



Assistance planning RPKI-ROAs

(for how ROAs help, be here at 1:40pm)

<https://roa-planner.internet2.edu>

(This is an experimental service. Users should not solely rely on its output as the final authority for required ROAs.)

Steven Wallace

ssw@internet2.edu

A Project Driven by What We've Learned from You

*Ensuring RE,
and only RE,
rides on RE!*



ROOTBEER

Routing Operations Observational Technology:
Building to Enable Education and Research

A Project of CAIDA and Internet2

*Routing
Security for RE*

What we've learned...

Based on assisting with ROA planning for dozens of university campuses, city & state governments, regional network service providers, K12 schools, hospitals, etc., we've learned:

*While most network operators require a single/simple ROA per IP network, a sizeable number require more complex/multiple ROAs. **Importantly, most networks benefit from assistance to determine if their ROA needs are complex or simple.***

When are complex/multiple ROAs required?

- Cold site (e.g., disaster recovery site) that announces an organization's IP networks differently only when operating.
- DDoS scrubbing services.
- Periodic events where an IP subnet is used at a temporary site.
- On-demand traffic engineering where more specifics are announced sporadically.
- Plans to use “Bring Your Own IP” to a public cloud.
- **When the IP address holder has sub-assigned IP addresses to different organizations** (we'll walk you through this example)

How to determine if ROA needs are complex or simple

- How is the network being announced now, and in the past?
- What are the Regional Internet Registry reassignments?
- What do Internet Routing Registry route objects suggest?

The ROA Planner collects current and past network announcements (**RIPEstat**, **RouteViews**), IRR route objects (**RIPEstat**), and RIR reassignments (**ARIN**), then calculates the ROAs required to cover all of these as through they are potential valid announcements.

The user can deselect any of these data (for example, ignore routing announcements over a year ago), and the ROA Planner will update the need ROAs.

Demo

IU's 129.79.0.0/16

I2's IPv6

HP

It rained Tuesday, November 25th

“I want to build an HTML + JavaScript page that helps users understand how RPKI-ROAs are evaluated to determine Valid / Invalid / NotFound. I want it to prompt for a ROA (AS, prefix, optional maxLength), prompt for a route, and then visualize the bit patterns to show whether the ROA covers the route.”

Demo

<https://roa-planner.internet2.edu/roa-visualizer>