



RNIDS
Serbian National Register
of Internet Domain Names

Report on the Transition from .yu to .rs

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Submitted to:

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1 Short History of .yu TLD¹

1.1 First Delegation

The .yu top-level domain was assigned in 1989 by IANA to the former Socialist Federative Republic of Yugoslavia (SFRY). The first administrator of the .yu TLD was known as the Yugoslav Network for Academic Community (YUNAC) and it was registered at the Institute Jožef Štefan in Ljubljana, Slovenia.

Following the breakup of SFRY at the beginning of the 90s Slovenia became an independent country and received its own ccTLD. Serbia and Montenegro formed a new federation in 1992 under the name of Federative Republic of Yugoslavia (FRY).

Since FRY proclaimed itself the legal successor of SFRY, IANA decided in 1994 to hand over the administration of the .yu top-level domain to Mirjana Tasić and her team at the University of Belgrade. This team came to be known as the Yugoslav Network Information Center (YUNIC).²

During the nineties YUNIC operated on a voluntary basis, without much support from the government and with very limited support of the local Internet community. Domain name registration was free of charge, but very restrictive – only legal entities could apply for a domain name and only one domain per applicant was allowed.

1.2 Reform Initiatives – Establishment of RNIDS

Towards the end of the 1990s, YUNIC became unable to cope with the exponential growth of the Internet and the resulting increase in domain name registrations. Even with their restrictive policy, YUNIC was still receiving more than 100 requests per day and their manual domain registration procedure took more than 20 days on average.

At the beginning of the 2000s, a number of reform initiatives were started and led by the local Internet community and supported by different government institutions. The first multi-stakeholder work group was formed in 2001, supported by the Federal Government Informatics Bureau. The group was tasked to perform a feasibility study for establishment of a new registry organization and liberalization of the domain name registration regime. The second group was formed in 2002 under the auspices of the

¹ A detailed history of the national domain name registry is available at <http://www.rnids.rs/en/node/31>

² YUNIC was legally operating under the auspices of the YUNET Association, registered at the School of Electrical Engineering, University of Belgrade

Serbian Agency for IT and Internet, and worked until mid-2003 on finishing the work initiated by the first group. Both groups conducted wide-scale public consultations during the course of their work. This was done using Web forums, mailing lists and public meetings.

Finally, in 2005, Mirjana Tasić of YUNIC initiated formation of the third work group, tasked with drafting the Articles of Association for a new organization that would replace YUNIC. This initiative was supported by the Serbian Ministry of Science and Environmental Protection, which also took an active role in the process.

The group finished drafting the Articles of Association in early 2006 and, after a period of public consultations in March and April, a public call was issued for convening a new organization to serve as the national domain name registry.

The new organization – Serbian National Register of Internet Domain Names³ (RNIDS) – was founded in June 2006⁴ by 17 organizations from the Serbian Internet community (major ISPs, telecom operators, academic institutions, NGOs etc), including the members of YUNIC. As of June 2009, RNIDS has 43 members.

RNIDS was established as an expert, non-governmental and not-for-profit fund, with the primary aim of “managing the national domain name registry to the benefit of all citizens of Serbia, while respecting the principles of quality, efficiency, independence and transparency”.

2 Preparations for the Transition from .yu to .rs

2.1 Memorandum of Understanding between .me and .rs Registries

In 2003, the Federal Republic of Yugoslavia was superseded by a different form of union between the states of Serbia and Montenegro. This entity became known as the State Union of Serbia and Montenegro,⁵ but it was short-lived and eventually ceased to exist, as Serbia and Montenegro became separate independent states in 2006.

³ In Serbian: Registar nacionalnog Internet domena Srbije

⁴ Formal registration of RNIDS was completed in February 2007

⁵ It is interesting to note that in 2003, ISO 3166/MA assigned 2-alpha code “CS” to the State Union of Serbia and Montenegro, but it was never used as ccTLD of this country

In September 2006, following the dissolution of the State Union of Serbia and Montenegro, ISO 3166/MA issued new 2-alpha codes to Serbia (“RS”) and Montenegro (“ME”).

