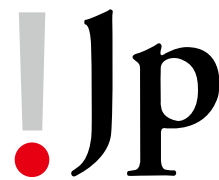


2015.1-12



JP Domain Name Registry Report



JPRS
JAPAN REGISTRY SERVICES

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 1.4 million in October 2015. Especially, as many as 370,000 names are registered under “co.jp,” making it the most registered category in the Organizational Type JP Domain Name, the domain name space categorized by organizational type of registrants. 97% of publicly-listed companies in Japan have already registered “co.jp” domain names, which indicates that many companies regard “co.jp” as the most suitable domain for corporate websites.

In 2015, JPRS worked on a number of projects such as provision of the JP Domain Name Usage Support Program for Students and expansion of the definition of organizations eligible for the Organizational Type JP Domain Name in order to meet the increasing demand for domain names.

With respect to the trend of the global domain name industry, the New gTLD Program of ICANN*¹ enabled a number of new gTLDs to start operation one after another, leading to the launch of websites with those new gTLD domain names.

In addition, there have been challenges that threaten the Internet infrastructure such as domain name hijacking caused by unauthorized alteration of registration data in registry or registrar databases, DDoS attacks exploiting the mechanism of the domain name system (DNS) and detection of vulnerabilities in 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 communities 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 getting ahead in the competition. Recognizing this vital nature of its services and influence on society, JPRS carries out its tasks and publishes the annual “JP Domain Name 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
<https://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 gain stronger support from the local and global Internet community; and to provide domain names as well as management and administration services that contribute to society in an environment where JPRS competes and collaborates with other registries of 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 2015

In 2015, 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 2015” (January)

JPRS has been collaborating with Impress R&D^{*1}, IAJapan^{*2} and JPNIC^{*3} in the Internet White Paper Editorial Committee in the planning and steering of the White Paper since 2013. “Internet White Paper 2015 (subtitle: Digital Society Accelerates)” was published on January 30 with the Internet White Paper Editorial Committee as the editor.

“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.

● <https://jprs.co.jp/topics/2015/150203.html> (in Japanese)

Addition of “Internet White Paper 2013-2014” to “Internet White Paper ARCHIVES” (February)

“Internet White Paper 2013-2014” published in 2014 was added to “Internet White Paper ARCHIVES,” the website organized and operated by the Internet White Paper Editorial Committee.

“Internet White Paper ARCHIVES” is a compendium of Internet White Papers, which are published annually and span from 1996 to the previous year's edition. The archive is publicly available free of charge. Going forward, the white paper that becomes a back issue in the year following its publication will also be added to the archive.

● <https://jprs.co.jp/topics/2015/150212.html> (in Japanese)

17th Japan Junior/Senior High School Web Contest (February)

JPRS supported the “17th 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 706 General-use JP domain names (both in Japanese and ASCII) free of charge for the works of 353 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.

● <https://jprs.co.jp/press/2015/150223.html> (in Japanese)

APTLD Fukuoka Meeting and APRICOT-APAN 2015 (February-March)

JPRS served as the local host for the APTLD^{*6} Meeting organized in Fukuoka City, Fukuoka Prefecture and supported the operation. JPRS also sponsored APRICOT-APAN 2015^{*7} held at the same venue and participated in various activities of the event including giving a presentation at its exhibition booth.

^{*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} APTLD: Asia Pacific Top Level Domain Association
<http://www.aptdl.org/>

^{*7} APRICOT-APAN 2015
<https://2015.apricot.net/>

ED.JP Domain Name Registration Service Changed to Accept “Center for Early Childhood Education and Care” (April)

The revised “Act on Advancement of Comprehensive Service Related to Education, Child Care, etc. of Preschool Children” (Center for Early Childhood Education and Care Act) took effect on April 1, 2015. Accordingly, JPRS changed its service to make ED.JP Domain Name available to centers for early childhood education and care.

- <https://jprs.jp/whatsnew/notice/2015/20150421-youho.html> (in Japanese)

Publication of the English Version of “History of Internet Resources Management in Japan — Focusing on Domain Name and IP Address” (May)

JPNIC and JPRS released the English version of the web content “History of Internet Resources Management in Japan — Focusing on Domain Name and IP Address (in Japanese)” originally published in 2014. JPNIC and JPRS have been collaborating to compile a comprehensive and easy-to-follow history that explains the evolution of the Internet in Japan from the perspective of Internet resource management. This document was developed by the History Compilation Team, which was organized jointly by JPNIC and JPRS, as part of its activities.

- <https://jprs.co.jp/en/topics/2015/150507.html>

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. The number of copies distributed in these six years exceeds 170,000. 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

- <https://jprs.co.jp/press/2015/150515.html> (in Japanese)

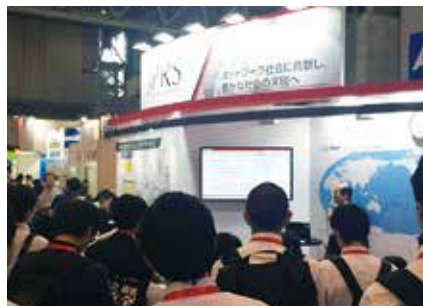
Cooperation with the Company Visit of Kyouunan Junior High School, Tsu City, Mie Prefecture (May)

JPRS gave an overview of its organization and domain name services to the students of Kyouunan Junior High School of Tsu City, Mie Prefecture. The school visits various companies to help students think about their future career. JPRS cooperated with this educational activity of the school.

Interop Tokyo 2015 (June)

To provide information on domain names and DNS, JPRS provided seminars and explained the basics of domain names, highlighted a technical topic related to DNS with the slide deck entitled “Domain Name Hijacking through Unauthorized Alteration of Registration Information” and outlined the latest developments of new gTLDs through presentations and exhibited panels in its exhibition booth.

- <https://jprs.co.jp/topics/2015/150603.html> (in Japanese)



JPRS booth

SECCON 2015 (June)

“SECCON 2015^{*8}” is a series of events that was started in June with the aim of recruiting and training information security personnel and providing a place for hands-on experience with related technologies. JPRS supported “SECCON 2015” as a sponsor.

JPRS also ran a booth at SECCON 2015 Final held in January 2016.

Conclusion of MoU with ICANN and JPNIC on Collaboration for Translating ICANN Materials into Japanese (June)

JPRS signed a Memorandum of Understanding (MoU) with ICANN and JPNIC on collaboration for translating ICANN materials into Japanese. This MoU specifies that the parties work with each other to produce Japanese translations of ICANN materials in order to enhance understanding about ICANN activities as well as participation of the Japanese community in those activities.

- <https://jprs.co.jp/en/press/2015/150623.html>



Signing ceremony

Launch of a Joint Research Project with ISPs to Create a More Fault Tolerant DNS Environment (October)

JPRS started a joint research project with QTNNet, an Internet service provider in Japan, on enhancing fault-tolerance through distributed arrangement of DNS servers for the new gTLD “.jprs,” which was established by JPRS with the primary objective of research and development in relation to the Internet. Since February 2016, JPRS has started collaborating in turn with seven telecom carriers including QTNNet, each backed by electrical power companies, and followed up the research by exploring the issues including the continued use of the Internet after a large scale disaster.

- <https://jprs.co.jp/en/press/2015/150713.html>
- <https://jprs.co.jp/press/2016/160118.html> (in Japanese)

^{*8} SECCON 2015
<http://2015.seccon.jp/> (in Japanese)

Start of JP Domain Name Usage Support Program for Students (October)

JPRS started to provide a program for JP Registrars in which the registrars can allow students to register JP domain names for free. This program is permitted in cases where JP Registrars collaborate with educational institutions such as universities and technical colleges to help students distribute information on the Internet through registration and use of JP domain names.

- <https://jprs.co.jp/press/2015/151005.html> (in Japanese)

IETF 94 (November)

JPRS supported IETF 94*⁹ held in Yokohama City, Kanagawa Prefecture as a sponsor and helped to organize the event.

JPRS also set up a booth at Bits-N-Bites where exhibitors demonstrated products and new technologies applying the technical standard defined in IETF and introduced their activities. At the booth, JPRS outlined how it applies the technical standards in JP Domain Name and JPRS, and showed the latest status of implementation.



JPRS booth at Bits-N-Bites

Internet Week 2015 (November)

JPRS supported Internet Week 2015 as a sponsor, and Yoshiro Yoneya of JPRS played a leading role in planning the DNS DAY as a member of Program Committee. JPRS staff members also gave presentations in the following programs. Megumi Harada outlined DNSSEC at the tutorial “DNSSEC Validation Starting Today,” and Satsuki Hori, Takaharu Ui and Kazunori Fujiwara introduced the trends related to JP DNS and domain names along with DNS privacy at “DNS DAY.” At the Lunch Seminar, Yasuhiro Morishita and Yuri Hirabayashi summarized the technical information provided by JPRS and explained its messages in the presentation entitled “Cross-Cutting Collaboration through Multi-Posting — Overview and Meaning of Technical Information Provided by JPRS: Lunch with DNS.”



