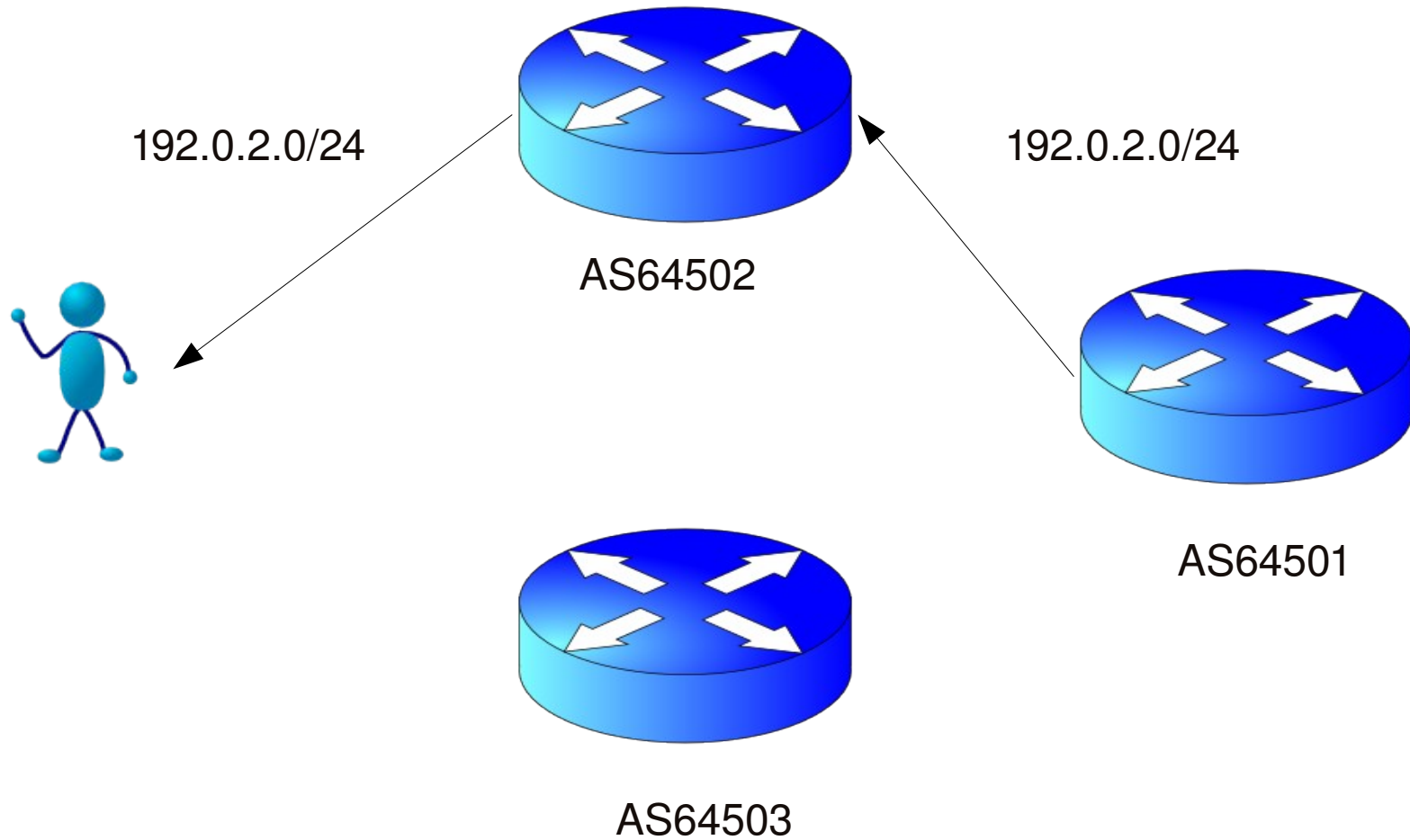# IRRToolSet

Software

Community

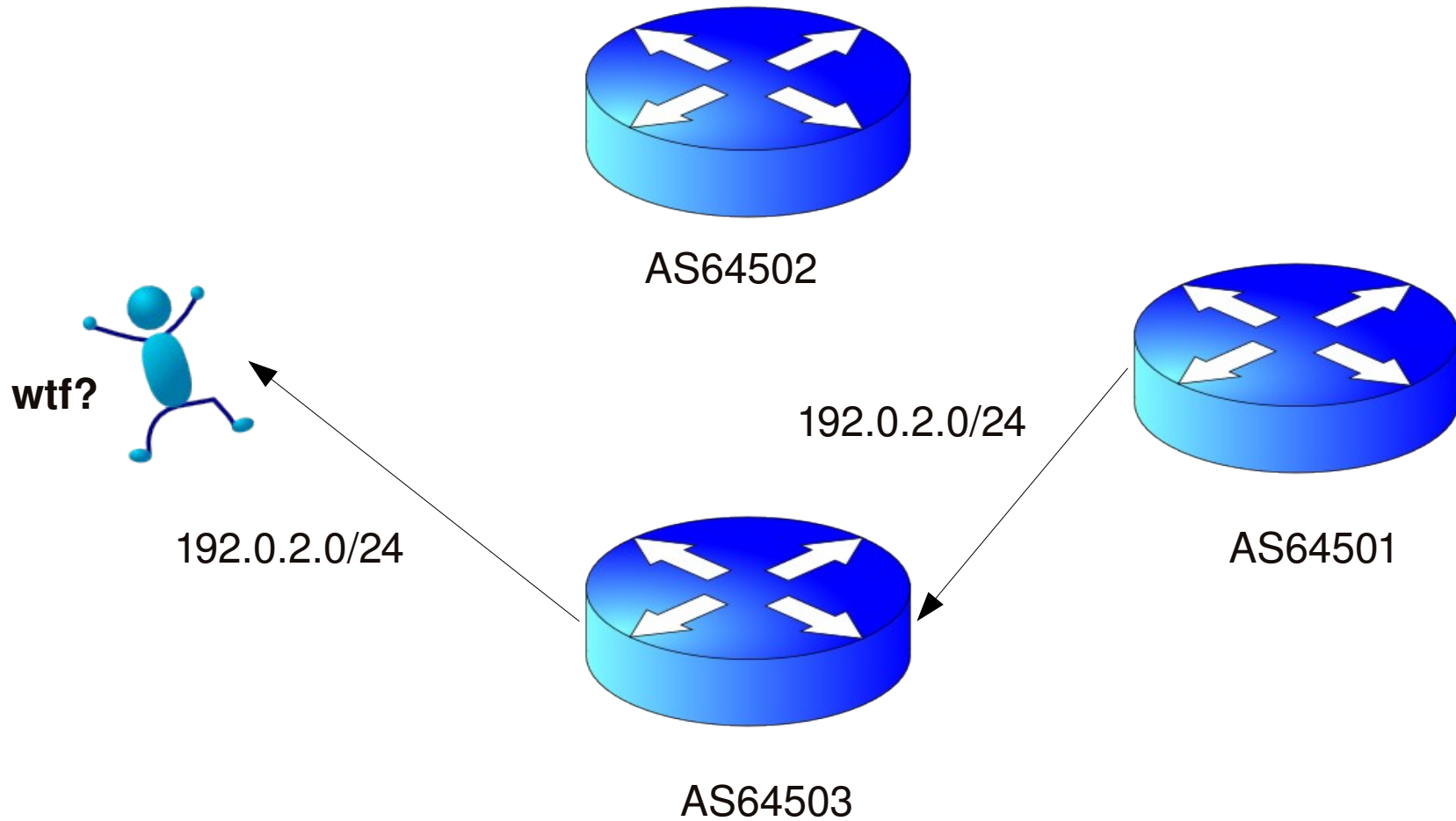# A Tale in Two Parts

1. Brief Overview of IRR and the IRRToolSet

2. Recent Developments with the IRRToolSet

An Example - Starting

192.0.2.0/24

AS64502

192.0.2.0/24

AS64501

AS64503

An Example - Changed

AS64502

wtf?

192.0.2.0/24

192.0.2.0/24

AS64501

AS64503

Internet Routing Registry

- Something to help BGP administrators

- Public documentation of *routing policy*

  – AS originating routes

  – AS Peering policy: routes exported, routes imported

- Vendor-neutral language

- Accessed via WHOIS

- Run by... anyone!

