IPv4 Hijacking: Our Experiences

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RIPE 68| Warsaw - Poland | 14 May 2014

In This Talk

- Our definition of hijacking
- Background
- Common approaches by hijackers
- RIPE NCC processes abused and forged documentation
- Investigations and interventions
- Common difficulties and typical responses
- Protecting your resources

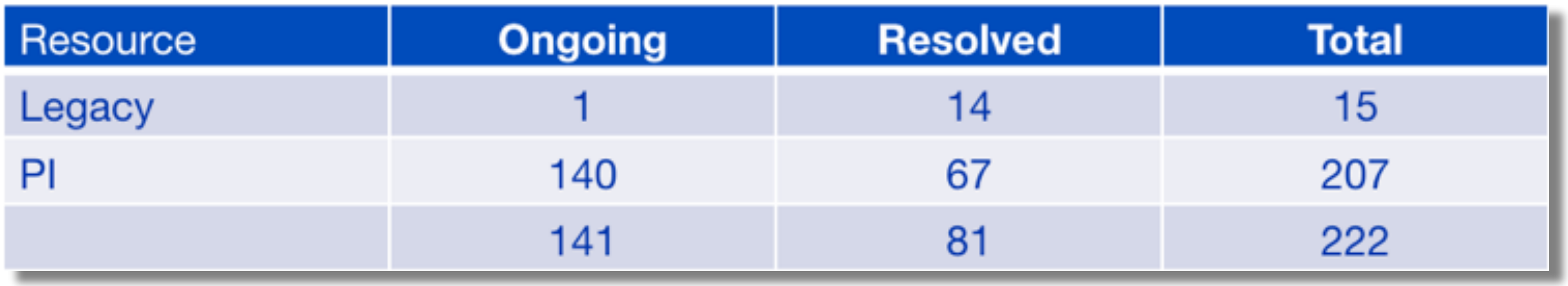
Our Definition of Hijacking

“Taking control of *issued* Internet number resources under false pretences.”

- Re-registered to hijackers or another (innocent) organisation
- Addresses have economic value due to IPv4 scarcity

Hijacking: Background

- 12 September 2012: the RIPE NCC starts allocating from the last /8
- Since then, the RIPE NCC sees an increase in hijackings of **apparent** unused and/or abandoned address space



Resource	Ongoing	Resolved	Total
Legacy	1	14	15
PI	140	67	207
	141	81	222

Researched and Well Prepared

The hijackers' approach:

- Research company histories and provide paper trails to demonstrate changes in business structure
- Conduct BGP test announcements to check if addresses are unused
- Re-register expired domain names to make email change requests look legitimate
- Copy websites, with identical pages hosted on (almost) identical domain names

RIPE NCC Processes Abused

- RIPE Database maintainer password resets
- Company acquisitions or organisation name changes
- Posing as resource holders looking for a sponsoring LIR for 2007-01 compliance

Forged Documentation Submitted

- Faked IDs
- Faked company registration papers
- Forged signatures of real people on contracts
- Forged stamps and signatures of notaries and resource holders

Why We Look Closer

- A resource holder sends us a complaint or abuse report
- An experienced IPRA notices something out of the ordinary
- Follow-up from existing investigations: one case often leads to another

How We Investigate

- We check changes in company structure:
  - Public records
  - National registries
- We contact former and current resource holders (where possible):
  - Contact people and organisations found on documentation
  - Phone calls, sending emails and faxes
  - Using other contact information beyond what was provided

When We Find Something Wrong

- We revert all changes immediately
- Allow time to support their claim to the address space
- Resources are de-registered if no legitimate holder found (in 2007-01 cases)
- Where member involvement can be proven: closure of LIR account and de-registration of LIR resources
- Report to authorities where appropriate
- We work with the resource holder to protect their resources

Common Difficulties

- The resource holder expects immediate action while we are investigating
- It can be difficult to find and contact the resource holder in question
- We see things happening but we cannot take action (yet)
- We can catch them — but we can't stop them from trying again (they can open a new RIPE NCC membership account)
- **No effective penalty and lots to gain**

Typical Responses

- Silence…
- “We are a victim of fraud”
- Denial and anger:
  - IPRAs are insulted and threatened with lawsuits against them personally and/or the RIPE NCC
  - Threats “to come to the office and…”
  - IPRAs’ names are spread on mailing lists and fora
- Arbitration is offered but not taken

Finding The Right Balance

- We are trying to maintain a relationship that is based on trust
- We try to find a balance between ensuring that we are talking to the legitimate holder vs being overly cautious or inflexible:
  - End Users might find the RIPE NCC becoming more strict in our verification requirements as a result
  - Recent mailing list discussion on due diligence processes
  - We need understanding and support from the community — **we are trying to protect your resources**

What You Can Do

- Protect your resources against hijacking by making sure your RIPE Database objects and contact information are up to date
- If acquiring resources, ensure you are in contact with the legitimate holder or representative
- If you need help, or think your resources may have been hijacked, contact: reg-review@ripe.net

https://www.ripe.net/lir-services/resource-management/address-hijacking-in-the-ripe-ncc-service-region

Questions?