

IRR Spring Cleaning

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Agenda



What is the Internet Routing Registry?



IRR Object Types



How are IRR Objects Used



What Changes are Coming

Routing Security Data Sets

Preferences 

- 1 RPKI
- 2 Validated IRR
- 3 Unvalidated IRR
- 4 Everything Else

What is the IRR?

The Internet Routing Registry

“The Internet Routing Registry (IRR) is a distributed routing database development effort. Data from the Internet Routing Registry may be used by anyone worldwide to help debug, configure, and engineer Internet routing and addressing. The IRR provides a mechanism for validating the contents of BGP announcement messages or mapping an origin AS number to a list of networks.”

-IRR.net Overview

The Internet Routing Registry

A way to share information about you and your customers with other network operators

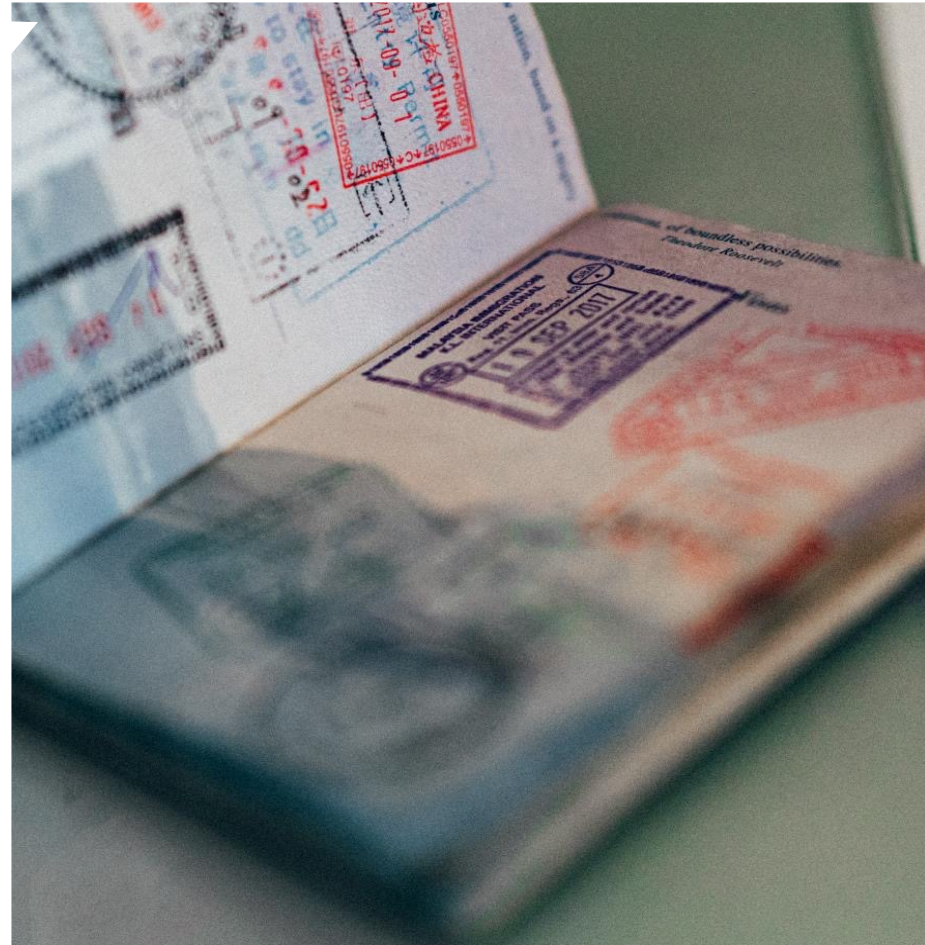
Getting Directions



Validated or Not

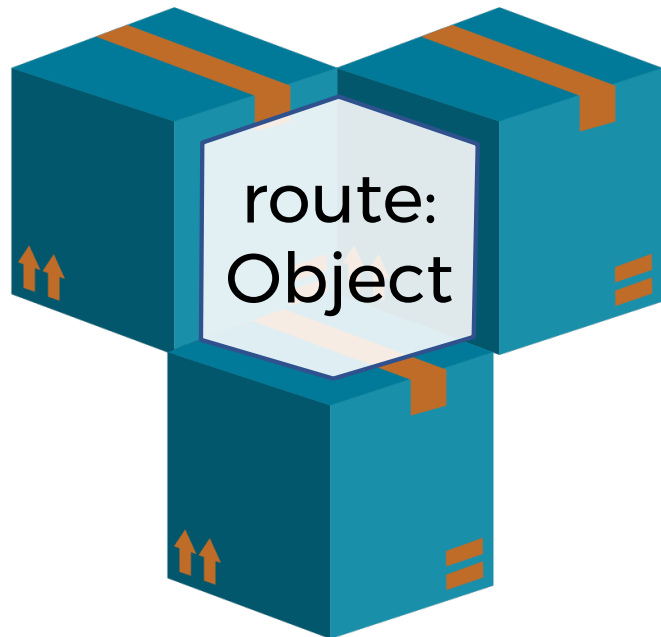
- Most IRR databases are not validated
