Timed Operations in I2RS

Tal Mizrahi

Marvell

IETF 97, Seoul, November 2016
Example 1

We want to update the RIBs of R1, R2 from the ‘before’ to the ‘after’ paths.
Example 1

before  

after

route-update

route-update
Example 1

If we update R1, R2 (roughly) at the same time, we can avoid congestion.
Example 2

A set of RIB updates that will switch from the ‘before’ to the ‘after’ paths.
Example 2

A set of RIB updates that will switch from the ‘before’ to the ‘after’ paths.

route-delete
route-update
route-add
Example 2

What if we can perform the RIB operations at times $T_1 < T_2 < T_3$ ...?
So what is proposed here?

• Leverage the Time Capability in NETCONF.
  – RFC 7758 (Experimental).

• Timed RIB operations.

  <rpc message-id="101">
    <route-add>
      ...
      ...
      ...
      <scheduled-time> 2016-11-16T07:15:00.235Z </scheduled-time>
    </route-add>
  </rpc>
Next Steps

• Draft 00
• Feedback from the WG
Thanks!
Can timed operations be performed accurately?

Yes!

• Timed updates can be performed with a sub-microsecond accuracy using TimeFlips*.

• TimeFlip was tested on a Marvell 98DX4251 with a sub-microsecond accuracy.

References