Lunch Seminar at Internet Week 2015

- <https://jprs.co.jp/topics/2015/151001.html> (in Japanese)

Change of Service Related to JP Domain Names for “Independent Administrative Agencies” (November)

JPRS changed its service so that those independent administrative agencies which are specified in the relevant law to establish an educational institution eligible for an AC.JP domain name could register an AC.JP, GO.JP or OR.JP domain name.

- <https://jprs.jp/whatsnew/notice/2015/20151124-ac.html> (in Japanese)

*9 IETF 94
<https://www.ietf.org/meeting/94/>
<http://ietf94.jp/>

Publication of an RFC Written by a JPRS Engineer (December)

RFC 7719 (“DNS Terminology”) co-authored by Kazunori Fujiwara of JPRS was issued as an Informational RFC. This RFC gathers together numerous terms used for DNS and presents the current definition of each one.

- <https://jprs.co.jp/topics/2015/151216.html> (in Japanese)

Events and Seminars for JP Registrars

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

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.

“JPRS Technical Seminar” (July)

JPRS outlined the much-talked-about topics related to DNS including “DNS water torture attacks” and “domain name hijacking caused by unauthorized alteration of registration data” for engineers. JPRS also described the issues arising in construction and operation of DNS servers and shared operation techniques taking into account external threats in a presentation entitled “Techniques for Constructing and Operating Secure DNS.”

“14th JP Partners’ Meetings” (October)

JPRS described developments in the domain name industry, plans for the JP Domain Name including future service changes as well as information useful for day-to-day operations.

JPRS also explained the scheme of “domain name hijacking caused by unauthorized alteration of registration data” and “cache poisoning attacks” as well as the countermeasures against them.

JP Registrar Seminar – An Introduction to Domain Name Registration and Administration –” (November)

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 globally the resources underpinning the Internet, such as domain names, IP addresses and root servers.

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*1 Sponsorship Agreement” with ICANN, and has since been entrusted by ICANN to serve as the registry of Japan's ccTLD “.jp.”



ICANN53

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.

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 Internet resource management. In 2015, ICANN held its 52nd meeting in Singapore in February, the 53rd meeting in Buenos Aires, Argentina in June and the 54th meeting in Dublin, Ireland in October.

With the participation of numerous parties interested in ccTLD and gTLD*2, 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 discussions and information-sharing and discussions on technical issues including DNS and DNSSEC.

As the contract between NTIA and ICANN was to expire in September 2015, discussions on how to transition the stewardship of the IANA*3 function (IANA stewardship transition), which had been discussed since 2014, and on the accountability of ICANN, were continued while gaining inputs through calls for public comment and work done mainly by related working groups. However, NTIA and ICANN later decided to extend the contract in order to incorporate additional inputs from the broader community. Hence the working groups continued to actively share information with the community and exchange opinions at the ICANN meetings after September 2015.

The following reports JPRS's activities in the Supporting Organizations and the Advisory Committees within ICANN:

*1 ccTLD: Country Code Top Level Domain

*2 gTLD: Generic Top Level Domain

*3 IANA: Internet Assigned Numbers Authority
<https://www.iana.org/>

(1) ccNSO

ccNSO^{*4} is one of the Supporting Organizations set up in ICANN to assist its activities. The role of ccNSO is 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 spent a great deal of time discussing the topics regarding the IANA stewardship transition and the accountability of ICANN. In the ccNSO members meeting held in conjunction with the ICANN meetings, ccNSO not only shared the status and the services of each ccTLD but also held a number of sessions for information-sharing and opinion exchange regarding the IANA stewardship transition.

In response to the call for comments related to the IANA stewardship transition and ICANN accountability, ccNSO Council decided to collect inputs from the broader ccTLD community not only ccNSO members. ccNSO therefore collaborated with each regional ccTLD organization to actively disperse relevant information and gather opinions in the meetings of those organizations and through webinars. Hirofumi Hotta of JPRS participated in the formation of opinions of the ccNSO Council as a council member.

In addition, amid the increase in attacks against ccTLDs from outside, ccNSO actively promoted participation in the mailing list^{*5} which was intended primarily to share information on incidents. This mailing list has been discussed in SECIR WG since 2014. A leaflet clearly showing the ccTLDs which were not on the list at that time was distributed at the ICANN meetings, and the objective of the whole activity was actively publicized, resulting in more than half of the ccTLDs joining the list.

^{*4} ccNSO: Country Code Names Supporting Organisation
<https://ccnso.icann.org/>

^{*5} TLD-OPS Secure Communication Email List
<https://ccnso.icann.org/resources/tld-ops-secure-communication.htm>

(2) IDN Variant TLD Program

The IDN*⁶ Variant TLD Program is a series of activities to develop Label Generation Rules (LGR) for the root zone and aims to establish procedures to add non-ASCII scripts to the root zone.

The following two panels are engaged in the activities of the IDN Variant TLD Program:

1. Generation Panel (GP)

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

2. Integration Panel (IP)

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

The IP was established in 2014, and several GPs for different scripts were formed in 2015. The Arabic script GP and the Armenian script GP developed the proposed LGRs, respectively.

The cultural community that uses Han (Kanji) script includes the Chinese (including Taiwan and Hong Kong, etc.), Korean and Japanese communities, so it is necessary to develop the LGRs 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 in the Japanese Generation Panel (JGP) involving experts representing the Japanese language community, linguists and registry experts, 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.

The Japanese, Chinese and Korean GPs will continue to coordinate with each other and then respectively propose the LGRs for their own scripts to ICANN. The three-party coordination was originally planned to be complete in mid 2015, but work is still under way as more time is necessary to consider the LGRs in the Chinese and Korean GPs. Therefore, JGP will continue to collaborate with the Chinese and Korean GPs and consider the Japanese LGR in 2016 as well.

*6 IDN: Internationalized Domain Name

(3) RSSAC

RSSAC^{*7} is one of the Advisory Committees within ICANN that advises the ICANN community and Board on matters relating to operation, administration, security, and integrity of the Root Server System.

As one of the operators of the M-Root DNS server, JPRS has been participating in the activities of RSSAC. Hirofumi Hotta of JPRS plays an active role in the committee as the standing proxy of Dr. Jun Murai with the WIDE Project. In 2015, Hotta participated in the development of a guideline regarding the operation of the whole root server system with the other root server operators and the DNS engineers. He also participated in the discussions to clarify the accountability of RSSAC and to make its activities more transparent, as part of the consideration resulting from the IANA stewardship transition and the accountability of ICANN.

(4) SSAC

SSAC^{*8}, 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, DNS 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) 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 representing Asia and plays a part by planning the workshops and informing the other members of the situation in Japan.

^{*7} RSSAC: Root Server System Advisory Committee

^{*8} SSAC: Security and Stability Advisory Committee
<https://www.icann.org/groups/ssac>

(6) Root KSK Rollover Design Team

DNSSEC deployment in the root zone began in July 2010. It is specified that a rollover of the Root Zone Key Signing Key (KSK) should be carried out when necessary or every five years^{*9}. In February 2015, ICANN set up a design team (KSK Rollover Design Team) that was tasked with planning the Root Zone KSK rollover and drew up a document that specified the roles of the related parties and the process of the rollover. Yoshiro Yoneya of JPRS is a member of the Design Team.

The Design Team published the document and called for public comment in August 2015. As of the end of 2015, the Design Team is drafting the document that reflects the inputs received during the public comment period.

The document is intended for the first KSK Rollover and proposes that the signature algorithm and key size should be maintained; the KSK should be rolled over on a 90-day window that is set for the Zone Signing Key (ZSK) rollover; and a fallback should be performed in case of emergency. The document will be implemented after the approval of the ICANN Board.

The Root Zone KSK Rollover is expected to be carried out in the first half of 2017.

(7) RA Spec11 Security Framework Drafting Team

In the Registry Agreement (RA) applicable to the New gTLD Program, a new gTLD registry is required to periodically assess whether the registered domain names are being used for malicious purposes and provide statistical reports to ICANN^{*10}.

The report is called “Spec11 3b” or simply “Spec11,” after the relevant part in the RA. ICANN established a team to draft a guideline for the new gTLD registries (Spec11 Security Framework Drafting Team) in July 2015, so that ICANN could respond to the inquiries from the registries as to how they should implement the Spec11. Currently the Drafting Team is drawing up a document containing the points to be considered by the new gTLD registries. The Team consists of three groups, namely, the Registry Group, the Registrar Group and the GAC^{*11} Group. Yoshiro Yoneya of JPRS is on the Registry Group.

In the Team, mainly the Registry Group prepares the outline of the document, and then the Registrar Group and the GAC Group review the draft.

