The Benefits of Using Routing Registry

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Overview

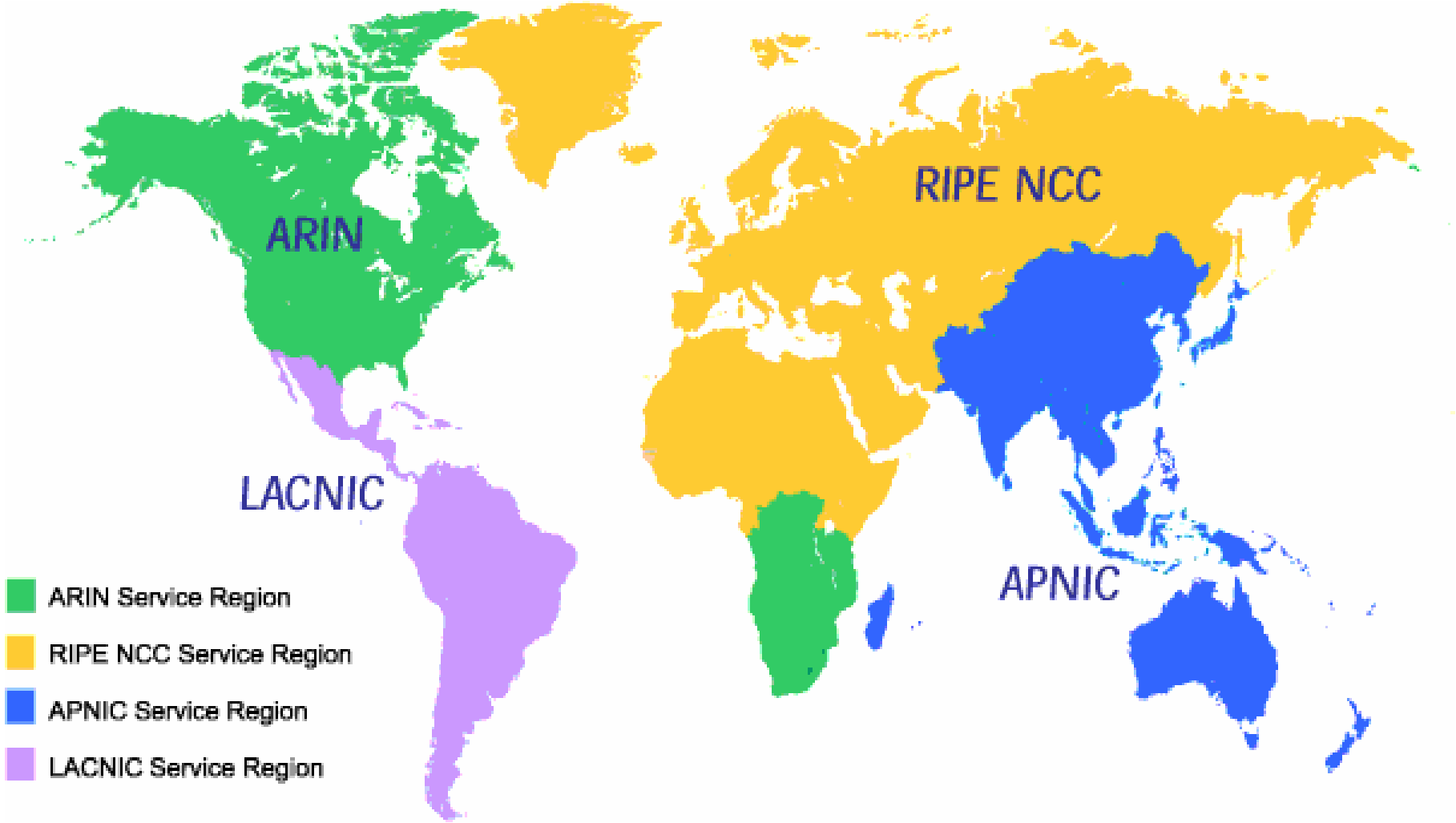
- Intro: RIPE and RIPE NCC
- Why document routing policy
- RPSL
- IRRToolset
- Upcoming Routing Registry courses

RIPE and RIPE NCC

- Réseaux IP Européens (1989)
  - Collaborative, open community for Internet operators, administration and development

- RIPE Network Coordination Centre (1992)
  - Independent not-for-profit membership organisation
  - One of 4 Regional Internet Registries
  - Member services: distributing IP addresses, ASN, reverse DNS delegation, training courses
  - Public services: whois DB, K-root, ENUM, RIPE support

Service Regions



Why Document Routing Policy?

- Recreate your policy in case of loss of hardware/administrators
  - Less downtime
- Scaling
- Troubleshooting

Why Document in RPSL?

- Abstract
  - Not vendor specific
- Global view, not router specific
- Well Known
- Tools available
  - router configuration
  - expertise built into tools

Why Document in IRR?

- Required by some Transit Providers
- Required by some Exchange Points
- Allows peers to automatically update filters
  - For your announcements
  - Consistent information between neighbours

- Good housekeeping

Why Document in RIPE DB?

- Convenience
  - inetnums already there
  - aut-num already there
  - maintainer already there
  - person objects already there
- Database most likely used by your peers

RIPE Whois Database

- Public Network Management Database
  - Routing Registry - a subset of the RIPE DB
  - Contains routing information

- RIPE RR is part of the Internet Routing Registry:
  - http://www.irr.net/
  - Distributed databases that mirror each other

Routing Policy Specification Language

- Object-oriented language
  - Structured whois DB objects
- Describes routing policy
  - Routes, AS numbers…
  - Relations between BGP peers
- Established standard:
  - Routing Policy Specification Language (RFC-2622)
  - Routing Policy System Security (RFC-2725)
  - Using RPSL in Practice (RFC-2650)

RPSL: aut-num Policy Syntax

```
import:
        from <peering> [action <action>] ;
        accept <filter>
export:
        to <peering> [action <action>] ;
        announce <filter>
```

- <peering>: AS or as-set
- <filter>: set of prefixes
  - ANY ; AS12345; AS-set; {0.0.0.0/0};
- <action>: med, communities, pref

Back to Router Configuration: Tools

- IRRToolset
  - Maintained by ISC
  - http://www.ripe.net/projects/irrtoolset/
- Tools for DB objects
  - AOE
  - ROE
- Tools for router configuration
  - RtConfig
  - peval

Automated Filters

- Problems:
  - Bogon address space used as source for spamming, DDoS, probes…
  - Leaking “martians” & bogons due to configuration errors
  - Leaking ranges from others => black-holing them
- Secure BGP Template
  - http://www.cymru.com/Documents/secure-bgp-template.html
- “AND NOT fltr-bogons”
  - Maintained bogon filter-set

RR courses coming up

- Helsinki, Finland (hosted by Cygate) -12 November 2004
- Damascus, Syria -22 November 2004
- Amsterdam, the Netherlands -17 December 2004
- Berlin, Germany -14 January 2005
- Barcelona, Spain -18 March 2005
- Amsterdam, the Netherlands -15 April 2005
- St. Petersburg, Russian Federation -22 April 2005

- Questions?