPT-2014001
Method for appointing the members of the 8th JP Domain Name Advisory Committee	Dec. 16, 2014 JPRS-ADV-2014002	(under consideration)

*For details about consultation and advisory themes, please refer to "JP Domain Name Advisory Committee" (<http://jprs.jp/advisory/>) (in Japanese).

(2) Advisory Committee Meetings

May. 21 **48th JP Domain Name Advisory Committee meeting**
 The JPRS Board of Directors submitted an inquiry entitled “Introduction of Japanese labels into the second level domain (2LD) of Prefecture Type JP Domain Names” (JPRS-ADV-2014001), and the committee members made expressed opinions on the subject.

JPRS gave a status report on the service changes based on past advisories (“Relaxation of one-domain-name-per-organization limitation on Organizational/Geographic Type JP Domain Names in case of organizational mergers,” “Protection of JP domain names and registrants in a particular situation under the JP Registrar system” and “Introduction of greater flexibility into the basic processes for JP domain name registration”). The committee members expressed opinions on the topics from various aspects.

JPRS explained the development of the “Domain Name Policy Committee” established in the Information and Communications Council of the Ministry of Internal Affairs and Communications, and the committee members exchanged views with each other.

Jul. 18 **49th JP Domain Name Advisory Committee meeting**
 The committee reached an consensus on the draft advisory report “Introduction of Japanese labels into the second level domain (2LD) of Prefecture Type JP Domain Names” developed according to the discussions at the 48th meeting and thereafter. The advisory report was finalized on July 31 and delivered to JPRS after the committee incorporated and confirmed the amendments proposed by the members following the 49th meeting.

Due to the resignation of Mr. Ryuichi Hara from the 7th Advisory Committee as of June 20, the committee agreed that the chair would coordinate with NTT Communications Corporation, which Mr. Ryuichi Hara belonged, and ask the company to appoint one of its candidate board directors as a replacement.

To share the latest topics related to domain names, JPRS described the status of discussions at ICANN including the rules and issues regarding Internationalized Top Level Domain Name (IDN TLD) strings. The committee exchanged opinions on the topics.

Dec. 16 **50th JP Domain Name Advisory Committee meeting**
 It was reported that Mr. Takashi Ooi was appointed by NTT Communications as the successor to Mr. Ryuichi Hara for the 7th Advisory Committee and that Mr. Ooi accepted the position.

JPRS reported on its response to the advisory report “Introduction of Japanese labels into the second level domain (2LD) of Prefecture Type JP Domain Names” (JPRS-ADVRPT-2014001).

The JPRS Board of Directors submitted an inquiry entitled “Method for appointing the members of the 8th JP Domain Name Advisory Committee” (JPRS-ADV-2014002). JPRS explained the background related to the composition of the JP Domain Name Advisory Committee. Following the secretariat’s report on the conclusion of the Domain Name Policy Committee of the Information and Communications Council, the members exchanged opinions regarding the method for appointing the members of the Advisory Committee. Then the director of the Computer Communications Division, Telecommunications Bureau of the Ministry of Internal Affairs and Communications also presented his view. As a result, it was agreed that the Japanese government would be invited to the committee for the next term as a member, in addition to the committee’s existing six member organizations/sectors.

To share information on troubles related to the Internet, the committee member Ms. Taeko Yuine, the board director of the Nippon Association of Consumer Specialists, explained the results of consultations on “Internet Trading Emergency Hotline.” The committee members exchanged opinions on the topic.

03.3 Proposals and Presentations

*Original materials are written in English, unless otherwise specified.