  – RADB, RIPE NCC, APNIC, NTTCOM, ...

Actual Use

```
shane@shane-macbook-pro:~$ whois -h whois.ripe.net -T aut-num as112

aut-num:        AS112
as-name:        ROOTSERV
descr:          Root Server Technical Operations Assn
descr:          See: http://www.as112.net/
descr:          $Id: aut-num:AS112,v 1.5 2007/09/23 06:08:02 liman Exp $
import:         from AS3277 action pref=100; accept ANY
import:         from AS3292 action pref=100; accept ANY
import:         from AS8763 action pref=100; accept ANY
import:         from AS8674 action pref=100; accept ANY
import:         from AS12041 action pref=100; accept ANY
import:         from AS12779 action pref=100; accept ANY
import:         from AS15431 action pref=100; accept ANY
import:         from AS16150 action pref=100; accept ANY
export:         to AS3277 announce AS112
export:         to AS3292 announce AS112
export:         to AS8763 announce AS112
export:         to AS8674 announce AS112
export:         to AS12041 announce AS112
export:         to AS12779 announce AS112
export:         to AS15431 announce AS112
export:         to AS16150 announce AS112
admin-c:        LL10-RIPE
tech-c:         LL10-RIPE
mnt-by:         DGIX-MNT
source:         RIPE # Filtered
```

IRRToolSet?

The IRRToolSet is a set of tools to work with Internet routing policies.
These policies are stored in Internet Routing Registries (IRR) in the Routing Policy Specification Language (RPSL).

The goal of the IRRToolSet is to make routing information more convenient and useful for network engineers, by providing tools for automated router configuration, routing policy analysis, and on-going maintenance.

But What Does *That* Mean?

- Tools to perform RPSL syntax checks
  - Syntax can be... non-obvious
- Tools to query and expand RPSL expressions
  - RPSL allows indirect definitions, including recursion
  - May need to make lots of WHOIS queries
- RtConfig – automatically configure routers
  - Support for popular vendors
  - Can use as all or a part of configuration process

IRRToolSet History

- The Internet Routing Registry Toolset (IRRToolSet) project originated at the USC Information Sciences Institute, where it was developed in 1997-2001 as the Routing Arbiter ToolSet (RAToolSet) project.

- Since the RAToolSet was no longer developed by ISI but is used worldwide, the RIPE NCC proposed to migrate this project to the RIPE NCC in order to continue its development and support. The original name of the project was preserved during the transition process, but was later changed to IRRToolSet since the tools were no longer part of the now-ended Routing Arbiter project.

- The RIPE NCC later transfered maintenance of the tool set to ISC, who began accepting code from the community and providing code maintenance. After several years at ISC, the project was moved to a Trac site, increasing the openness of the project and making it easier for users to participate directly.

Status Mid-2008

- ISC maintained code
  - Changes went through ISC review process
  - No non-ISC changes to source possible
- Cathederal not bazaar
- Community patches in limbo
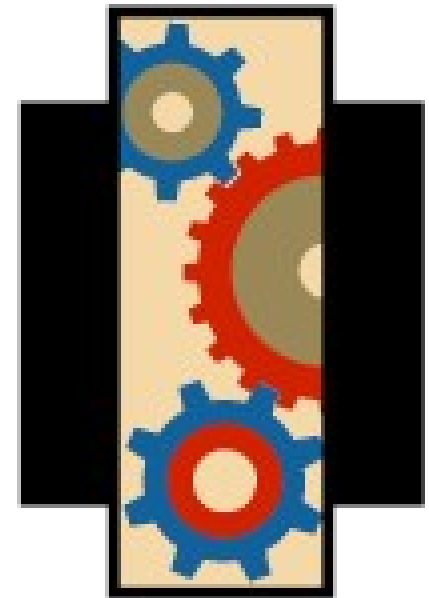
Current Status

- Trac Site Up & Running

- Source Code Subversionized

- Most Patches Merged

- Final Non-Community Release Pending

- Community... Interested?

http://irrtoolset.isc.org

irrtoolset@isc.org