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CONTRIBUTION

Source:	RIPE NCC
Title:	Updating instructions for operation of the domain e164.arpa
Purpose:	Discussion
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Abstract: The instructions for operation of the e164.arpa domain will be updated by the IAB. Subsequently the RIPE NCC, as operator, intends to initiate a process to review and update the current delegated domains registered to mitigate the large number of errors currently in place.

Introduction

The RIPE NCC operates the e164.arpa domain, which serves as the global root for the ENUM domain registrations. It operates this registry under instruction from the Internet Architecture Board (IAB), the details of which were agreed upon and put in place in August 2004[1].

Delegations from e164.arpa are based on the country codes in Recommendation E.164 and registration of these domains is coordinated with the relevant Member States by means of communication between the RIPE NCC as operator and the Telecommunication Standardization Bureau (TSB), which liaises with its contacts in the Member States regarding any requests for new registrations or updates to existing registrations.

Since the e164.arpa domain was put into operation, 57 country codes have been approved and delegated based on the procedure described in the current operating instructions.

A recent review of these delegations revealed that 20 of the current registrations have deteriorated over time and are no longer functional. This means that an attempt to resolve a label in one of those non-functioning sub-domains will result in failure, either because the name servers registered are no longer reachable or are not configured to be authoritative for the e164.arpa sub-domain in question.

Furthermore, there remains one delegation that was made on the basis of a temporary decision, which was not renewed in 2013. Currently the technical set-up for this domain is functioning and removal of this registration could lead to a disruption of service. As such, the decision was made to sustain this delegation pending a final decision.

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[1] https://www.ripe.net/manage-ips-and-asns/dns/enum/iab-instructions

A brief investigation also showed that several of the responsible registries no longer exist or that the technical and administrative contact persons registered in the RIPE Database cannot be reached via the contact details registered.

Discussion

The RIPE NCC notified the IAB of these problems and discussed how to best mitigate them. During this discussion it was found that the 2004 instructions fell short in two important ways: there has never been a defined procedure for removal of a delegation, initiated either by the current registry or by the responsible Member State; and the instructions do not allow for the operator to audit registrations or correct any problems with registrations in a more pro-active fashion.

These discussions have led to a new set of instructions, which have been agreed upon by the IAB and the RIPE NCC as operator of the e164.arpa domain. Along with a number of smaller corrections, the new instructions document:

- Text that allows for the deletion of existing delegations. Such a deletion can be initiated by the current registration holder or by the responsible Member State.
    o A deletion will be coordinated with the Member State via communications with the TSB, introducing a waiting period of at least 180 days to mitigate any sudden disruptions to service and allow time to reconsider or re-delegate the domain to a new registry.
- Instructs the operator (RIPE NCC) to perform periodic reviews of administrative details and technical set-up.
- Instructs the RIPE NCC to coordinate with the registry and TSB (which will liaise with the Member State) to resolve any problems, and, when such issues are unable to be resolved, to initiate a removal of the failed registration.
- Harmonises the procedure for the delegation and re-delegation of domains, strengthening the position of the relevant Member State in any decisions concerning those requests.

Upon final agreement of these instructions, the RIPE NCC will begin a review of all current delegations in e164.arpa and initiate corrective action as described above. Registered ENUM registries will be contacted and asked to resolve any issues. If the registry cannot be reached or fails to respond in a reasonable amount of time, the RIPE NCC will notify the TSB, who can coordinate with the Member State to take appropriate action to resolve the issues. Absent any action to correct the issues, the RIPE NCC will remove the delegation.

Proposal

We kindly ask this Study Group to take note of the proposed new instructions attached in Annex 1 and to review the Study Group's instructions to the TSB and ensure those instructions match the instructions agreed upon by the IAB and the RIPE NCC.

Furthermore, we seek the Study Group's assistance, together with the TSB and relevant Member States, to resolve the issues identified and, during the proposed clean-up, to work closely with the RIPE NCC to restore or remove the broken registrations.

We invite the Study Group to submit feedback on the new instructions, in particular with regard to the proposed timelines and procedures towards the TSB and Member States involved.

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IAB Instructions for operation of the domain e164.arpa

(draft) January 2019

1.1	A request for a delegation is to be sent to the RIPE NCC, to an email address that the RIPE NCC will define [3.1]. The request is to follow a template that the RIPE NCC will create. [3.2].
1.2	The RIPE NCC will then acknowledge the request to the sender.
1.3	The RIPE NCC will then announce the existence of the application in all of the following three ways:
1.3.1	On a public mailing list [3.3] that the RIPE NCC will define;
1.3.2	On a webpage [3.4] that the RIPE NCC will define;
1.3.3	Via electronic mail to ITU-T TSB [3.5].
1.4	The ITU-T TSB will acknowledge the receipt of the request and take appropriate action to verify the delegation request within a sixty-day period.
1.4.1	The RIPE NCC will wait for the ITU-T TSB to confirm the delegation. A delegation will only be made upon receipt of confirmation from the ITU-TSB.
1.4.2	If no confirmation is received or the ITU-T TSB explicitly objects, the requester will be informed that a delegation cannot be made and the request is denied.
1.5	Anyone who has concerns about the delegation should contact the ITU-T TSB.
1.6	All communication regarding the application for a specific delegation is to be publicly archived.