The draft guideline will be published for public comment in 2016.

^{*9} DNSSEC Practice Statement for the Root Zone KSK Operator
<https://www.iana.org/dnssec/icann-dps.txt>

^{*10} REGISTRY AGREEMENT
<https://newgtlds.icann.org/sites/default/files/agreements/agreement-approved-09jan14-en.pdf>

^{*11} GAC: Governmental Advisory Committee
<https://gacweb.icann.org/>

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 2015, IETF 92 was held in Dallas, U.S.A., IETF 93 in Prague, Czech Republic and IETF 94 in Yokohama, Kanagawa Prefecture.

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



IETF 94

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 non-alphanumeric (internationalized) characters 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 cases and compatible characters so that character strings can be matched up correctly.

In IETF, the way for standardization had been discussed in the precis Working Group (WG)*² set up in June 2010. precis consists of a framework that defines the outline of the processing order, mode and the individual options, along with the profiles that define the options in the framework to be used in each protocol.

The framework and the main profiles became RFCs in 2015, and the guidelines co-authored by Yoshiro Yoneya of JPRS to complement the framework were approved as an RFC. Thus the working group has almost completed its activities.

RFC 7564 PRECIS Framework: Preparation, Enforcement, and Comparison of Internationalized Strings in Application Protocols

RFC 7613 Preparation, Enforcement, and Comparison of Internationalized Strings Representing Usernames and Passwords

RFC 7700 Preparation, Enforcement, and Comparison of Internationalized Strings Representing Nicknames
draft-ietf-precis-mappings Mapping characters for PRECIS classes

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

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

(2) weirds WG

weirds WG^{*3} 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 address the issues, the weirds WG standardized RDAP (Registration Data Access Protocol), a new protocol for queries and responses of registration data transmitted via HTTP/HTTPS. Through RDAP, the registration data are queried with URI, and the responses are received in the generic JSON (JavaScript Object Notation) format that is structured and supports internationalization.

The following six RFCs were published in March 2015, and the weirds WG fully completed its activities.

- RFC 7480 HTTP Usage in the Registration Data Access Protocol (RDAP)
- RFC 7481 Security Services for the Registration Data Access Protocol (RDAP)
- RFC 7482 Registration Data Access Protocol (RDAP) Query Format
- RFC 7483 JSON Responses for the Registration Data Access Protocol (RDAP)
- RFC 7484 Finding the Authoritative Registration Data (RDAP) Service
- RFC 7485 Inventory and Analysis of WHOIS Registration Objects

The discussion on RDAP as a protocol was concluded with the publication of these RFCs, and the practical use and deployment of RDAP have since been discussed outside the framework of the working group. It is carried out mainly by ICANN, the registries and the registrars.

(3) dnsop WG

The name of the dnsop WG^{*4} 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 contributing 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.

^{*3} weirds WG: Web Extensible Internet Registration Data Service Working Group
<https://datatracker.ietf.org/wg/weirds/>

^{*4} dnsop WG: Domain Name System Operations Working Group
<https://datatracker.ietf.org/wg/dnsop/>

Kazunori Fujiwara of JPRS, Paul Hoffman of ICANN and Andrew Sullivan of Dyn Inc. in the U.S. started to co-author the DNS Terminology and standardize it in November 2014, which resulted in the publication of RFC 7719 on December 15, 2015.

RFC 7719 DNS Terminology (Status: Informational)

In addition, Kazunori Fujiwara and Akira Kato of the Graduate School of Keio University co-authored the following Internet Drafts and made a proposal to use the mechanism to prove the non-existence of DNSSEC as a countermeasure against random sub-domain attacks (DNS water torture attacks).

Aggressive use of NSEC/NSEC3
(draft-fujiwara-dnsop-nsec-aggressiveuse-00)
Aggressive use of NSEC/NSEC3
(draft-fujiwara-dnsop-nsec-aggressiveuse-01)
Aggressive use of NSEC/NSEC3
(draft-fujiwara-dnsop-nsec-aggressiveuse-02)

(4) dprive WG

dprive WG^{*5} develops mechanisms to add confidentiality to DNS transactions, to address concerns surrounding pervasive monitoring.

In 2015, IETF published the “RFC 7626 DNS Privacy Consideration” document, highlighting the issue of DNS privacy. The working group is currently standardizing DNS over TLS on 853/tcp port.

(5) Data Escrow Standardization

JPRS has conducted data escrow^{*6} for JP domain names since April 2002. It worked on the standardization of data escrow with a view to the 2012 round of the New gTLD Program, and Shoji Noguchi of JPRS contributed to the activity as the co-author of the following Internet Drafts.

Registry Data Escrow Specification
(draft-arias-noguchi-registry-data-escrow)
Domain Name Registration Data (DNRD) Objects Mapping
(draft-arias-noguchi-dnrd-objects-mapping)

^{*5} dprive WG: DNS PRIVate Exchange Working Group
<https://datatracker.ietf.org/wg/dprive>

^{*6} data escrow: a mechanism to deposit registration data stored by registries or registrars with a third party in preparation for the possible transfer of operation.

3. Participation in Registry Associations

(1) APTLD

APTLD^{*1} is a confederation composed of ccTLD registries mainly in the Asia Pacific region. JPRS has been a member of APTLD 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.

The groups and the organizations related to the region introduced their activities in the APTLD meetings, and the participants shared information on what they were implementing and considering such as the service of each ccTLD registry and efforts to improve the security of domain names, which was followed by active discussions. Notably in the Jakarta Meeting in September, the attendees discussed the importance of diversified use of Internationalized Domain Names (IDN) in email addresses. As a result, the task force consisting of Hirofumi Hotta of JPRS (.jp), Raed Ai-Fayez (.sa), Mark Kao (.tw), Yuri Kargapolov (.ykp), Jerry Lin (.tw) and Jiankang Yao (.cn) and chaired by Hotta published a statement entitled “The Ad Hoc Task Force Communique on Deployment of Multi-language Email Address Technology (EAI)”^{*2}. The statement was introduced in the session on IDN promotion held during ICANN 54 in October, and was widely supported by the participants.

At the APTLD Fukuoka Meeting held in February, Hirofumi Hotta of JPRS shared the update of ccNSO of ICANN as a member of the ccNSO Council.

At the APTLD Jakarta Meeting held in September, Yoshiro Yoneya of JPRS gave a presentation on the external alerts and reports that JPRS as the registry had issued in response to incidents, and introduced the leaflet that JPRS had created to provide information on the outline of and the countermeasures against major DNS-related attacks, referring to some actual cases.

(2) CENTR

CENTR^{*3} 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.

At the CENTR Admin Workshop held in Stockholm in June, Fumihiko Yoneda of JPRS shared the key points of and the specific measures for the relationship-building between the registry and the registrar in JP domain name services. At the CENTR Security Workshop, Yoshiro Yoneya of JPRS talked about the external alerts and reports that JPRS as the registry had issued in response to incidents, and introduced the leaflet that JPRS had created to provide information on the outline of and the countermeasures against major DNS-related attacks, referring to some actual cases.

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

^{*2} The Ad Hoc Task Force Communique on Deployment of Multi-language Email Address Technology (EAI)
http://www.aptd.org/system/files/the_ad_hoc_task_force_communique_on_deployment_of_multi-language_email_address_technology_eai.pdf

^{*3} CENTR: Council of European National Top Level Domain Registries
<https://www.centr.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 2015, the forum was held in Joao Pessoa, Brazil in November, in which Hirofumi Hotta and Yuri Takamatsu of JPRS participated and contributed to the discussions in the sessions on the IoT and other topics.

The high-level meeting of the United Nations scheduled for December 2015 was supposed to decide whether the IGF should continue in 2016 and beyond. Therefore, IGF 2015 focused on producing a definite outcome and put together the consolidated opinions into best practices.

Then at the UN General Assembly held in December 2015, it was resolved that the IGF be continued after 2016.

(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 global Internet governance issues and other issues specific to the region. Hirofumi Hotta of JPRS is on the Multi-Stakeholder Steering Group (MSG) that considers the policy of APrIGF.

APrIGF 2015 was held in Macau in July, and was attended by Hirofumi Hotta and Yuri Takamatsu of JPRS. In this particular forum the participants discussed Internet governance in each country as well as in Asia, and, like last year, ICANN outlined the IANA stewardship transition and shared related information. In addition, Hirofumi Hotta chaired the session on RootLGR.

At APrIGF 2015, the participants worked on drawing up an outcome document representing the whole APrIGF so that they could convey the consolidated opinion to the global IGF. Therefore, a special session was held to refine the draft outcome document prepared by the secretariat. In the session, the attendees discussed the content and positioning of the document, and after the forum the secretariat published the updated draft reflecting the discussion. Following an additional public comment period, the draft culminated in one of the outcomes of APrIGF.