In November and December of 2006, Serbian and Montenegrin domain name administrators agreed on a Memorandum of Understanding regarding the transition from .yu to .rs and .me TLDs.

Key points of the agreement were that:

- The Montenegrin registry should take over the responsibility of transitioning under .me TLD all domains previously registered under .cg.yu, .mn.yu and cg.ac.yu domains.
- RNIDS should take over the responsibility of transitioning under the .rs TLD all other domains previously registered under the .yu TLD.
- RNIDS should continue to manage the .yu TLD registry and maintain domains used by Montenegrin entities, until the final retirement of the .yu TLD.

2.2 Delegation of the .rs and Redelegation of the .yu TLDs to RNIDS

Shortly after the Memorandum of Understanding between Serbian and Montenegrin registry organizations was signed, in December 2006, the Government of Montenegro submitted to IANA a request for delegation of the .me TLD. RNIDS followed, in March 2007 with requests to IANA for redelegation of the .yu and delegation of the .rs TLD.

In the time following the receipt of the initial applications, IANA sought additional information and clarifications from RNIDS, in order to ensure that the established criteria for redelegation and delegation were met. Eventually, IANA put forward a proposal for the ICANN Board of Directors to approve both requests submitted by RNIDS.⁶

During the evaluation period, RNIDS representatives communicated to IANA and ICANN that the transition period from .yu to .rs should last at least two years following the start of public domain name registration under .rs TLD.

⁶ IANA report on delegation of the .rs domain and redelegation of the .yu domain is available at: <http://www.iana.org/reports/2007/rs-yu-report-11sep2007.html>

Finally, on September 11, 2007, the ICANN Board of Directors adopted the following resolutions:

- Resolved (07.76), that the proposed delegation of the .rs domain to the Serbian National Register of Internet Domain Names is approved.
- Resolved (07.77), that the .yu domain be redelegated to the Serbian National Registry of Internet Domain Names in a temporary caretaker capacity.
- Resolved (07.78), that the Serbian National Registry of Internet Domain Names be instructed to report their progress on decommissioning the .yu domain every six months to ICANN against a relevant set of metrics.⁷
- Resolved (07.79), that the Serbian National Registry of Internet Domain Names, and the Government of Montenegro, work to complete the transition from the .yu domain to the .rs and .me domains, so that it may be removed from the DNS root zone no later than 30 September 2009.⁸

The new .rs TLD was entered into the root-zone and became visible on the Internet on September 25, 2007.

2.3 Adoption of the New Framework for Registration of .rs Domains

The decision of the ICANN Board of Directors to set a fixed date for the end of the transition, rather than setting a fixed term following the date of .rs TLD landrush, put a lot of pressure on RNIDS to prepare the launch of .rs as soon as possible, in order to ensure the longest possible time for the transition.

At the end of October 2007, the General Assembly of RNIDS adopted a number of key rules, which laid out the new framework for domain name registrations in Serbia:

- Rules for Registration of .rs Domains
- Rules for Accredited Registrars of .rs Domains
- Rules for Conducting the Transition from .yu to .rs Domains
- Rules for Resolving Disputes Regarding .rs Domains

⁷ RNIDS publically presented its progress reports at the ICANN meetings in Delhi (February 2008), Paris (June 2008) and Cairo (November 2008)

⁸ Notes of the Board meeting discussion are available at <http://www.icann.org/en/minutes/prelim-report-11sep07.htm>

In the adopted framework, RNIDS was defined as the registry operator, while domain name registration tasks were handed over to the accredited registrars of .rs domains.

