RIPE ncc

The Need

- CIDR
  - Finally deployed
  - Class has no meaning any longer

CIDR assignments work in current database, but...

... was NOT classless

RIPE ncc

Representations

- classful net
- classful range
- prefix length
- network mask
- classless range

RIPE ncc

Representations

- classful net
  - Representation

    `192.1.1.0`
  - Range covered

    `192.1.1.0–192.1.1.255`
  - dotted quad with zero(s) in host part
  - just like now in database

RIPE ncc

Representation

- classful range
  - Representation

    `192.1.1.0 – 192.1.2.0`
  - Range covered

    `192.1.1.0–192.1.2.255`
  - just like current range in database

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Representation

- prefix length
  - Representation
    - `192.1.1.0/24`
    - `192.1.128.0/17`
  - Range covered
    - `192.1.1.0–192.1.1.255`
    - `192.1.128.0–192.1.255.255`
  - commonly used notation

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Representation

- network mask
  - Representation
    - `192.1.1.0 255.255.255.0`
    - `192.1.128.0 255.255.128.0`
  - Range covered
    - `192.1.1.0–192.1.1.255`
    - `192.1.128.0–192.1.255.255`

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Representation

- classless range
  - Representation
    - `192.1.1.0 > 192.1.1.255`
    - `192.1.128.0 > 192.1.255.255`
  - Range covered
    - `192.1.1.0–192.1.1.255`
    - `192.1.128.0–192.1.255.255`
  - NEW notation (“>”)
  - host end is filled

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Representation

- classless range
  - Separator indicates difference in semantics

```
192.1.1.0 - 192.1.2.0       = 512 hosts
192.1.1.0 > 192.1.2.0       = 257 hosts
```

RIPE ncc

inetnum object

- purely for assignment information
- representations used:
  - classful net
  - classful range
  - classless range
- accepted BUT rewritten
  - prefix length
  - network mask
  - rewritten to classless range!

```
192.87.45.0/24      192.87.45.0 > 192.87.45.255

192.1.128.0 255.255.128.0
                    192.1.128.0 > 192.1.255.255
```


RIPE ncc

route object

- purely for routing information
- representation used:
  - prefix length
- accepted BUT rewritten
  - all others IF possible

```
192.87.45.0                       192.87.45.0/24
192.1.128.0 - 192.1.255.0         192.1.128.0/17
192.1.128.0 > 192.1.255.255       192.1.128.0/17
192.1.128.0 255.255.128.0         192.1.128.0/17

192.87.45.0 - 192.87.46.0                 ERROR
192.1.128.0 > 192.1.130.255               ERROR
```

- non contiguous masks NOT allowed