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

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

(3) Efforts Related to Internet Governance

a) Input to United Nations Department of Economic and Social Affairs (UN DESA) Regarding the Implementation of WSIS Outcomes

JPRS submitted its comment to UN DESA on July 31, 2015, in response to the call for comments.

The purpose of the public comment solicitation was to gather public inputs for assessing the implementation of World Summit on the Information Society (WSIS) outcomes and informing the review of the Tunis Agenda adopted at WSIS held by the UN in November 2005.

Since its foundation JPRS has supported the management of Internet resources with private-sector initiative, and therefore contributed to the public comment from this standpoint.

● <https://jprs.co.jp/en/topics/2015/150803.html>

b) Endorsement of Joint Statement Delivered by Internet-Related Organizations and Individuals Including ISOC

On December 7, 2015, JPRS expressed its endorsement of the “Joint Statement on WSIS+10” delivered by the ISOC and other relevant organizations and individuals in the Internet as part of its contribution to the ten-year review of WSIS undertaken under the auspices of the UN.

In preparation for the UN High-Level Meeting of December 15 and 16, the progress of implementation of the Tunis Agenda, which had been adopted at WSIS in November 2005, was reviewed. As an input to the review, the Internet-related organizations and individuals including ISOC published the Joint Statement calling for the continuation of IGF and expressing their position on the basic framework of Internet governance.

Organizations and individuals were invited to endorse the Joint Statement, and JPRS formally responded to the call by declaring its support for the statement. JPRS has been the proponent of the discussions concerning the Internet on an open, bottom-up, diverse and multistakeholder basis, and so favored the continuation of the IGF which was the embodiment of that stance.

● <https://jprs.co.jp/en/topics/2015/151208.html>

(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.

Internet advancement initiatives of the DotAsia Organisation include the APriGF Secretariat alongside the “NetMission Ambassadors Program” and “Youth IGF,” which are capacity-building programs for young people who are expected to play a role in the evolution of the Internet. In addition, the DotAsia Organisation disseminates the latest information on the domain name marketplace through the publication of “IoN Magazine,” a magazine that reports the recent developments in the Internet industry to the readers around the globe.

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) Participation in AP*Retreat

AP* (APstar^{*4}) Retreat is a meeting that is held twice a year in principle and gathers the Internet-related associations in the Asia Pacific region as well as the participants representing the organizations playing key roles in the Internet in each country and region. At the AP* Retreat meetings the participants share the activities and concerns of each participating organization and discuss how the Asia Pacific community as a whole should address the issues related to the Internet.

In 2015, AP* Retreat was held in Fukuoka City, Fukuoka Prefecture in March and Jakarta, Indonesia in September. In those meetings the associations and organizations related to the Asia Pacific region gave updates on their activities, and volunteers who were playing an active role in the AP regional Internet community jointly declared their support for the proposal developed by the ICG^{*5}, a group tasked with carrying out coordination regarding the IANA stewardship transition.

In the meeting the participants also considered a question raised by a member as to whether AP* Retreat should invite participants more extensively from the Asia Pacific region, and concluded that they should take enough time to consider the issue. Thus they decided to continue the discussion into 2016.

(6) Participation in Root DNS Server Operation

JPRS and the WIDE Project collaboratively operate the M-Root DNS server, one of the root DNS servers, for the purpose of ensuring the reliability and stability of DNS operations.

The root DNS server operator organizations meet on the first day of IETF meetings, which are held three times a year, and 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.

^{*3} DotAsia Organisation
<http://www.dot.asia/>

^{*4} APstar: The Community of Asia Pacific Internet Organizations
<http://www.apstar.org/>

^{*5} ICG: IANA Stewardship Transition Coordination Group

(7) Participation in DNS-OARC

DNS-OARC^{*6} 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^{*7}, 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 2015, Kazunori Fujiwara of JPRS proposed using DNSSEC as a countermeasure against random subdomain attacks (DNS water torture attacks) and talked about its effectiveness. He also presented the changing trend of the number of queries to the root DNS servers and JP DNS servers and then made a proposal of applying QUIC^{*8} or TLS^{*9} in DNS and performing communications for zone transfers and other operations over either of these protocols.

(8) Activities in Academic Societies

JPRS continues to participate in academic societies. Takeshi Mitamura of JPRS serves as an expert member of the Special Interest Group on Business Informatics within the Japanese Society of Artificial Intelligence, and Kazunori Fujiwara of JPRS sits the Technical Committee on Internet Architecture of EIC Communication Society as an expert member.

In 2015, the following research papers and articles were published:

- IEICE TRANSACTIONS on Communications
Title: Reduction of Root DNS Server Queries
Authors: Kazunori Fujiwara, Akira Sato and Kenichi Yoshida
- IPSJ MAGAZINE
Title: DNS Vulnerabilities and Countermeasures
Author: Kazunori Fujiwara
- Artificial Intelligence
Title: The Trend of Social Research Using Network Data
(Special Issue: Artificial Intelligence and Artificial Society Emerged from Business)
Authors: Takeshi Mitamura, Kenichi Yoshida
- The Journal of Institute of Electronics, Information and Communication Engineers
Title: Trend of Internationalized Domain Names
Authors: Yoshiro Yoneya, Hirofumi Hotta

^{*6} DNS-OARC: The DNS Operations, Analysis, and Research Center
<https://www.dns-oarc.net/>

^{*7} DITL: Day In The Life of the Internet
<https://www.dns-oarc.net/oarc/data/ditl>

^{*8} QUIC: Quick UDP Internet Connections

QUIC is the name of a communications protocol being developed by Google Inc. in the U.S. The specifications of QUIC are publicly available. It is based on UDP, a lightweight communications protocol, and is designed to provide reliability equivalent to the existing TCP along with security similar to TLS.

^{*9} TLS: Transport Layer Security

TLS is a protocol designed to provide encrypted communication over connection-oriented transmission protocols such as TCP. TLS is the successor to the traditional SSL.

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.

The JANOG Meetings were held in January and July in 2015. JANOG also held “JANOG LT night #1” in August, which featured a series of five-minute presentations called “Lightning Talk (LT).” JPRS supported these JANOG Meetings as one of the sponsors. Also, the engineers of JPRS participated in the discussion on the mailing list as well as in the meetings.



JANOG36 Meeting

(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 where they can exchange and share information and discuss related issues. DNSOPS.JP holds a BoF (Birds of a Feather) for technical presentations and discussions and “DNS Summer Days” that consists of tutorials and workshops relating to DNS.

In “DNS Summer Days 2015” held on July 24, 2015, Yuri Hirabayashi of JPRS presented “DNS Summer Days Tutorial-Trotter,” outlined the tutorials held in the past DNS Summer Days and illustrated the key points. In addition, Kazunori Fujiwara of JPRS gave a presentation entitled “Recent Changes from the Aspect of JP DNS” at the “DNSOPS.JP BoF” held on November 19, 2015 and used the query information of JP DNS to talk about the status of IPv6 deployment, DNSSEC validation and port randomization.

*1 JANOG: JApan Network Operators' Group
<https://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 April, July and November in 2015, where JPRS reported latest developments and issues of the following organizations, along with the status of the New gTLD Program and Root Zone LGR (Label Generation Rules) and so on. JPRS also discussed the key agenda matters of ICANN with the other participants.

- ccNSO (Country Code Names Supporting Organisation)
- RySG (Registries Stakeholder Group)
- RSSAC (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 2015, Takaharu Ui of JPRS contributed to the activities of ISOC-JP as a board member.

ISOC-JP and JPNIC jointly organized IETF Update Meetings three times in 2015, 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. Fujiwara also presented case examples and introduced the writing style of RFCs and Internet Drafts, the standardization process and some useful tips, using the presentation entitled “How to Write RFCs/Internet Drafts” in “1st IETF Study Meeting — Road to Yokohama.”

(5) Participation in Internet Governance Conference Japan

Internet Governance Conference Japan (IGCJ^{*5}) defines the following as its objectives and holds discussions and information exchanges through the mailing list as well as at the meetings organized every couple of months. JPRS has participated in the IGCJ since its inception.

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

IGCJ's key agenda topics for the year 2015 included the IANA stewardship transition and the developments regarding WSIS+10.

In addition, Hirofumi Hotta of JPRS is on the “Panel for Study of IGCJ,” which deliberated especially about how to consolidate opinions in the IGCJ among the various participants who have different levels of understanding and views on each issue.

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

^{*4} ISOC: Internet Society
<https://www.internetsociety.org/>

^{*5} IGCJ: Internet Governance Conference Japan
<http://igcj.jp/> (in Japanese)

(6) Submission of Comment in Response to “Call for Comments on the Proposed Improvement of the Ministerial Ordinance, etc. Following the Enactment of the Law for Partial Amendment to the Telecommunications Business Act”

The “Law for Partial Amendment to the Telecommunications Business Act (Act No. 26 of 2015)” was promulgated on May 22, 2015. The law includes provisions on securing reliability in the DNS services for domain name resolution and states that the law is directed at ccTLD registries, geographic gTLD registries and large-scale DNS hosting providers.