- Stale, incorrect, malicious?

- All RIRs maintain a validated database
- Maintainer is allocated the resources



A Tour of the Objects

The route: Object



Fundamental building block of IRR



Announces

“Use this AS number to get to my IP block”



About **80%** of ARIN’s IRR data is route objects



Don’t forget about **route6** objects

The route: Object

route: 203.0.113.0/24

descr: Sesame Street ISP

descr: 123 Sesame Street

descr: New York, NY 10023

descr: US

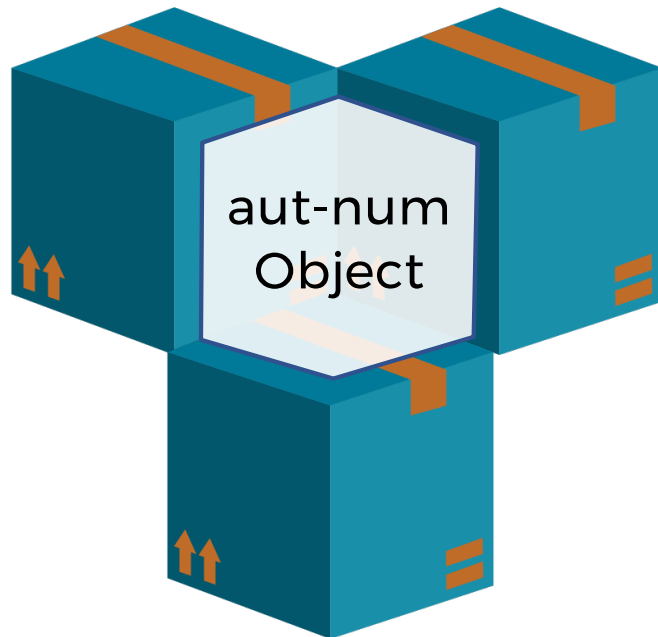
origin: AS64501

mnt-by: MNT-SSISP

changed: ernie@rubberduckie.net 2021430

source: ARIN

The aut-num: Object



Represents a single AS number and policies



Ranges from very simple to complex



Who will you **“talk”** to and who will you **“listen”** to at your AS number

The aut-num: Object

```
aut-num: AS64501
as-name: ENISP-AS
descr: Sesame Street ISP
import: from AS65539 accept ANY
export: to AS65540 announce ANY
admin-c: ERNIE123-ARIN
tech-c: BERT123-ARIN
mnt-by: MNT-SSISP
changed: ernie@rubberduckie.net 20210504
source: ARIN
```