Date	Title	At	Hosted by
Jan. 14	Report on ccNSO-related Issues (in Japanese)	38th ICANN Readout Session	JPNIC/IAjapan
Jan. 14	Latest Developments in the Registry Stakeholder Group (RySG) and New TLD Applicant Group (NTAG) (in Japanese)	38th ICANN Readout Session	JPNIC/IAjapan
Feb. 1	DNS Hot Topics (in Japanese)	IPv6 Summit in SAPPORO 2014	IAjapan/LOCAL*1
Feb. 21	Status report of APTLD Mission and Objective Working Group	APTLD Meeting	APTLD
Feb. 21	Introducing Digital Certificate for Registrar Authentication in JP Registry System	APTLD Meeting	APTLD
Feb. 21	DS TTL shortening experience in .JP	APTLD Meeting	APTLD
Feb. 27	DS TTL shortening experience in .JP	APRICOT2014 DNS session	APIA*2/APNIC*3
Apr. 10	Coping with Abuses - as a "Domain Name" Registry -	CeCOS VIII	APWG
Apr. 11	Update on Privacy and Other Topics Related to DNS (in Japanese)	IETF Update Meeting (89th, London)	ISOC-JP/JPNIC
May 11	Analysis of DITL root data and comparison with full-resolver's data.	DNS-OARC Spring 2014 Workshop	DNS-OARC
May 19	Report on ccNSO-related Issues (in Japanese)	39th ICANN Readout Session	JPNIC/IAjapan
Jun. 2	Tour de Table: .JP	CENTR Marketing Workshop	CENTR
Jun. 3	Tour de Table: .JP	CENTR Admin Workshop	CENTR
Jun. 3	Nation-wide discussion on the reliability and transparency of registry management	CENTR Admin Workshop	CENTR
Jun. 26	An Introduction to DNS Operations for Beginners - Troubles and Keys to Effective Troubleshooting - (in Japanese)	DNS Summer Days 2014	DNSOPS.JP
Jun. 27	DNS-OARC/RIPE68 report (in Japanese)	DNS Summer Days 2014	DNSOPS.JP
Jun. 27	Expected Time to Implement and Inject Attacks Written in wikipedia DNS_spoofing and Optimization of Attack Tools (in Japanese)	DNS Summer Days 2014	DNSOPS.JP
Jul. 17	How to Address Security Issues — Taking on Cache Poisoning Method — (in Japanese)	JANOG34 Meeting	JANOG
Jul. 20	Redirecting the target domain's nameserver cache poisoning attacks	IEPG Meeting	IEPG*4
Jul. 22	draft-fujiwara-dnsop-poisoning-measures-00	IETF 90 dnsop WG	IETF
Jul. 29	DNS Evening — Security and Technology Trend (in Japanese)	1st ISOC-JP Study Meeting	ISOC-JP
Aug. 15	What's new in .JP	TW Registrar Meeting	TWNIC*5
Aug. 19	Update on ICANN Root Server System Advisory Committee (RSSAC) (in Japanese)	40th ICANN Debriefing Session	JPNIC/IAjapan
Aug. 19	Report on ccNSO-related Issues (in Japanese)	40th ICANN Debriefing Session	JPNIC/IAjapan
Aug. 25	Report on IETF 90 (Toronto) — Topics Related to DNS (in Japanese)	IETF Update Meeting (90th, Toronto)	ISOC-JP/JPNIC
Sep. 12	Has the "Root" Been Eliminated? — Revisiting DNS Cache Poisoning and Countermeasures — (in Japanese)	2nd Meeting in 2014, Technical Committee on Internet Architecture	Technical Committee on Internet Architecture, The Institute of Electronics, Information and Communication Engineers*6

Date	Title	At	Hosted by
Sep. 15	ccNSO Update	APTLD Meeting	APTLD
Sep. 27	Study DNS Basics in 30 Minutes — for DNS Beginners (in Japanese)	SECCON 2014 Nagano, DNS Security Challenge	SECCON 2014 Steering Committee*7
Sep. 27	DNS Waterboarding Attacks (in Japanese)	SECCON 2014 Nagano, DNS Security Challenge	SECCON 2014 Steering Committee
Oct. 12	2014 Root DITL Data analysis and TLD popularity analysis	DNS-OARC 2014 Fall Workshop	DNS-OARC
Oct. 15	Prefecture-type JP domain names and its IDN version	ccNSO Members Meeting	ccNSO
Nov. 19	New gTLD Update (in Japanese)	41st ICANN Readout Session	JPNIC/IAjapan
Nov. 19	Update on RSSAC (in Japanese)	41st ICANN Readout Session	JPNIC/IAjapan
Nov. 19	Report on ccNSO-related Issues (in Japanese)	41st ICANN Readout Session	JPNIC/IAjapan
Nov. 20	Threats to DNS and Their Categorization (in Japanese)	Internet Week 2014 Tutorial	JPNIC
Nov. 20	Security Issues Caused by DNS Operations	Internet Week 2014 DNS Security	JPNIC
Nov. 20	How to Live with Immature DNS — Delegation Injection/Transfer Injection and DNS Waterboarding (Slow Drip) Attacks (in Japanese)	Internet Week 2014 Lunch Seminar	JPNIC
Nov. 20	JP DNS Update (in Japanese)	Internet Week 2014 DNS DAY	JPNIC
Nov. 20	DNS update — Domain Names (in Japanese)	Internet Week 2014 DNS DAY	JPNIC
Nov. 20	Monitoring Authoritative DNS (in Japanese)	Internet Week 2014 DNS DAY	JPNIC
Nov. 20	Addressing DNS Security Issues — from the Viewpoint of DNS Operators (Domain Name Registries) (in Japanese)	Internet Week 2014 DNS DAY	JPNIC
Nov. 20	Preliminary Report of DNS Statistical Research, a Topic for DNS-OARC2014, ICANN51 and IETF91 (in Japanese)	DNSOPS.JP BoF	DNSOPS.JP
Nov. 21	Wrap-up of IW2014 Sessions! It was the DNS Day (in Japanese)	IW2014 IP Meeting	JPNIC
Dec. 19	Report on IETF 91 — Topics Related to DNS — (in Japanese)	IETF Update Meeting (91st, Honolulu)	ISOC-JP/JPNIC

*1 LOCAL

<http://www.local.or.jp/> (in Japanese)

