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## RPS IANA Issues

### Status of this Memo

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### Abstract

RPS Security [2] requires certain RPSL [1] objects in the IRR to be hierarchically delegated. The set of objects that are at the root of this hierarchy needs to be created and digitally signed by IANA. This paper presents these seed objects and lists operations required from IANA.

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119.

### 1 Initial Seed

A public key of IANA needs to be distributed with the software implementations of Distributed Routing Policy System [3]. An initial set of seed objects are needed to be signed with this key. The following transaction (the transaction format is defined in [3]) contains these objects and is signed by this key:

mntner: mnt-iana  
descr: iana's maintainer  
admin-c: JKR1  
tech-c: JKR1  
upd-to: JKRey@ISI.EDU  
mnt-nfy: JKRey@ISI.EDU  
auth: pgpkey-7F6AA1B9  
mnt-by: mnt-iana  
referral-by: mnt-iana  
source: IANA

key-cert: pgpkey-7F6AA1B9  
method: pgp  
owner: iana-root (est. Nov 98) <iana@iana.org>  
fingerpr: 71 09 2E 37 71 B8 0A 9C 3B 28 98 B4 F1 21 13 BB  
certif: # this is the real IANA key  
+ -----BEGIN PGP PUBLIC KEY BLOCK-----  
+ Version: 2.6.2  
+  
+ mQCNazZJ52sAAAEAAJ//C01YnlaGuXyrC16V7FphkRvBmcNU22TP0zrKnKjnWjH5  
+ sJ5UQnG0pyhDc796gqBjY+lTLvPB9sFGJPWgxfNk2JQaxxLTD+tfqSsiURc/srpp  
+ XohFAVR/fez8M0ecISwvNpFh5VADuFuoNi7ZLu0wVTC4tM5RU0NJa8l/aqG5AAUR  
+ tCdpYW5hLXJvb3QgKGVzdC4gTm92IDk4KSA8awFuYUBpYW5hLm9yZz4=  
+ =sF4q  
+ -----END PGP PUBLIC KEY BLOCK-----  
mnt-by: mnt-iana  
source: IANA

repository: IANA  
repository-cert: PGPKEY-88BAC849  
query-address: <http://www.iana.org>  
response-auth-type: none  
submit-address: <http://www.iana.org>  
submit-auth-type: none  
expire: 0000 04:00:00  
heartbeat-interval: 0000 01:00:00  
admin-c: JKR1  
tech-c: JKR1  
mnt-by: mnt-iana  
source: IANA

```
as-block:      AS0 - AS65535
descr:         as number space
country:       us
admin-c:       JKR1
tech-c:        JKR1
status:        UNALLOCATED
source:        IANA
mnt-by:        mnt-iana
mnt-lower:     mnt-iana

inetnum:       0.0.0.0 - 255.255.255.255
netname:       Internet
descr:         ip number space
country:       us
admin-c:       JKR1
tech-c:        JKR1
status:        UNALLOCATED
source:        IANA
mnt-by:        mnt-iana
mnt-lower:     mnt-iana
```

timestamp: 19991001 01:00:00 +00:00

```
signature:
+ -----BEGIN PGP SIGNATURE-----
+ Version: 2.6.2
+
+ iQCVAwUB0Ad3YENJa8l/aqG5AQFVdAP9Ho2TSLGXiDi6v1McsKY4ob032EtP44Jv
+ tpNWiRRz47WIpMBmzUrQajBDNNXzww9r9mGC75Pg0MMwTDfvA47o6mnIGdT9XyZz
+ s9HLDG0qhklIjH0xXFDrBiz3u7eWEf3vmDCXt6UYg9lUtRKefkWtR5wD1Q1zDMSc
+ 7Ya7PE6X8SU=
+ =sAft
+ -----END PGP SIGNATURE-----
```

The above text has no extra white space characters at the end of each line, and contains no tab characters. All blank line sequences contain only a single blank line. The page break in the text is also a single blank line.

In this case, we assumed that IANA runs its own repository. However this is not a requirement. Instead, it may publish this transaction with an existing routing registry.

## 2 IANA Assignments

Each time IANA makes an assignment, it needs to create inetnum and as-block objects as appropriate and digitally sign them using the key in its key-cert object. For example:

```
as-block:      AS0 - AS500
descr:         arin's space
country:       us
status:        ALLOCATED
source:        iana
delegated:     arin
mnt-by:        mnt-iana

inetnum:       128.0.0.0 - 128.255.255.255
netname:       Internet portion
descr:         ip number space
country:       us
status:        ALLOCATED
source:        iana
delegated:     arin
mnt-by:        mnt-iana
```

### 3 Creating Routing Repositories

To enable a new routing repository, a repository object, a maintainer object and a key-cert object need to be created and digitally signed by IANA. For example:

```
mntner:        mnt-ripe
descr:         RIPE's maintainer
auth:          <ripe's choice>
mnt-by:        mnt-ripe
referral-by:   mnt-iana
admin-c:       . . .
tech-c:        . . .
upd-to:        . . .
mnt-nfy:       . . .
source:        RIPE

key-cert:      pgpkey-979979
method:        pgp
owner:         . . .
fingerpr:      . . .
certif:        # this key is for illustration only
+             -----BEGIN PGP PUBLIC KEY BLOCK-----
+             Version: PGP for Personal Privacy 5.0
+
+             . . .
+             -----END PGP PUBLIC KEY BLOCK-----
mnt-by:        mnt-ripe
source:        RIPE
```

```
repository:      RIPE
query-address:   whois://whois.ripe.net
response-auth-type: PGPKEY-23F5CE35 # pointer to key-cert object
response-auth-type: none
remarks:         you can request rsa signature on queries
remarks:         PGP required on submissions
submit-address:  mailto://auto-dbm@ripe.net
submit-address:  rps-query://whois.ripe.net:43
submit-auth-type: pgp-key, crypt-pw, mail-from
remarks:         these are the authentication types supported
mnt-by:          maint-ripe-db
expire:          0000 04:00:00
heartbeat-interval: 0000 01:00:00
...
remarks:         admin and technical contact, etc
source:          RIPE
```

This very first transaction of a new repository is placed in the new repository, not in the IANA repository.

#### 4 Security Considerations

Routing policy system security document [2] defines an hierarchical authorization model for objects stored in the routing registries. This document specifies the seed objects and the actions need to be taken by IANA to maintain the root of that authorization hierarchy.

#### 5 IANA Considerations

This whole document is for detailed consideration by IANA.

#### References

- [1] Alaettinoglu, C., Bates, T., Gerich, E., Karrenberg, D., Meyer, D., Terpstra, M. and C. Villamizar, "Routing Policy Specification Language (RPSL)", RFC 2622, June 1999.
- [2] Villamizar, C., Alaettinoglu, C., Meyer, D., Murphy, S. and C. Orange, "Routing Policy System Security", RFC 2725, December 1999.
- [3] Villamizar, C., Alaettinoglu, C., Govindan, R. and D. Meyer, "Distributed Routing Policy System", Work in Progress.

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