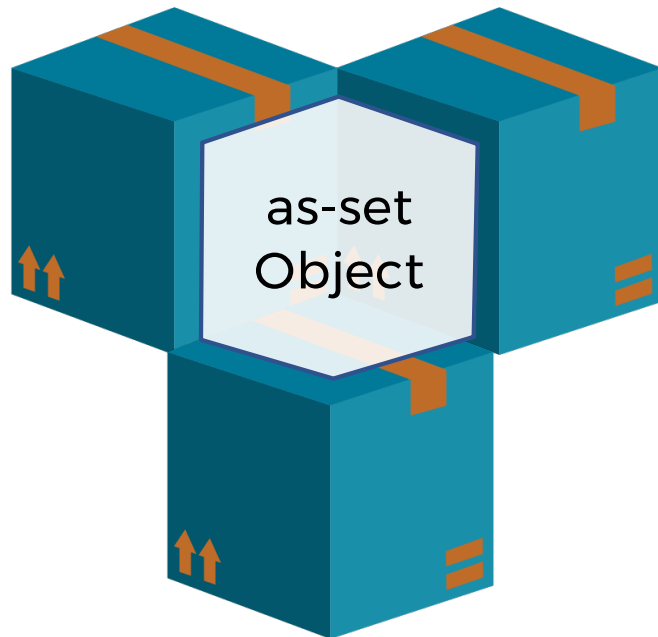


SSISP's
AS number



Upstream
ISP

The as-set: Object



Group AS numbers together with one name



Easily add or remove AS numbers as needed



Could be used to **categorize** customer numbers or peer numbers

The as-set: Object

as-set: AS64501 : AS-SSISP-CUSTOMERS
descr: Sesame Street ISP
members: AS65539, AS65540
tech-c: BERT123-ARIN
admin-c: ERNIE123-ARIN
mnt-by: MNT-SSISP
changed: ernie@rubberduckie.net 20210504
source: ARIN

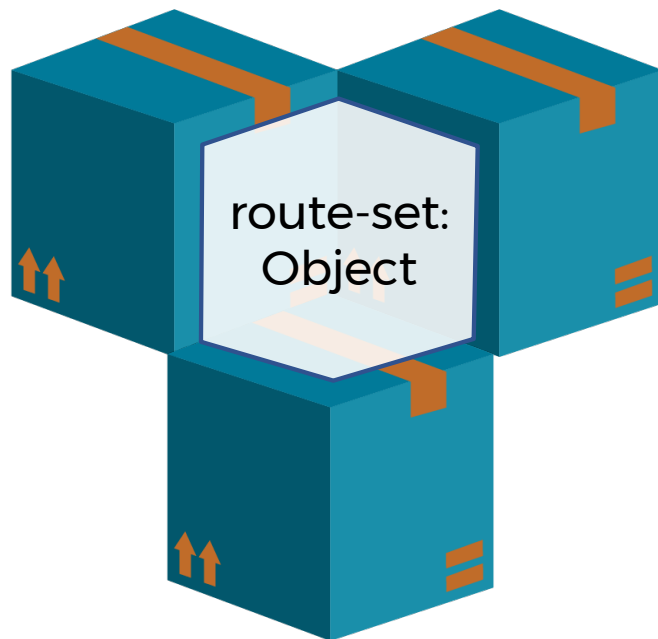


Identify the SSISP
customer ASNs



Current list of AS
numbers

The route-set: Object



Group together routes you will listen to



Easily add or remove from the list



Could be used to **categorize** customer/peer IP blocks

The route-set: Object

```
route-set: RS-SSISP-CUSTOMERS  
descr: Sesame Street ISP customer routes  
members: 192.0.2.0/24, 198.51.100.0/24  
tech-c: BERT123-ARIN  
admin-c: ERNIE123-ARIN  
mnt-by: MNT-SSISP  
changed: ernie@rubberduckie.net 20210504  
source: ARIN-IRR
```

Your name to
identify customer
prefixes



Your
customer's
IP prefixes



Objects are Created, Now What?

