

Simplified Local internet nUmber Resource Management (SLURM)

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draft-dseomn-sidr-slurm-02

IETF 93

Background

- RPKI Origin Validation and BGPsec work with “normal” address space
- There is also “special use” address space
 - Special use IPv4 address spaces are designated in RFC 5735
 - Unique local IPv6 unicast address space is defined in RFC 4193
 - Private use ASNs are designated in RFCs 1930 and 6996

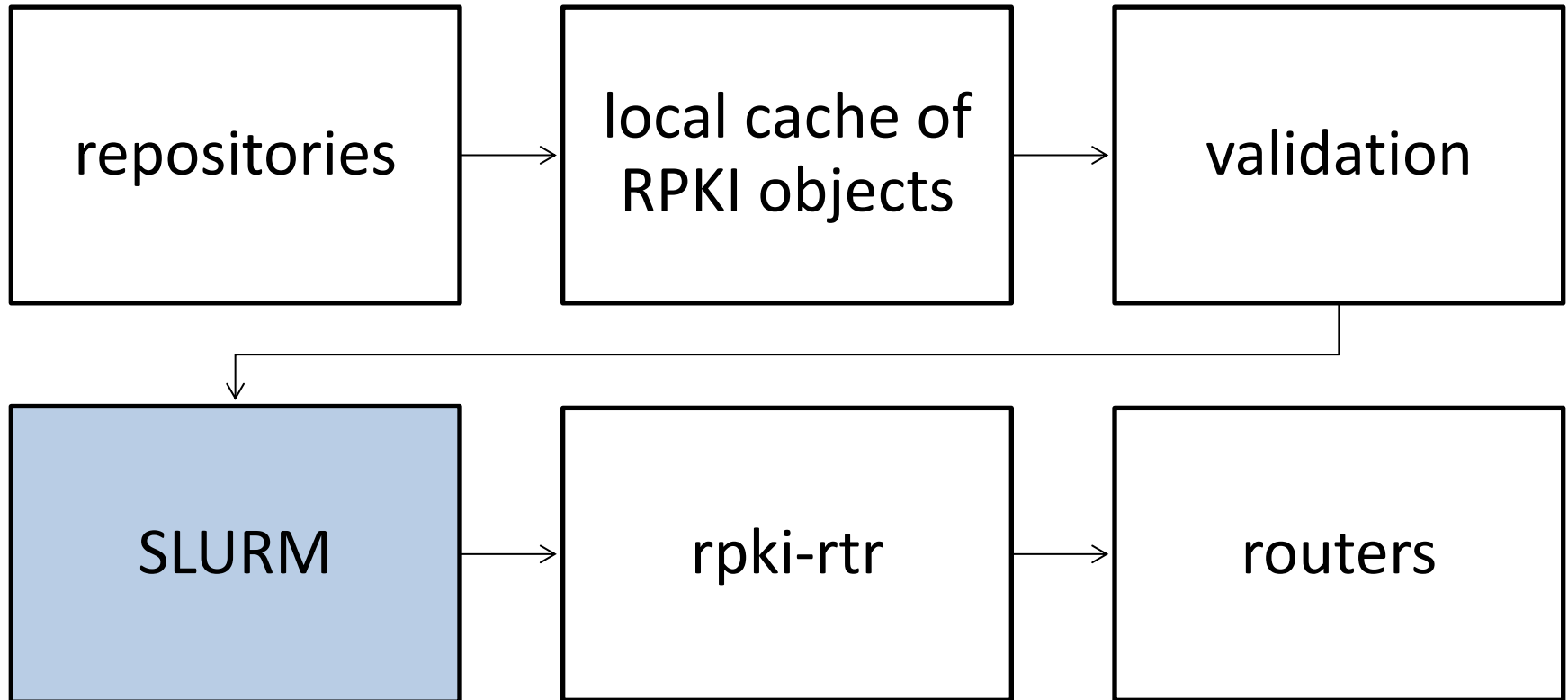
Motivations

- The RPKI allocates these exceptions to IANA, and they will never be delegated to any RIR (RFC 6491)
- To enable use of the INRs as envisioned by these RFCs, a special capability is needed for the RPKI

Use Cases

- Local use of reserved INRs
 - Local management of reserved/private INRs for local traffic over locally operated routers
- Local, unauthorized, use of allocated but unadvertised INRs
 - Some IPv4 prefixes are allocated, but not announced globally; these should be protected by issuing AS0 ROAs
 - Some networks use these prefixes locally, without authorization; if AS0 ROAs are issued, then local use will fail unless we make suitable accommodations

Position in the Relying Party Stack



Inputs and Outputs

- Inputs from validation:
 - Set of *{IP prefix, prefix length, maximum length, AS number}* tuples from validated ROAs
 - Set of *{AS number, subject key identifier, router public key}* tuples from validated router certificates
- Outputs to rпки-rtr: the above two sets, optionally modified

Components

- Validation Output Filtering: Ignore the RPKI's assertions about selected "special case" INRs
- Locally Adding Assertions: Add additional assertions about these INRs
- SLURM File: configuration file for SLURM

Validation Output Filtering

- User configures (in the SLURM File) a set of INRs to exclude
- Any assertion from a ROA where the prefix overlaps the above set is not included in the output set of tuples
- Any assertion from a router certificate where the AS number is in the above set is not included in the output set of tuples

Locally Adding Assertions

- User configures a set of INR assertions for reserved INRs (in the SLURM File)
- These INR assertions are added to the output set of tuples

SLURM File

- Standard format configuration file allows multiple relying party implementations (within an administrative domain) to share SLURM configuration
- Specified in Augmented Backus-Naur Form (ABNF)
- Looks like:

```
SLURM 1.0
```

```
del origination 10.0.0.0/24  
del origination fd0b:dd1d:2dcc::/48
```

```
del bgpsec 64512  
del bgpsec 64513
```

```
add origination 10.0.0.0/24 64512  
add origination 10.0.0.0/24 64513  
add origination fd0b:dd1d:2dcc::/52-56 64512  
add origination fd0b:dd1d:2dcc:42::/64 64513  
add origination fd0b:dd1d:2dcc:100::/52 64513
```

```
add bgpsec 64512 Zm9v VGHpcyBpcyBub3QgYSByb3V0ZXIgcHVibGljIGtleQ==  
add bgpsec 64512 YmFy b3IlgYSBmbG9jayBvZiBkdWNrcw==  
add bgpsec 64513 YWJj bWF5YmUgYSBkaWZmZXJlbnQgYXZpYW4gY2Fycmllcj8=
```

Next Steps

- Snack/beverage break adoption?
- Working group adoption?

Questions?