The Ministry of Internal Affairs and Communications drafted the proposed improvement of the orders including the Ministerial Ordinance following the enactment of the law and called for public comment from November 11 to December 10, 2015. In response, JPRS submitted its opinion that this domestic law should not penalize businesses in Japan as opposed to foreign companies, and the government should communicate closely with industry to minimize the chances of misunderstanding in the interpretation and application of the law and the ordinance.

● https://jprs.co.jp/topics/2015/151208_2.html (in Japanese)

(7) Participation in Council of Anti-Phishing Japan

The Council of Anti-Phishing Japan*⁶ is a council tasked mainly with collecting and providing information on phishing and issuing alerts.

JPRS gave a presentation at the seminar held by the Council of Anti-Phishing Japan on August 19, 2015 and talked about the feature of domain name hijacking caused by unauthorized alteration of domain name registration data along with recent case examples, the principal damage and the countermeasures to be taken by registrants.

JPRS has been exchanging information with JPCERT/CC*⁷ which serves as the secretariat of the Council of Anti-Phishing Japan and became a member of the Council in December 2015 in order to engage more actively.

*6 Council of Anti-Phishing Japan
<https://www.antiphishing.jp/> (in Japanese)

*7 JPCERT/CC: Japan Computer Emergency Response Team Coordination Center
<https://www.jpcert.or.jp/english/>

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.

JPRS moved ahead with the transition of its system to an environment where it can accept applications filed by JP Registrars through authentication using digital certificates, and enhanced the stability and reliability of the service. In January 2015, JPRS launched the "Registry Lock Service" for JP Registrars that prevents the alteration of domain name information without registrants' authorization. In addition, JPRS expanded the definition of the organizations eligible for Organizational Type JP Domain Name to meet the increasing demands for domain names.

JPRS also tapped into its expertise as the JP domain name registry to provide information related to domain names and DNS and promote understanding at events and meetings held in Japan and overseas. In the international arena, JPRS built on the cooperation with the Internet community by signing the MoU with ICANN and JPNIC on collaboration for translating ICANN materials into Japanese and by engaging in the "JGP," the panel tasked with developing the rules for new TLD labels using the Japanese script. JPRS also actively contributed to the standardization of Internet technologies through activities including co-authoring by one of its engineers of the RFC that lists numerous terms used for DNS and presents the current definition of each term.

The year 2015 continued to see a number of incidents threatening the stable operation of DNS, such as domain name hijacking caused by unauthorized alteration of domain name registration data and DDoS attacks exploiting the mechanism of DNS, and several cases in which urgent and serious DNS vulnerabilities were detected. JPRS collaborated with other relevant organizations and responded to these problems by alerting the community with a summary of the incidents as well as countermeasures against them.

Recognizing the growing necessity of Internet-related education in schools, JPRS has distributed a free booklet on how the Internet works to educational institutions across Japan for six years in a row as part of its Internet-related educational support activities. As a result, the number of copies distributed in these six years exceeds 170,000. JPRS also provided free JP domain names to junior and senior high school students who participated in a Web contest. In addition, JPRS started the "JP Domain Name Usage Support Program," through which JP domain names could be registered for free, in order to collaborate with JP Registrars to help students who will play a role in the future of the Internet in Japan.

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 related to human resources and system 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. In addition, JPRS put ".jprs," launched its new gTLD for research and development, and initiated a joint research project on enhancing the fault-tolerance of DNS in collaboration with an Internet service provider.

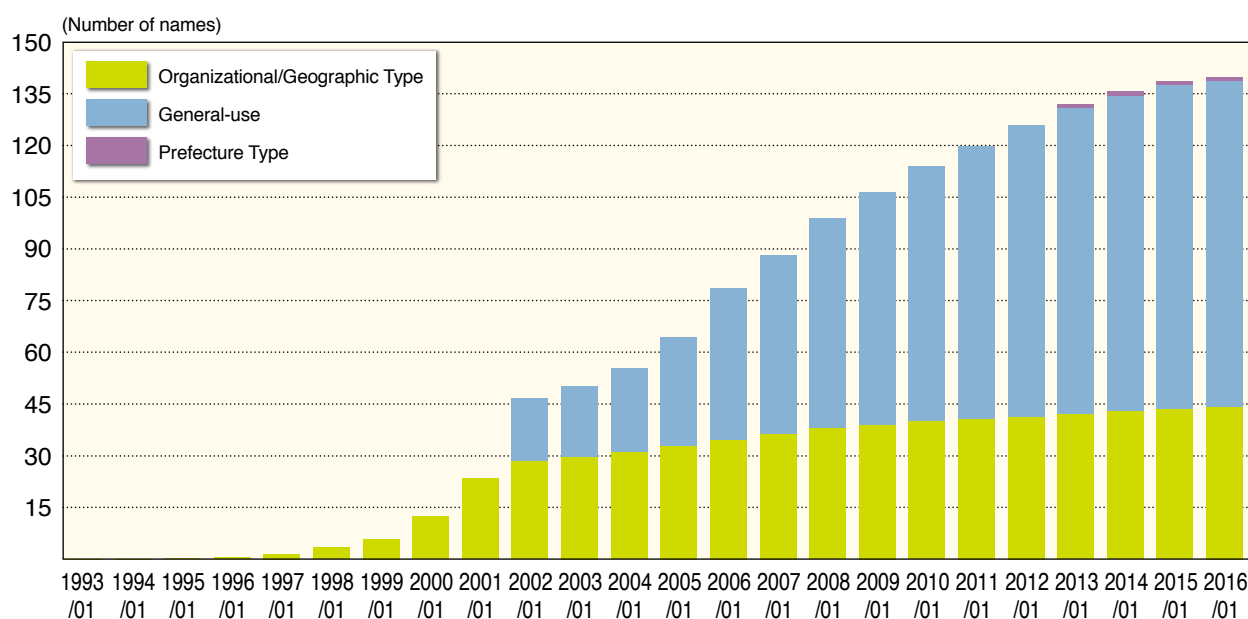
Going forward, JPRS plans to reinforce the disaster recovery capability of all of its services by implementing a more robust recovery scheme. It will also consolidate its operational infrastructure to improve the system monitoring function and security. In addition, JPRS will continue to enhance the security and reliability of its services and disseminate information on DNS technology by issuing advisories on vulnerabilities and security alerts 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, 2016, the cumulative number of registered JP domain names reached 1,410,247, an increase of 22,746 in one year.



(Number of names)

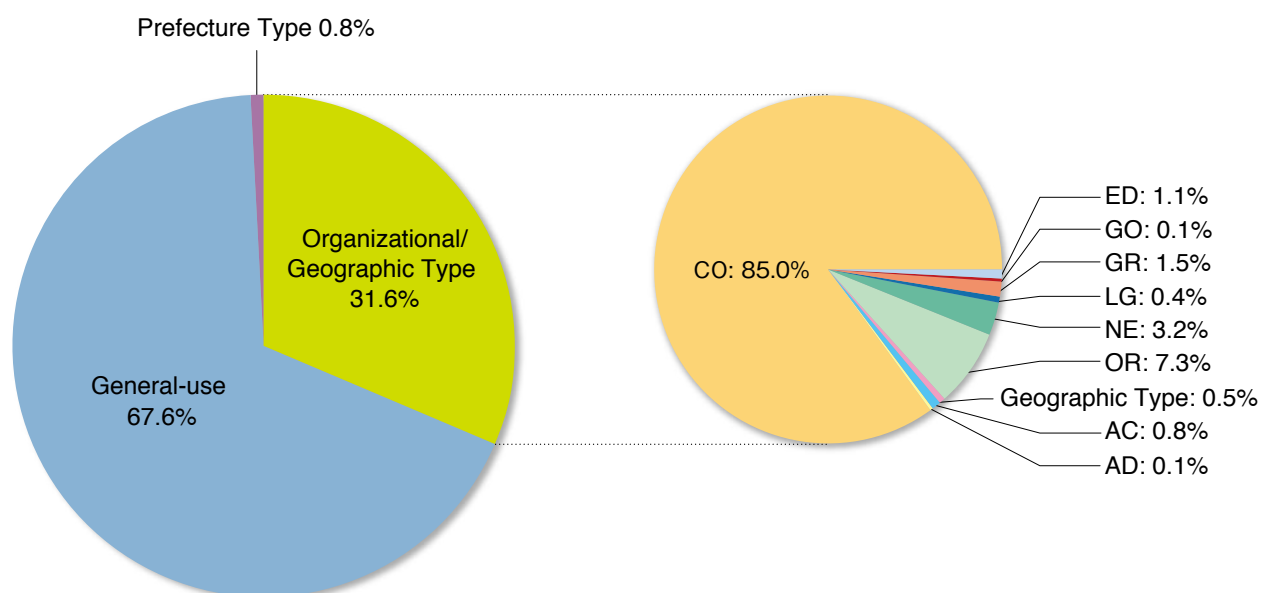
Month/Year	Organizational/ Geographic Type	General-use (Japanese domain name)	Prefecture Type (Japanese domain name)	Total
1993/01	953	—	—	953
1994/01	1,341	—	—	1,341
1995/01	2,206	—	—	2,206
1996/01	4,781	—	—	4,781
1997/01	15,477	—	—	15,477
1998/01	33,739	—	—	33,739
1999/01	58,549	—	—	58,549
2000/01	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
2016/01	446,004	953,041 (113,521)	11,202 (2,612)	1,410,247