*2 APIA: Asia Pacific Internet Association

<http://www.apia.org/>

*3 APNIC: Asia Pacific Network Information Centre

<http://www.apnic.net/>

*4 IEPG

<http://www.iepg.org/>

*5 TWNIC: Taiwan Network Information Center

<http://www.twmic.net.tw/>

*6 Technical Committee on Internet Architecture, the Institute of Electronics, Information and Communication Engineers

<http://www.ieice.org/~ia/eng/>

*7 SECCON 2014 Steering Committee

<http://2014.seccon.jp/committee.html> (in Japanese)

03·4 Press Releases

Date	Title
Feb. 24	JPRS Supports “16th Japan Junior/Senior High School Web Contest” and Presents “Best Domain Naming Award (JPRS Special Award)” – Supporting the Internet education of young people by offering experience of using JP domain names – (in Japanese)
Mar. 27	“JP Domain Name Registry Report 2013” Published Today – Prefecture Type JP Domain Names exceed 10,000, and distribution of free educational materials to educational institutions totals 100,000 copies – (in Japanese)
Apr. 25	JPRS to provide Japan's first operational scheme to support new gTLD registrations – Forming Domestic Business Alliance: Joint Effort with MIS –
May 15	JPRS Distributes Free Graphic Comic-style Booklet on “How the Internet Works” to Educational Institutions in Japan for five years in a row – In line with “Info-Communications Promotion Month,” an initiative to spread and promote information communication – (in Japanese)
Jun. 9	Expert Team on Name Collision with JPRS as Member Publishes Report – Outlining the issues arising with the introduction of new gTLDs and recommending measures to be taken by concerned parties including managers of enterprise networks – (in Japanese)
Aug. 27	JPRS to Introduce Japanese Characters into Prefecture Labels of Prefecture Type JP Domain Names – Starting to accept registration applications from November 2014 – (in Japanese)
Nov. 4	JPRS Introduces Japanese Characters into Prefecture Labels of Prefecture Type JP Domain Names

*Please refer to “Press Release” (<http://jprs.co.jp/en/press/>) for the latest releases in English.

03-5 Provision of Technical Information Related to DNS

*Original materials are written in Japanese.

Date	Title
Jan. 14	(Urgent) Vulnerability of BIND 9.x (DNS Service Outage) (Published on January 14, 2014)
May 9	(Urgent) Vulnerability of BIND 9.10.0 (DNS Service Outage) (Published on May 9, 2014)
May 30	Measures against Cache Poisoning Attacks for Authoritative DNS Server Operators — Basic Countermeasures
May 30	(Urgent) Rechecking of DNS Server Settings Strongly Recommended Due to Increased Risk of Cache Poisoning Attacks (Updated on May 30, 2014)
Jun. 12	(Urgent) Vulnerability of BIND 9.10.x (DNS Service Outage) (Published on June 12, 2014)
Sep. 11	Vulnerability of PowerDNS Recursor (DNS Service Outage) (Published on September 11, 2014)
Nov. 5	(Urgent) Facts and Countermeasures: Domain Name Hijacking through Unauthorized Alteration of Registration Information (Published on November 5, 2014)
Dec. 9	Vulnerability of BIND 9.10.x (DNS Service Outage) (Published on December 9, 2014)
Dec. 25	(Urgent) Vulnerability of Multiple DNS Software Products (Excess Consumption of System Resources) (Updated on December 25, 2014)

*For the latest information, please refer to the “Technical Information Related to DNS” (<http://jprs.jp/tech/>) (in Japanese).

About JPRS

JPRS provides domain name services such as domain name management, administration and distribution, and also performs domain name system (DNS) operations.

In addition, JPRS is engaged in research and development of various Internet technologies.

● Domain Name Management and Administration

JPRS manages and administers domain names. In particular, JPRS plays an important role as the registry of JP Domain Name, or domain names of Japan. You may have seen addresses for websites and emails such as “http://○○○.jp” and “△△△@○○○.jp”. JPRS manages and administers a part of these addresses, namely, strings in the form of “○○○.jp”. Domain names are the key to accessing the Internet. JPRS is constantly improving its services so that JP domain names will continue to assist the activities of all kinds of Internet users, including companies, organizations, and individuals.

● DNS Operation

DNS (Domain Name System) is a system for identifying computers connected to the Internet using domain names, so it is sometimes referred to as the “phone book for the Internet.”

If DNS were to fail, people would not be able to access websites or exchange emails using domain names. To prevent such a catastrophe, JPRS has established a 24/7/365 system to ensure stable operation of the “JP DNS” for managing JP domain names.

● R&D of Internet Technologies and International Activities to Support the Internet

JPRS takes an active part in the research and development of advanced technologies to promptly respond to changes in the Internet environment and social needs. Specifically, it conducts technical verification for the smooth deployment of DNSSEC, a mechanism for improved DNS security. JPRS is also engaged in standardization activities through contributing to internationalization of the identifiers used for protocols, working out methods of resolving issues concerning DNS operations and submitting proposals to standardize registry technologies. JPRS actively publishes the results of these activities and shares information at IETF and other meetings to contribute to the network society.

Translated: 28 May 2015

Note: This English translation is provided for informational purposes only.
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