Aside: Tags [ Fast Reroute Revisited ]

Background:  https://mailman.stanford.edu/pipermail/openflow-spec/2010-April/000978.html

Quick summary of potential solutions:

1. [Original] Multiple priority flows: Setup backup flow with lower priorities and delete flows from hardware when failure event occurs. Issues: what if the link comes back up? Have to reprogram all entries back into hardware.
2. [James Kempf/Leon Poutievski] Change priority/Set Inactive Bit: Same as 1 except instead of deleting flows from hardware simply reduce priority or mark as inactive.
3. [Ben Pfaff] Setup an action that sets up a group of potentials and forwards to the first active.
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Proposal (still in development):

- Update the multipath proposal; add active-backup to the list of group types (currently all or any).
- Configure a list of action buckets - the first active one is chosen for forwarding.
- Ability to deactivate/activate action buckets.

Follow up along with the multipath proposal on the openflow-spec mailing-list
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Multiple Tables

Agenda:

- Use cases
- High level problem space
- Propose high level architecture
- Feedback
- \((\text{Rinse}, \text{Lather}, \text{Repeat})^n\) \(n \leq 4\)
Use Cases

- Core router scenario
  - Lots of routes and just a few QoS policies = Lots of rules

- OpenFlow on existing hardware
  - Restricted TCAM table size. Leverage L2/L3 tables.

- Deeper packet inspection?
  - Having the largest lookup drastically reduces TCAM scalability.
  - Breaking up a single TCAM into smaller tables makes better use of resources.
Common themes

● Leveraging current network layer hierarchy
● Cartesian product explosion
● Efficient hardware table utilization