*Please refer to "Domain Name Statistics" (<https://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, 2016



(Number of names)

JP Domain Name Types		1 Jan 2016 Number of Registrations	1 Jan 2015 Number of Registrations	Difference
Organizational/Geographic Type	AC: Higher education institution	3,561	3,525	+36
	AD: JPNIC Member	260	259	+1
	CO: Company	379,056	369,071	+9,985
	ED: Primary school, junior and senior high school	4,998	4,976	+22
	GO: Japanese government	594	600	-6
	GR: Group	6,570	6,807	-237
	LG: Japanese local authority	1,843	1,841	+2
	NE: Network service	14,214	14,710	-496
	OR: Corporation other than company	32,541	31,179	+1,362
	Geographic Type	2,367	2,422	-55
General-use (Japanese domain name)		953,041 (113,521)	940,427 (120,801)	+12,614 (-7,280)
Prefecture Type (Japanese domain name)		11,202 (2,612)	11,684 (3,117)	-482 (-505)
Total JP Domain Name Registration		1,410,247	1,387,501	+22,746

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

02・3

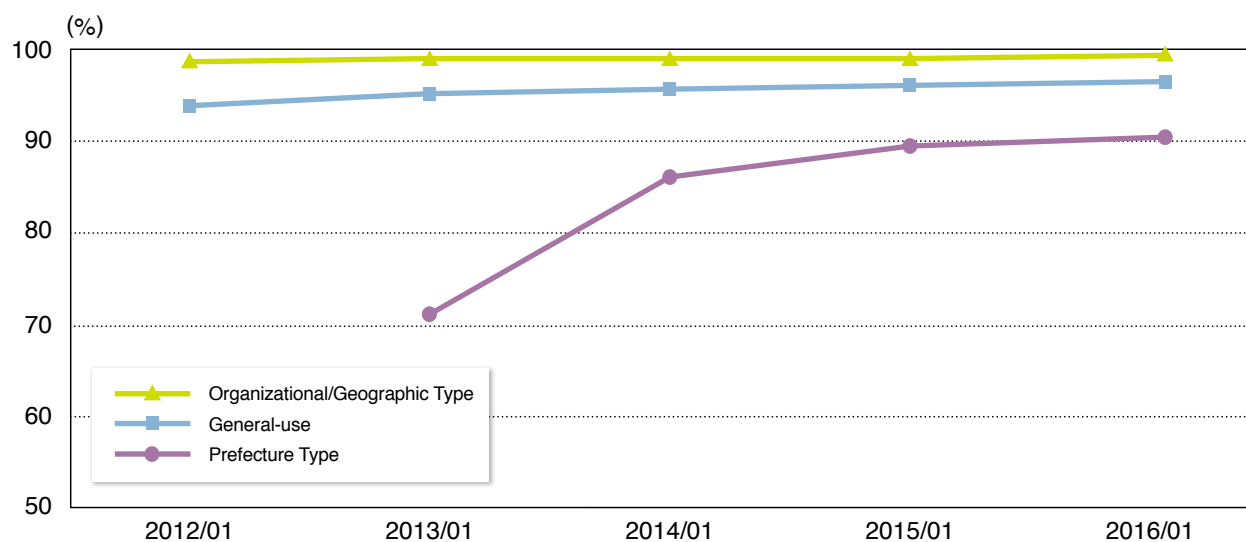
Number of JP Domain Name Registrations
by Prefecture

*As of January 1, 2016

Prefecture	Organizational/ Geographic Type	General-use	Prefecture Type
Hokkaido	2.8%	2.0%	2.0%
Aomori	0.5%	0.3%	0.6%
Iwate	0.4%	0.3%	0.3%
Miyagi	1.3%	0.8%	0.9%
Akita	0.4%	0.2%	0.4%
Yamagata	0.6%	0.3%	0.3%
Fukushima	0.8%	0.5%	0.6%
Ibaraki	1.4%	1.0%	0.5%
Tochigi	1.0%	0.5%	0.9%
Gunma	1.1%	0.7%	1.6%
Saitama	4.3%	2.7%	2.8%
Chiba	3.2%	2.3%	2.2%
Tokyo	32.6%	43.0%	41.3%
Kanagawa	6.7%	5.2%	3.8%
Niigata	1.2%	0.7%	0.8%
Toyama	0.7%	0.4%	0.6%
Ishikawa	0.7%	0.5%	0.4%
Fukui	0.5%	0.4%	0.2%
Yamanashi	0.5%	0.4%	0.4%
Nagano	1.4%	0.9%	0.9%
Gifu	1.2%	0.7%	0.9%
Shizuoka	2.2%	1.5%	1.2%
Aichi	5.4%	3.6%	2.9%
Mie	0.8%	0.5%	0.9%
Shiga	0.6%	0.5%	0.9%
Kyoto	2.0%	3.2%	6.7%
Osaka	9.5%	14.3%	8.9%
Hyogo	3.1%	2.4%	1.9%
Nara	0.6%	0.6%	1.5%
Wakayama	0.4%	0.3%	0.4%
Tottori	0.2%	0.2%	0.2%
Shimane	0.3%	0.3%	0.2%
Okayama	1.1%	0.9%	0.5%
Hiroshima	1.6%	1.0%	1.0%
Yamaguchi	0.5%	0.4%	0.3%
Tokushima	0.3%	0.3%	0.1%
Kagawa	0.5%	0.4%	0.4%
Ehime	0.6%	0.4%	0.5%
Kochi	0.3%	0.2%	0.3%
Fukuoka	3.1%	2.5%	4.2%
Saga	0.3%	0.2%	0.3%
Nagasaki	0.5%	0.4%	0.4%
Kumamoto	0.7%	0.6%	0.7%
Oita	0.4%	0.3%	0.6%
Miyazaki	0.4%	0.4%	0.4%
Kagoshima	0.5%	0.4%	0.6%
Okinawa	0.6%	0.5%	1.4%

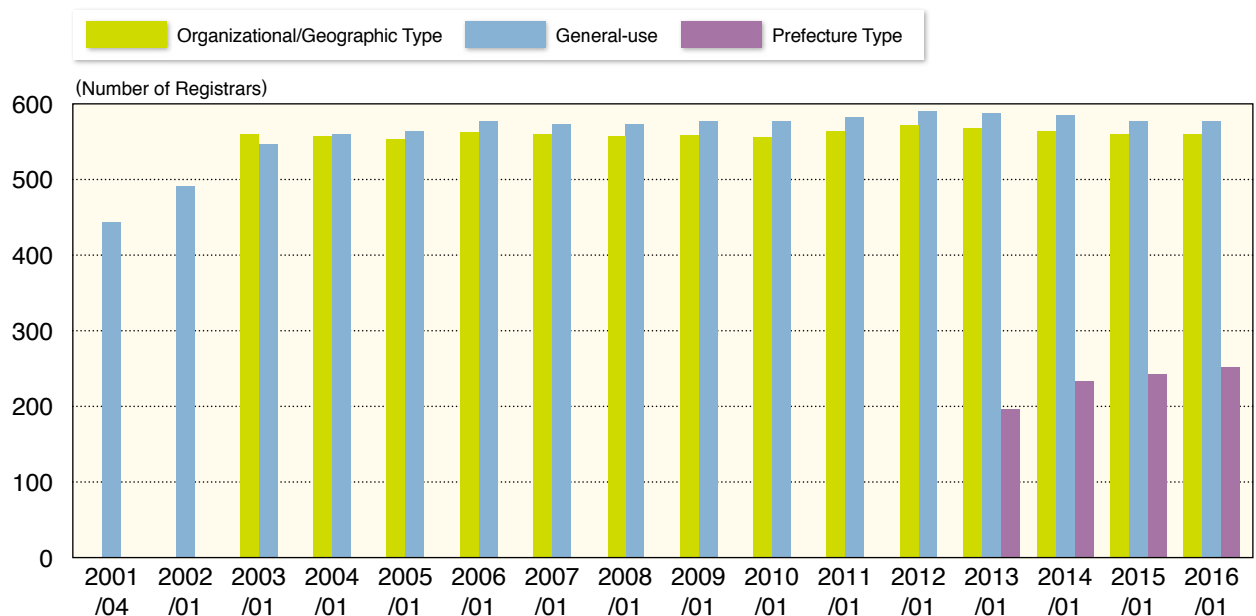
02 · 4 Transition of DNS Configuration Rate

