RPKI @ cr!x

RIPE NCC::Educa Routing Security
April, 2018

Mauricio Oviedo
NIC Costa Rica

moviedo@nic.cr
RPKI @CRIX: Our organization

Not for profit organization

Registry for .cr TLD since 1990

Administrator of CRIX, the National Neutral Internet Exchange Point of Costa Rica

www.nic.cr
RPKI @CRIX: Our organization

4 years of operation

27 members

4 CDNs

Located in San José, CR

Members of LAC-IX and EURO-IX

www.crix.cr
RPKI @ CRIX: Agenda

- Implementation process
- Current status
- Operational challenges
- Future plans
RPKI @CRIX: Splitting the process

1. Informational-only System

2. Route Origin Validation
RPKI @CRIX: Implementing since the beginning

CRIX start date: July, 2014

- Implementation based on IETF draft-fmejia-opsec-origin-a-country-02
- RPKI Informational-only system + BGP communities with validity status
- Monitoring of IX members announcement status
- RPKI training for IX members with LACNIC and ISOC collaboration
RPKI @ CRIX: Implementing since the beginning

CRIX start date: July, 2014

Source: http://labs.lacnic.net/site/rpki-en-el-ixp-costarica
RPKI @CRIX: Implementing since the beginning

CRIX start date: July, 2014

Source: http://labs.lacnic.net/site/rpki-en-el-ixp-costarica
RPKI @CRIX: Time to move forward…

Why not?
RPKI @CRIX: Creating an island of trust

ROV start date: May, 2015

- RPKI transition from informational-only system to ROV
- Invalid announcements are discarded at the RS
- Transition coordinated with IX members to minimize impact
- ROA creation and validation included in the setup of new members
RPKI @CRIX: Current prefixes status

* Not founds: primarily DNS/CDN operators and end customers
* No invalid announcements
RPKI @CRIX: Operational challenges

- Benefits are not widely known
- Non-Technical RIR contacts
- Regional IT Departments
- New for most members
- ISP techs rotation
- Knowledge
### RPKI @CRIX: Continuous improvement

<table>
<thead>
<tr>
<th>Future plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automation of invalid route detection and notification</td>
</tr>
<tr>
<td>Implementation of Bird RS for platform diversity</td>
</tr>
<tr>
<td>Collaborate with CR non-IX ASNs to deploy RPKI</td>
</tr>
<tr>
<td>Development of local workshop for periodic knowledge updates</td>
</tr>
</tbody>
</table>
RPKI @CRIX: Wishlist

RIRs and ISPs

Provide testing beds for ROA and certificate creation

Include the ROA generation and/or instructions as part of the initial resource assignment

Use RPKI as an alternative for LOAs

Keep doing this kind of webinars
RPKI @CRIX: Road to implementation

- Choose a RS with RPKI support
- For IXPs, get members involved since the beginning
- Split the process into phases
- Keep training your local community