Collect Data and Make Decisions



Near Real-Time Monitoring/FTP download



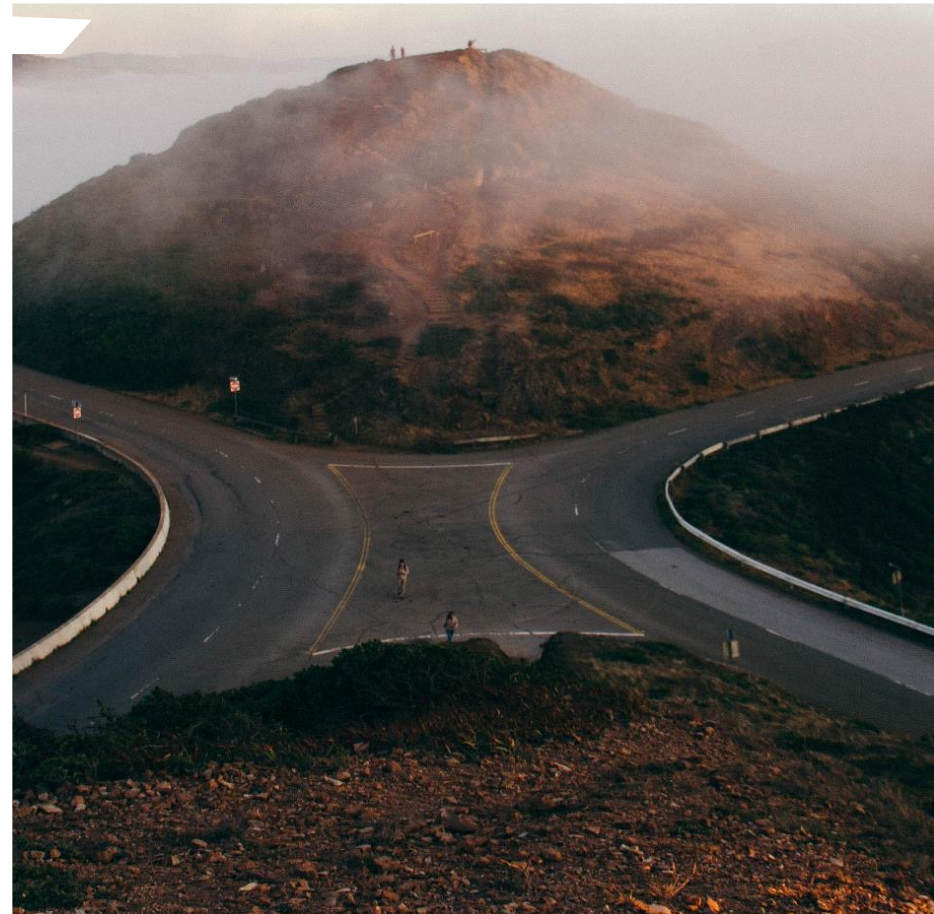
Decide what data is used



Configure your filters



Create the objects and protect your resources!



ARIN and ARIN-NONAUTH

In the beginning...

- ARIN has run an IRR database for ~20 years
- Alternative to the buddy system
- Upgraded but fundamentally unchanged
- You asked for something new



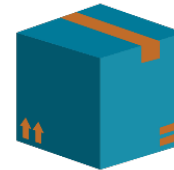
ARIN's Authenticated IRR



Internally
developed
alternative



Fully
integrated with
ARIN Online



Deployed in
June 2020



Multiple ways
to access IRR
data

A tale of two databases..

Authenticated
ARIN resources

Non-ARIN
resources, not
under agreement

Goodbye to IRR-NONAUTH

- Consulted the community
- Save the date
31 March 2022
- Proactive notifications



We are ready to help you



Don't be bashful
– Ask for Help



Take inventory of
your objects



Investigate your
alternatives



Make a plan



Thank you