The Rules for Registration of .rs Domains liberalized domain name registration in the following address spaces of the .rs TLD registry:

- .rs: designated for all interested Serbian and foreign citizens and organizations
- .co.rs: designated for Serbian and foreign commercial entities
- .org.rs: designated for Serbian and foreign non-commercial organizations
- .edu.rs: designated for Serbian and foreign educational organizations
- .in.rs: designated for Serbian citizens only
- .ac.rs: delegated by RNIDS for use by Serbian academic community
- .gov.rs: delegated by RNIDS for use by Government of the Republic of Serbia

Also important were the Rules for Conducting the Transition from .yu to .rs Domains, which described phases of the transition process, defined rules for priority registration of .rs domains for .yu domain name registrants, and established the Commission for Resolving Transition Issues.

3 Transition Phase #1: Preparations for .rs Landrush

3.1 Initial Reservation of .rs Domain Names

According to the Rules for Conducting Transition from .yu to .rs Domains, RNIDS reserved a number of domain names within the .rs address spaces in the period before the .rs landrush. There were three classes of reservations, in the following order of priority:

- Priority #1 reservations (142 domains): Special purpose domains, reserved under .rs TLD and SLDs for use by RNIDS
- Priority #2 reservations (1.196 domains): Domains of special interest for the Republic of Serbia, reserved under the .rs TLD for use by Serbian state institutions

- Priority #3 reservations (around 40.000 domains): All names previously registered within the .yu registry, were reserved under the .rs TLD and .co.rs/org.rs/.edu.rs SLDs for registrants of the equivalent .yu domain names

All other .rs domains, not listed within one of the three classes of reservations, were available for immediate registration on the .rs landrush date.

3.2 Freeze of the .yu TLD Registry

By mid-February 2008, RNIDS finished the process of accrediting and training the first registrars of .rs domain names, and successfully concluded testing of its new automated domain registration platform.

On February 16, 2008, Managing Board of RNIDS set the date of .rs landrush to March 10, 2008 at noon. At the same time, it was decided that .yu TLD registry will be closed for new registrations ten days before the date set for .rs landrush.

On February 29, 2008 at noon, RNIDS stopped accepting new registrations requests for .yu domains. The final tally of .yu TLD registry was 38.772 domains:⁹

Address Space	Domains
.yu	47
.co.yu	32.634
.org.yu	5.058
.edu.yu	1.033
Total	38.772

4 Transition Phase #2: Transition from .yu to .rs

4.1 The First Six Months

According to the Rules for Conducting Transition from .yu to .rs Domains, during the first six months from the date of .rs landrush, only the registrants of .yu domains were

⁹ This number excludes domains registered in delegated address spaces – .gov.yu and .ac.yu. According to data received from administrators of the delegated address spaces, the final tally of .gov.yu domains was 225 and ac.yu was 26, bringing the total number of .yu domains to 39.023

allowed to activate the corresponding reservations in the .rs address spaces (Priority #3 reservations), in the following order of priority:

- Owner of example.yu was entitled to example.rs reservation
- Owner of example.co.yu/org.yu/edu.yu was entitled to example.co.rs/org.rs/edu.rs + example.rs reservations

In cases where different registrants were holding .co.yu, .org.yu and/or .edu.yu domains, the corresponding .rs reservation (example.rs) was awarded on a first-come first-served basis.

Any user of an actively maintained .yu domain, for which there was no active registrant (for instance, registering company ceased to exist, or was acquired by another company etc) or registrant could not be determined (due to poor record keeping of YUNIC), was able to submit a request for activation of the corresponding .rs reservations to the Commission for Resolving Transition Issues.

This three-member expert body, appointed by the Managing Board of RNIDS, was established in accordance with the Rules for Conducting Transition from .yu to .rs Domains.

The Commission used a number of different methods for determining and verifying ownership of the domain in question, including: reviewing the original registration documentation submitted by the applicant, reviewing invoices for Web hosting or other domain-related services, considering statements submitted by third-party witnesses, requesting from the applicant to prove control over the domain by modifying a Web page on the domain etc.

During the transitional period, the Commission received a total of 232 requests, out of which 226 were accepted and only 6 rejected. In 43 cases the Commission requested additional documentation or proofs from the applicants. No complaints (formal or otherwise) were received by RNIDS regarding the decisions made by the Commission.