*As of January 1, 2016



Month/Year	Organizational/Geographic Type	General-use	Prefecture Type
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%
2016/01	99.4%	96.3%	90.5%

02.5 Number of Accredited JP Registrars



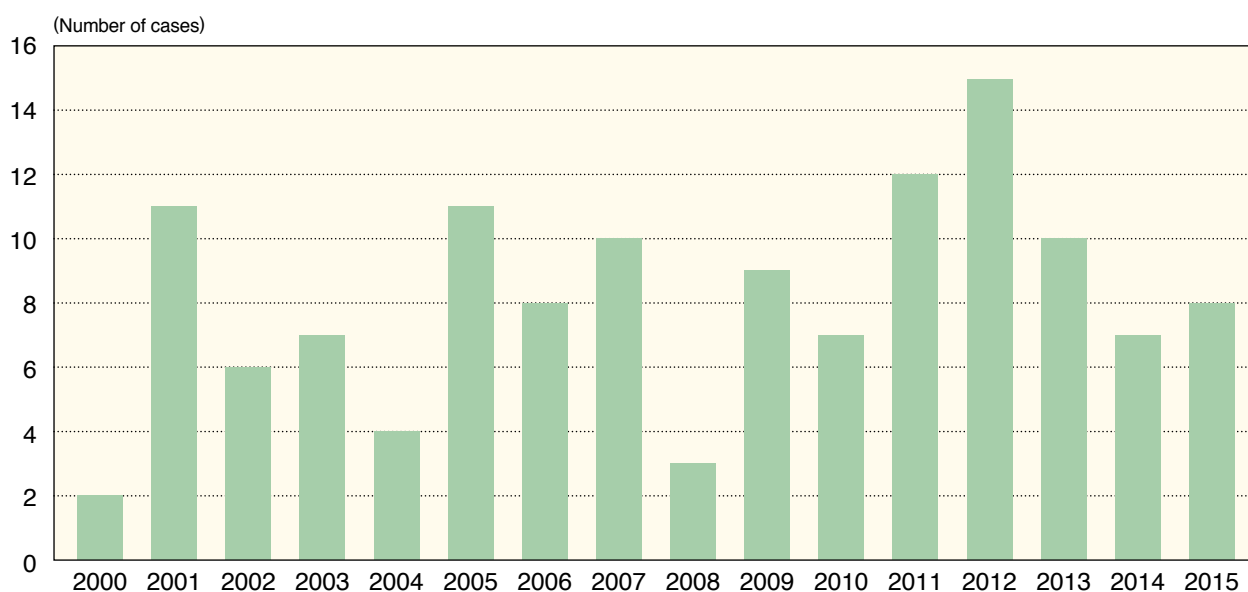
(Number of Registrars)

Month/Year	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
2016/01	560	576	252	1,388

*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
2015	8

*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://人名事典.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” (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.
	May	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.
	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.
2015	Jun.	JPRS signed an MoU with ICANN and JPRS on Japanese translation of ICANN materials.
	Jul.	JPRS announced a joint research project with ISPs to create a more fault-tolerant DNS environment.
	Oct.	The cumulative number of registered JP domain names exceeded 1.4 million.
		JPRS started providing JP Registrars with “JP Domain Name Usage Support Program for Students.”

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 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.
Method for appointing the members of the 8th JP Domain Name Advisory Committee	Dec. 16, 2014 JPRS-ADV-2014002	Feb. 23, 2015 JPRS-ADVRPT-2014002
Response as the registry to the misuse of JP domain names	Sep. 15, 2015 JPRS-ADV-2015001	(under consideration)

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

(2) Advisory Committee Meetings

Feb. 23 **51st JP Domain Name Advisory Committee meeting**

The committee agreed on the two draft advisories, “Method for appointing the members of the 8th JP Domain Name Advisory Committee (JPRS-ADVRPT-2014002)” and “Recommendation of the members of the 8th JP Domain Name Advisory Committee,” drawn up following the discussion at the 50th Advisory Committee meeting. The advisory and the recommendation were finalized as of February 23 and delivered to JPRS. The advisory recommended that the committee should add a representative of the government of Japan in addition to the existing six organizations or areas. Accordingly, the affiliation and title of the director of the Computer Communications Division, Telecommunications Business Department, Telecommunications Bureau of the Ministry of Internal Affairs and Communications, rather than the name of a specific individual, was nominated as the representative from the Japanese government, in view of the frequent personnel changes in the ministry.

JPRS described actual cases of malicious alteration of domain name registration information managed by registries or registrars alongside JPRS’s effort to address the problem of attacks against registries and registrars. The committee members expressed their views on the issues.

The status of discussion on Internationalized Domain Names (IDNs) in ICANN and the establishment of JGP were shared as the latest topics related to domain names, and the committee exchanged opinions.

Jun. 17 **52nd JP Domain Name Advisory Committee meeting**

It was reported that all the candidates who had been nominated in the recommendation delivered as of February 23 had accepted their appointment. Tatsuya Kawachi, director of the Computer Communications Division, Telecommunications Business Department, Telecommunications Bureau of the Ministry of Internal Affairs and Communications filled the seat as the committee member from the government, which had been nominated by affiliation and title. Then Shigeki Goto was elected and appointed as Chair, and Takashi Ooi as Vice Chair, of the 8th JP Domain Name Advisory Committee.

JPRS explained its response to the report “Method for appointing the members of the 8th JP Domain Name Advisory Committee” (JPRS-ADVRPT-2014002). The government of Japan became a member of the committee in addition to the existing six members, and accordingly the Rules for the JP Domain Name Advisory Committee were amended as of April 1.

JPRS outlined the status of JP Domain Name and the other TLDs including new gTLDs, the Law for Partial Amendment to the Telecommunications Business Act and discussion on IDN within ICANN. The committee members then exchanged opinions on what was reported in the presentation.

Sep. 15 **53rd JP Domain Name Advisory Committee meeting**

It was reported that Tatsuya Kawachi had resigned from the 8th JP Domain Name Advisory Committee due to a personnel change within the Ministry of Internal Affairs and Communications, and that Masahiko Yoshida was appointed as the successor.

The resignation of Kazushi Hayashi from the 8th JP Domain Name Advisory Committee as of June 19 was reported. The committee agreed to recommend Toru Maruhashi to JPRS as the successor. The committee finalized the recommendation on September 15 and delivered it to JPRS.

The JPRS Board of Directors submitted an inquiry entitled “Response as the registry to the misuse of JP domain names” (JPRS-ADV-2015001). The secretariat summarized the response of JPRS as the registry to the use of JP domain names for improper acts. The committee members presented their views on the issue.

Dec. 17 **54th JP Domain Name Advisory Committee meeting**

It was reported that Toru Maruhashi took over from Kazushi Hayashi as a committee member as of June 19.

Based on the deliberation in the 53rd Committee meeting and the views presented by the committee members afterwards, the secretariat summarized the overall discussion and reported on actual cases of misuse of JP domain names detected by JPRS. The committee members expressed their opinions on the subject.

