

# Running Code For SIDROPS??

Chris Morrow/Job Snijders (no party hats)

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# Why? Why now?

RPKI/ROV deployments are increasing, skew in behaviors are becoming visible and potentially problematic.

A return to interoperability testing and tested code prior to IESG review?

Ability to test before large scale deployments across multiple stacks.

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program example;

{$MODE OBJFPC}
{$COPIERS ON}

function rot13(someText: string): string;
var
    ch: char;
begin
    result := '';
    for ch in someText do
        case ch of
            'A'..'M', 'a'..'m': result += chr(ord(ch) + 13);
            'N'..'Z', 'n'..'z': result += chr(ord(ch) - 13);
        end;
    end;
end;

var
    line: string;

begin
    repeat
        readln(line);
        writeln(rot13(line));
    until eof(input);
end.
```



Working Group appears to agree *running code* is a Good Thing™

<https://mailarchive.ietf.org/arch/msg/sidrops/6o9t4m9vBCEbpVVtDSQHjLyURNY/>

[Sidrops] proposal to update SIDROPS charter (req... Job Snijders

Re: [Sidrops] proposal to update SIDROPS charter ... Nick Hilliard

Re: [Sidrops] proposal to update SIDROPS charter ... Jakob Heitz (jheitz)

Re: [Sidrops] proposal to update SIDROPS charter ... Lukas Tribus

Re: [Sidrops] proposal to update SIDROPS charter ... Joel Jaeggli

Re: [Sidrops] proposal to update SIDROPS charter ... Tim Bruijnzeels

Re: [Sidrops] proposal to update SIDROPS charter ... Joel Jaeggli

Re: [Sidrops] proposal to update SIDROPS charter ... George Michaelson

Re: [Sidrops] proposal to update SIDROPS charter ... Jay Borkenhagen

Re: [Sidrops] proposal to update SIDROPS charter ... George Michaelson

Re: [Sidrops] proposal to update SIDROPS charter ... Christopher Morrow



# Examples where this would have been handy?

- Recent manifest discussions
- Correct handling of CRLs
- Current validation algorithm changes (ASN.1 codepoint)
- ASPA
- RTA
- RSC



Arrange in/formal meetings between implementers to validate behavior / assumptions.

Arrange testbeds to validate above?

Use IETF Interim Meetings?





# How?

For inspiration we can look to  
... *IDR!*

- Require *Implementation Reports* before submitting to IESG
- Each *NORMATIVE* term should be mentioned+referenced in the implementation report (Compliant/No/Not Applicable)
- Document an *interoperability matrix* showing multiple implementations
- Software license not relevant for interoperability testing: Closed Source or Open Source both are welcome in testbeds.

# The SIDROPS chairs are here to help

(Free of charge)  
sidrops-chairs@ietf.org

<https://trac.ietf.org/trac/sidrops/wiki/WikiStart>

## Use the Wiki!

The SIDROPS co-chairs are able to help internet-draft authors and implementers how to write *Implementation Reports* on the SIDROPS Wiki (and show examples from IDR).



# The SIDROPS chairs will:

- Encourage internet-draft authors to report on awareness of implementations (see RFC 7942)
- Include their understanding of implementations and maturity levels in the shepherd write-up
  - Mark drafts with no or one implementation as “Waiting for Implementation” state (after “WG Last-Call” state, see <https://datatracker.ietf.org/help/state/draft/ietf>)
  - Confirm all aspects have multiple implementations (two signers + two validators at minimum for new object profiles)
  - Check if all normative terms are covered (avoid latent capabilities, no MUST or SHOULD MUST go untested!)



RFC Publication via SIDROPS  
requires Rough Consensus  
and *Running Code*



... microphone to Job





# ASPA

Job Snijders [job@fastly.com](mailto:job@fastly.com)

The action plan to see if ASPA is worth anything.

Let's implement, test, ...

and *then* figure out if global deployment is a good idea or not!

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# ASPA Implementation Components (4 aspects!)

- ASPA Signed Object generators (aka 'Signers')
  - Rpkimancer - <https://github.com/benmaddison/rpkimancer-aspa>
  - Who else .... ?
- ASPA Signed Object validators (aka 'RPs')
  - Job will try based on OpenBSD's rpki-client (Q4 2021)
  - .... Maybe FORT? Routinator? RPSTIR?
- BGP Speakers capable of ASPA Path Verification (aka 'Routers')
  - Wasn't there some BIRD patch? Is it still current? Any feedback from the upstream?
  - Cisco XR? Arrcus?
  - Who else is interested in this... Juniper? Nokia? Huawei? FRR?
- Bonus points if WG does these too (but not needed for ASPA RFC publication).
  - RTR clients
  - RTR servers



# First steps are simple

- Request IANA for Early Allocation for all ASPA OIDs
    - Advantage of IANA Early Allocations is that implementations can test interoperability with each other without squatting!
  - Set up testbed Trust Anchor specific to ASPA testing
  - Publish some ASPA objects
  - Get some validators to emit validated ASPA data
  - Setup EBGP from and to multiple implementations across GRE tunnels - each implementation is one or more ASNs
  - Fiddle with ASPA object publications and observe the effects in the BGPoverTunnelTestbed's sort of default-free zone
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# Cost - bill of materials

- IANA allocation: free
- Mailman mailing list free (AMS or Jared M)
- Hosting the ASPA testbed RPKI Trust Anchor: ~ 60 euros per year
- Hosting the GRE/VXLAN tunnel server: ~ 60 euros per year
- Hosting ansible repo to manage testbed: free on github

With the above, anyone with an Internet connection should be able to connect to the TA's publication server & establish GRE tunnels. This means that RP implementers host their own, BGP implementers host their own BGP code on an Internet server, etc. Using GRE tunnels we separate the Administrative Domains and allow everyone to manage their own costs. *“Going Dutch!”*

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# Discussion needed, who will do what?

- Set up testbed coordination mailing list (Ask AMS for a non-working-group mailing list, maybe something like [aspa-testbed@ietf.org](mailto:aspa-testbed@ietf.org))
  - Who wants to host the Tunnel server? (Job S. volunteers!)
  - Who wants to host and operate the testbed TA?
  - Which BGP implementers are willing to join the test-bed (potentially in cooperation with Customers?)
  - Which ISP operators are willing to join a Vendor, or run Open Source ASPA BGP capable in the testbed to confirm the technology and User-Interfaces work as expected and follow Principle-Of-Least-Astonishment?
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# Questions?

Perhaps some coordination/administrative can be managed via:

<https://github.com/SIDROPS/ASPA-testbed>

Create issues, send pull requests! Everyone welcome!

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