Between March 10, 2008 and September 10, 2008, a total of 18.391 .yu reservations were activated:

Address Space	Domains
.rs	7.869
.co.rs	8.758
.org.rs	1.346
.edu.rs	418
Total	18.391

It may be interesting to note that more than half of preregistration requests during the first six months were received in the last 20 days of March – 33% and the first 10 days of September – 20%.

4.2 Expiration of .yu Reservations and Mini-Landrush

On September 10, 2008 at noon, six months after the launch of .rs domain, all unused reservations of .yu names in the corresponding .rs address spaces expired. Unrestricted public registration of these names was allowed on September 15, 2008 at noon.

Between September 15, 2008 and March 10, 2009, a total of 7.903 names, which previously existed within the .yu address spaces, were registered within the .rs address spaces, on a first-come first-served basis:

Address Space	Domains
.rs	4.142
.co.rs	2.947
.org.rs	629
.edu.rs	185
Total	7.903

This brought the total number of names moved from .yu to .rs during the first year of operation to 26.294. In summary, preregistration of names from .yu to .rs constituted 55.9% of total domain name registrations in the first year of .rs TLD registry operation:

Address Space	Domains	% of all .rs registrations in the first year
.rs	12.011	45,1%
.co.rs	11.705	68,8%
.org.rs	1.975	76,6%
.edu.rs	603	71,4%
Total	26.294	55,9%

5 Transition Phase #3: Preparations for Retirement of .yu TLD

5.1 'Flagging' of Active and Deletion of Inactive .yu Domains

Since the beginning of .yu TLD registry, domain registration was not charged and there were no periodical renewals of registrations. YUNIC also never instituted policies for maintaining quality of registrant data. Over the years, .yu TLD registry became littered with inactive or unused domains. Therefore, the first task of RNIDS, in the process of preparing .yu TLD registry for retirement, was to determine which .yu domains were actively used.

The Managing Board of RNIDS decided in July 2008 to start the process of 'flagging' the active .yu domains. This campaign started on November 3, 2008 and lasted for six months in total.

During this campaign, anyone could 'flag' any .yu domain name as active, by submitting a request to RNIDS through one of the accredited registrars of .rs domains.

In the first four months, between November 3, 2008 and March 3, 2009, a total of 2.769 .yu domains were "flagged" as active. On March 4, 2009 at noon, RNIDS removed from the DNS zone file all .yu domains which were not 'flagged' as active.

According to the previous decision of the Managing Board of RNIDS, domains removed from DNS on March 4, 2009 remained registered in the WHOIS database of .yu TLD registry and, during the following two months, it was still possible for anyone to submit a request for their reactivation.

Between March 4, 2009 and May 4, 2009, a total of 1.236 .yu domains were reactivated, bringing the total number of .yu domains “flagged” as active to 4.005:

Address Space	Domains
.yu	33
.co.yu	3.456
.org.yu	417
.edu.yu	99
Total	4.005

All inactive or unused .yu domains – 34.767 in total (89.7% of the total number of registered .yu domains) – were permanently deleted from the .yu TLD registry on May 5, 2009:

Address Space	Domains	% of all .yu registrations
.yu	14	29,8%
.co.yu	29.178	89,4%
.org.yu	4.641	91,8%
.edu.yu	934	90,4%
Total	34.767	89,7%

5.2 Current Situation and Outstanding Issues

As of June 2009, the total number of actively used .yu domain names was 4.266, including all remaining domains in the delegated address spaces – .gov.yu and .ac.yu.

It is evident that the majority of Serbian domain name registrants have switched from .yu to .rs domain names, but there is still a significant minority that still actively uses .yu domains.

