I2RS
Building the NG routing interface

Sue Hares, Eric Voit, and others

I2RS built for High performance

Not the Pizza box CLI
I2RS Concepts
• Programmatic
• Ephemeral state
• High Speed Publication/subscription stream
• Traceability
• Some configuration
• Lots of Analytics in Data Models

I2RS
Focused on

80% Analytics
20% Config

Multiple streams

Operator’s needs
Original Goals for Hackathon

1. Add delete subscription” capability to the YANG push code that we built for OpenDaylight Beryllium
   1. (Eric Voit) - event/logging change

2. Build and run VM Edwin Cordeiro’s I2RS VM
   The tutorial and VM are available at:
   - [http://www.net.in.tum.de/pub/i2rs/l2rs-Dev-VM.ova](http://www.net.in.tum.de/pub/i2rs/l2rs-Dev-VM.ova) - md5: af70741cd12b39a9644b0881df516a55

3. Load I2RS data models into ODL Libraries + connect to route add/delete

4. Some combination of the above
Modified Goals for Hackathon

1. Add delete subscription” capability to the YANG push code that we built for OpenDaylight Beryllium (Eric Voit) - event/logging change

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3. Load I2RS data models into ODL Libraries + connect to route add/delete

4. Some combination of the above

NEW Goal/Project 5: Hack together an I2RS Client and Server and get an i2rs <route-add> RPC working.
New Goal #5

**Challenge:** Hack together an I2RS Client and Server and get an i2rs <route-add> RPC working

**Tools, Environments & Code:**
- Dev & execution environment: Linux (Ubuntu 14.3 native or in Virtual Box)
- mininet and mininext (simulated network of routers)
- yangcli-pro (YumaPro)
- Quagga 1.0.20160315 (including Zebra for route table access)
- Cisco/Tail-f confd 6.1
- ietf-i2rs-rib YANG model from draft-ietf-i2rs-rib-data-model-05.txt

**Participants:**
- Sue Hares (leader)
- Don Fedyk
- Jason Sterne
- Lucy Yong
- Mamadou Tahirou
Overview of target approach

Network of routers simulated using mininet/mininet

Router

Router

Confd

Zebra

Quagga

Router with i2RS agent

i2RS Client

yangcli-pro

NETCONF with i2RS data model

CLI/GUI

<route-add>

RPC

ospf/bgp
Glueing Confd to Quagga

Let zebra see Confd as just another routing daemon.

Router with i2RS agent

```
ospf d
bgp d
```
Tools / Environment Notes

**virtual box:** our laptops ran out of horsepower when trying to tackle the original project/goal #2 (6G memory, had lots of stuff in it, 5G ova gave us troubles on USB sticks – mystery)

**confd:** building confd requires: sudo apt-get install libssl-dev