03 · 3 Proposals and Presentations

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

Date	Title	At	Hosted by
Feb. 7	Latest Trend on DNS Security — Basic Countermeasures and Recent Attack Method (in Japanese)	SECCON 2014 National Contest Conference	SECCON 2014 Steering Committee(*1)
Feb. 11	JapaneseGP (JGP) update	ICANN 52	ICANN
Feb. 26	Introduction to JPRS — .JP ccTLD Registry	APTLD Fukuoka Meeting	APTLD
Feb. 26	ccNSO Update	APTLD Fukuoka Meeting	APTLD
Mar. 24	draft-fujiwara-dnsop-nsec-aggressiveuse-00	IETF 92 dnsop WG	IETF
Mar. 27	Branding Activities of .jp and JPRS	16th CENTR Marketing Workshop	CENTR
Apr. 14	ccNSO Update (in Japanese)	42nd ICANN Readout Session	JPNIC, IAjapan
Apr. 14	Update on New gTLD Program/GNSO Registry Stakeholder Group (in Japanese)	42nd ICANN Readout Session	JPNIC, IAjapan
Apr. 14	Root Zone LGR and Japanese Generation Panel (JGP) (in Japanese)	42nd ICANN Readout Session	JPNIC, IAjapan
Apr. 14	Report on ICANN Root Server System Advisory Committee (RSSAC) (in Japanese)	42nd ICANN Readout Session	JPNIC, IAjapan
Apr. 24	Report on IETF 92 — Topics Related to DNS (in Japanese)	IETF Update Meeting (92nd, Dallas)	ISOC-JP, JPNIC
May 9	Report on IETF 92 — Topics Related to DNS (in Japanese)	DNS-OARC 2015 Spring Workshop	DNS-OARC
May 10	Increase of Root and JP queries	DNS-OARC 2015 Spring Workshop	DNS-OARC
Jun. 1	Actions against DNS security issues which .JP faced	CENTR Jamboree 2015 Security Workshop	CENTR
Jun. 2	Registry-Registrar Relationships	CENTR Jamboree 2015 Security Workshop	CENTR
Jun. 5	Regarding Consolidation of Opinions in IGCJ (in Japanese)	7th IGCJ	IGCJ
Jun. 24	CJK Coordination Challenges and Solutions	ICANN 53	ICANN
Jun. 24	JapaneseGP (JGP) update	ICANN 53	ICANN
Jul. 1	CJK Cross-community coordination for RootLGR	APrIGF 2015, Macao	APrIGF
Jul. 1	Japanese Community Activities in RootLGR Development	APrIGF 2015, Macao	APrIGF
Jul. 1	How to Write RFCs/Internet Drafts (in Japanese)	1st IETF Study Meeting — Road to Yokohama	ISOC-JP, JPNIC
Jul. 20	draft-fujiwara-dnsop-nsec-aggressiveuse-01	IETF 93 dnsop WG	IETF
Jul. 24	DNS Summer Days Tutorial-Trotter (in Japanese)	DNS Summer Days 2015	DNSOPS.JP
Jul. 28	ccNSO Update (in Japanese)	43rd ICANN Readout Session	JPNIC, IAjapan
Jul. 28	New gTLD Program Update (in Japanese)	43rd ICANN Readout Session	JPNIC, IAjapan
Jul. 28	Report on ICANN Root Server System Advisory Committee (RSSAC) (in Japanese)	43rd ICANN Readout Session	JPNIC, IAjapan
Jul. 28	Root Zone LGR and Japanese Generation Panel (JGP) (in Japanese)	43rd ICANN Readout Session	JPNIC, IAjapan
Jul. 28	APrIGF 2015 Report (in Japanese)	8th IGCJ	IGCJ
Aug. 25	Recent Interest at IETF — Topics Related to IPv6 (TBD) (in Japanese)	Technical Committee on Internet Architecture	Technical Committee on Internet Architecture, EIC Communication Society
Aug. 27	Report on IETF 93 — Topics Related to DNS (in Japanese)	IETF Update Meeting (93rd, Prague)	ISOC-JP, JPNIC

Date	Title	At	Hosted by
Sep. 8	Actions against DNS security issues which .JP faced	APTLD Jakarta Meeting, APNIC40 Lightning Talk	APTLD, APNIC*(*2)
Sep. 8	ccNSO Update	APTLD Jakarta Meeting	APTLD
Sep. 9	Introduction to Universal Acceptance Session	APTLD Jakarta Meeting	APTLD
Sep. 24	Internationalization of Internet Identifier Strings (in Japanese)	9th ISOC-JP Workshop	ISOC-JP
Sep. 29	Rulemaking Activities in IDN TLD Character Strings (in Japanese)	9th IGCJ	IGCJ
Oct. 3	Idea: DNS over QUIC / zone transfer over QUIC or TLS/TCP	DNS-OARC 2015 Fall Workshop	DNS-OARC
Oct. 21	CJK Coordination Challenges and Solutions	ICANN 54	ICANN
Oct. 21	JapaneseGP (JGP) update	ICANN 54	ICANN
Oct. 31	DNS data collection and analysis	IRTF & ISOC Workshop on Research and Applications of Internet Measurements (RAIM) in Cooperation with ACM SIGCOMM	IRTF, ISOC
Nov. 18	New gTLD Program Update (in Japanese)	44th ICANN Readout Session	JPNIC, IAjapan
Nov. 18	ccNSO Update (in Japanese)	44th ICANN Readout Session	JPNIC, IAjapan
Nov. 19	Rulemaking Activities in IDN TLD Character String (in Japanese)	10th IGCJ	IGCJ
Nov. 19	Looking Back on the Panel for Study of IGCJ (in Japanese)	10th IGCJ	IGCJ
Nov. 19	Overview of DNSSEC (in Japanese)	Internet Week 2015 DNSSEC Tutorial	JPNIC
Nov. 19	Cross-Cutting Collaboration through Multi-Posting — Overview and Meaning of Technical Information Provided by JPRS: Lunch with DNS (in Japanese)	Internet Week 2015 Lunch Seminar	JPNIC
Nov. 19	JP DNS Update (in Japanese)	Internet Week 2015 DNS DAY	JPNIC
Nov. 19	DNS Update, Domain Name Overview (in Japanese)	Internet Week 2015 DNS DAY	JPNIC
Nov. 19	DNS Privacy (in Japanese)	Internet Week 2015 DNS DAY	JPNIC
Nov. 19	Recent Changes from the Aspect of JP DNS (in Japanese)	dnsops.jp BoF	DNSOPS.JP
Dec. 8	Report on IETF 94 — Topics Related to DNS (in Japanese)	IETF Update Meeting (93rd, Yokohama)	ISOC-JP, JPNIC

*1 SECCON 2014 Steering Committee
<http://2014.seccon.jp/committee.html> (in Japanese)

*2 APNIC (Asia Pacific Network Information Centre)
<https://www.apnic.net/>

03 · 4 Press Releases

Date	Title
Feb. 23	JPRS Supports “17th Japan Junior/Senior High School Web Contest” and Presents “Best Domain Naming Award (JPRS Special Award)” (in Japanese)
Mar. 26	JPRS Today Publishes “JP Domain Name Registry Report 2014” (in Japanese)
May 15	JPRS Distributes Free Graphic Comic-style Booklet on “How the Internet Works” to Educational Institutions in Japan for Six Years in a Row (in Japanese)
Jun. 23	JPRS signs MoU with ICANN and JPNIC on Japanese translation of ICANN materials
Jul. 13	JPRS to Launch a Joint Research Project with ISPs to Create a More Fault-Tolerant DNS Environment
Oct. 2	Cumulative Number of JP Domain Names Exceeds 1.4 Million (in Japanese)
Oct. 5	JPRS Starts Providing JP Registrars with “JP Domain Name Usage Support Program for Students” (in Japanese)

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

03 · 5 Provision of Technical Information Related to DNS

As the company supporting the basis of the Internet society through DNS and striving to ensure stable operation of the Internet, JPRS publishes technical information related to DNS such as warnings on the detection of DNS software vulnerabilities and other relevant alerts.

*Original materials are written in Japanese.

Date	Title
Feb. 19	Vulnerability of BIND 9.x (DNS Service Outage) (Published on February 19, 2015)
Apr. 27	Vulnerability of PowerDNS Authoritative Server and PowerDNS Recursor (DNS Service Outage) (Published on April 27, 2015, updated on May 7, 2015 and updated on July 8, 2015)
May 26	(Urgent) Facts and Countermeasures: Domain Name Hijacking through Unauthorized Alteration of Registration Information (Published on November 5, 2014 and updated on May 26, 2015)
Jul. 8	(Urgent) Vulnerability of BIND 9.x (DNS Service Outage) (Published on July 8, 2015)
Jul. 29	(Urgent) Vulnerability of BIND 9.x (DNS Service Outage) (Published on July 29, 2015 and updated on July 31, 2015)
Sep. 3	(Urgent) Vulnerability of BIND 9.x (DNS Service Outage) (Published on September 3, 2015)
Sep. 3	(Urgent) Vulnerability of BIND 9.10.2/9.9.7 (DNS Service Outage) (Published on September 3, 2015)
Sep. 3	Vulnerability of PowerDNS Authoritative Server (Decline of DNS Response Performance or DNS Service Outage) (Published on September 3, 2015)
Sep. 9	Publication of the Advance Notice on the Change of IP Addresses for h.root-servers.net (H-Root)
Nov. 11	Vulnerability of PowerDNS Authoritative Server (DNS Service Outage) (Published on November 11, 2015)
Dec. 2	Change of Settings in Response to the IP Address Change for h.root-servers.net (H-Root)
Dec. 11	(Urgent) Vulnerability of Microsoft Windows DNS (Remote Code Execution) (Published on December 11, 2015)
Dec. 16	Vulnerability of BIND 9.x (DNS Service Outage) (Published on December 16, 2015)
Dec. 16	(Urgent) Vulnerability of BIND 9.x (DNS Service Outage) (Published on December 16, 2015)

*For the latest information, please refer to the "Technical Information Related to DNS" (<https://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://〇〇〇.jp” and “△△△@〇〇〇.jp.” JPRS manages and administers a part of these addresses, namely, strings in the form of “〇〇〇.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 : 23 June 2016

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

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