Some of the most common reasons for continued use of .yu domains are (in no particular order):

- *Maintenance of mailing lists with a large number of subscribers with e-mail addresses on .yu domains.* Administrators of such lists reported difficulties with

migrating email addresses of their subscribers from .yu to .rs. Even though a part of the process can be automated, a lot of manual work, involving direct contact with the subscribers, is still required.¹⁰

- *Widespread use of .yu e-mail addresses as unique user identifiers on many public and private Web sites.* Many publically available Web applications, instant messaging services, social networks, payment processing services, single sign-on services etc. use e-mail addresses as primary unique identifiers of user accounts. Removal of the corresponding .yu domain could result in temporary suspension or permanent removal of the user account on such services. Also, password recovery and e-mailed confirmations (often required for changing the existing user information) would not be possible if the corresponding .yu domain is removed.
- *Embedding of URLs with .yu domains into a number of widely used software applications and hardware appliances,* such as mobile phones, software for electronic banking etc. In many such cases, it is not directly obvious to the users that their software and devices depend on being able to access Web services on .yu domains. Even more often, the users don't have the ability to easily remedy this problem, as it often involves upgrade of the software or reprogramming of the devices.
- *Large number of references to URLs with .yu domains in databases of Internet search engines.* Even when administrators of Web sites switch to .rs domain, continued use of the corresponding .yu domain may be necessary, because of the time required for automated content re-indexing by the Internet search engines. In order to facilitate and speed up this process, RNIDS signed a DNS zone access agreement for .yu and .rs domains with Google, which is the most used search engine in Serbia. This helped in the period following deletion of a large number of .yu domains. However, a very rough recent estimate¹¹ of the number of indexed pages on .yu domains, revealed results that were still quite high. As of June 2009, there were approximately 6.2 million indexed pages on .yu domains in Google's database (as opposed to around 69 million in September 2007).

¹⁰ This is due to the possibility given to .yu domain name holders to register the corresponding names directly under the .rs TLD and/or under some of the SLDs (.co.rs, .org.rs or .edu.rs) during the initial period of six months following the .rs landrush.

¹¹ Using "site:.yu" and "site:.rs" queries on www.google.com

- *Large number of direct links to URLs with .yu domains on individual Web pages scattered all over the Web.* Even after administrators switch over to .rs domain and their site is automatically re-indexed by the search engines, a lot of manual work remains on fixing the direct links to URLs with .yu domains on the individual Web sites all over the Web. This is tedious and very time consuming process, involving a lot of manual work (including analyzing of access logs, search engine results, contacting administrators of other Web sites and asking them to fix the links etc).
- *Primary contacts for a number of gTLD domains still use e-mail addresses on .yu domains.* This is a serious issue, because if these .yu domains are deleted, it would become impossible to get in touch with contacts for the gTLD domains in question. This could, in turn, lead to deactivation or even deletion of these domains. Given that gTLDs are beyond control of RNIDS, the Management Board of RNIDS calls upon ICANN to provide support in determining the exact scale of this problem, and help in spreading the word to gTLD contacts with e-mail addresses on .yu domains, regarding the need to update WHOIS data for their domains before the .yu TLD is removed from the root-zone.

6 Recommendations for ICANN Board of Directors

The .yu TLD registry, with around 40.000 domains, was in active use during the period of more than 15 years, until only 16 months ago.

The transition from .yu to .rs was by far the biggest ccTLD registry transition in the history of the Internet, to date. At the same time, the period left for completing the transition was one of the shortest.

RNIDS performed the transition, up to date, in an orderly manner, and in accordance with the rules and timetables which were adopted, published and promoted in the wider public well before the actual transition took place.

This transition also brought into light some new problems in the process of retiring ccTLDs, caused by the tremendous growth of the Internet and widespread deployment of interconnected and interdependent Web services.

Based on the evidence presented in this report, the General Assembly of RNIDS adopted the decision to ask the ICANN Board of Directors to prolong the life of .yu TLD in the root-zone for at least two more years, in order to allow for smooth completion of the transition process.

Furthermore, the Managing Board of RNIDS calls upon the ICANN Board of Directors and the relevant ICANN Supporting Organizations to develop a set of clear and transparent rules for managing the process of retiring ccTLDs and devote appropriate resources for providing better support to ccTLD managers in overcoming the negative effects of retiring ccTLDs on stable functioning of the Internet, within the affected community and the rest of the world.

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