2. Notes

2.1	In its capacity as the IESG-designated expert for ENUM as specified in RFC 2916, the RIPE NCC will review the submission for completeness according to the template. If it is not complete, the RIPE NCC will notify the sender of that fact and request that it be

	completed. An incomplete application will not be taken into consideration for delegation or re-delegation.
2.2	Given that the RIPE NCC and the ITU-T TSB will request different information (technical and administrative information, respectively), it is recommended that the applicant send the request both to the RIPE NCC and the ITU-T TSB.
2.3	The ITU-T TSB acts on requests according to methods of its choosing. The ITU-T TSB must inform the RIPE NCC of a decision within a sixty-day period.
2.4	The ITU-T TSB can, at any time, directly instruct the RIPE NCC to delegate any E.164 country code (CC). This instruction from the ITU-T TSB must include a completed delegation request form.
2.5	If more than one request is received for the same E.164 CC before the delegation is made, the RIPE NCC will forward that information to the ITU-T TSB as a comment on the initial delegation request.
2.6	If a request is received for a CC that is already delegated, the second request will be forwarded to the ITU-T TSB. The ITU-T TSB should authenticate the request with the original E.164 resource assignee and inform the RIPE NCC of what action to take. Such action can either be to fulfil the request and re-delegate the resource to the new requester, or to deny the request. The RIPE NCC will take no action (other than forwarding the request to the ITU-T TSB) until and unless instruction is received from the ITU-T TSB.
2.7	Any actions referred to in (2.6) requested by the ITU-T TSB will be implemented by the RIPE NCC within 60 days of the RIPE NCC's reception of the request.
2.8	This document instructs the RIPE NCC in the handling of E.164 CC delegations.
2.9	In the case that a request is made for a domain that is not a valid CC, the ITU-T TSB will inform the RIPE NCC and the applicant that it will not proceed with the requested delegation, as the object is not recognised by the ITU-T TSB as a CC.
2.10	A request to revoke an existing delegation of an E.164 resource can be sent to the RIPE NCC by the original resource assignee. The RIPE NCC will exercise appropriate due diligence to authenticate this request and, upon successful authentication, will forward the revocation request to the ITU-T TSB and publish it in accordance with [1.3]. It will then enter a sixty-day waiting period.
2.10.1	Within the sixty-day period, a request for re-delegation can be made by filing a new delegation request. Such a request will be processed as per [2.6], restarting the associated sixty-day waiting period for the ITU-T TSB to approve the re-delegation.

2.10.2	If no request for a delegation is received within the sixty-day period, the RIPE NCC will proceed with revoking the delegation and remove any technical set-up associated with this delegation.
2.10.3	If the new delegation request is not approved or no response is received within the sixty-day period, the RIPE NCC will revoke the delegation as described under [2.10.2]
2.10.4	Upon revocation, the RIPE NCC will inform the ITU-T TSB and request it to remove any reference to the delegation from ITU-T webpages or other publications that may contain an overview of E.164 resources.
2.10.5	When the RIPE NCC is requested to restore a previously revoked delegation, the RIPE NCC will consider this to be a new request and process it accordingly.
2.10.6	When RIPE NCC receives notification via the TSB that a Member State has changed a previously granted approval, RIPE NCC will work with those to whom the delegation was made and the Member State to develop a plan for the existing ENUM delegations.
2.11	In case the technical set-up of an existing delegation becomes fully non-functional, and the assignee has no intentions to restore it (or is unreachable), the RIPE NCC will consider this to be a revocation request, which it will forward to the ITU-T TSB and will announce in accordance with [1.3].
2.11.1	After the ITU-T TSB has instructed the RIPE NCC to delegate a domain, the assignee must complete the necessary technical set-up in order for the delegation to be registered. In case the technical set-up is not completed after 180 days, and the assignee has no intentions to complete it (or is unreachable), the RIPE NCC will consider this to be a revocation request, which it will forward to the ITU-T TSB and will announce in accordance with [1.3].
2.12	The RIPE NCC will conduct periodical checks (at time intervals that the RIPE NCC will define) of approved delegations and will contact assignees to ensure the correctness of their DNS set-up, registration data and contact information.
2.12.1	In case the technical set-up of an existing delegation becomes non-functional, and the assignee has no intentions to restore it (or is unreachable), the RIPE NCC will consider this to be a revocation request, which it will forward to the ITU-T TSB and will announce in accordance with [1.3].

3. Summary List of Actions required by the RIPE NCC before delegations can be made

3.1	Set up an email address to which delegation applications and comments are to be sent.
3.2	Define the template that is to be filled out by the applicant.

3.3	Set up a mailing list with archiving and automatic subscription capabilities to which the RIPE NCC is to send announcements. Anyone is to be able to subscribe to this mailing list, but posting is to be restricted.
3.4	Set up a webpage with a URI that will be as long lived as possible so direct references can be made to the URI of the page itself.
3.5	In communication with the ITU-T TSB director, agree on the email address to which notifications will be sent to the ITU-T TSB.