Proactive Connectivity Monitoring

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by

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Problem space

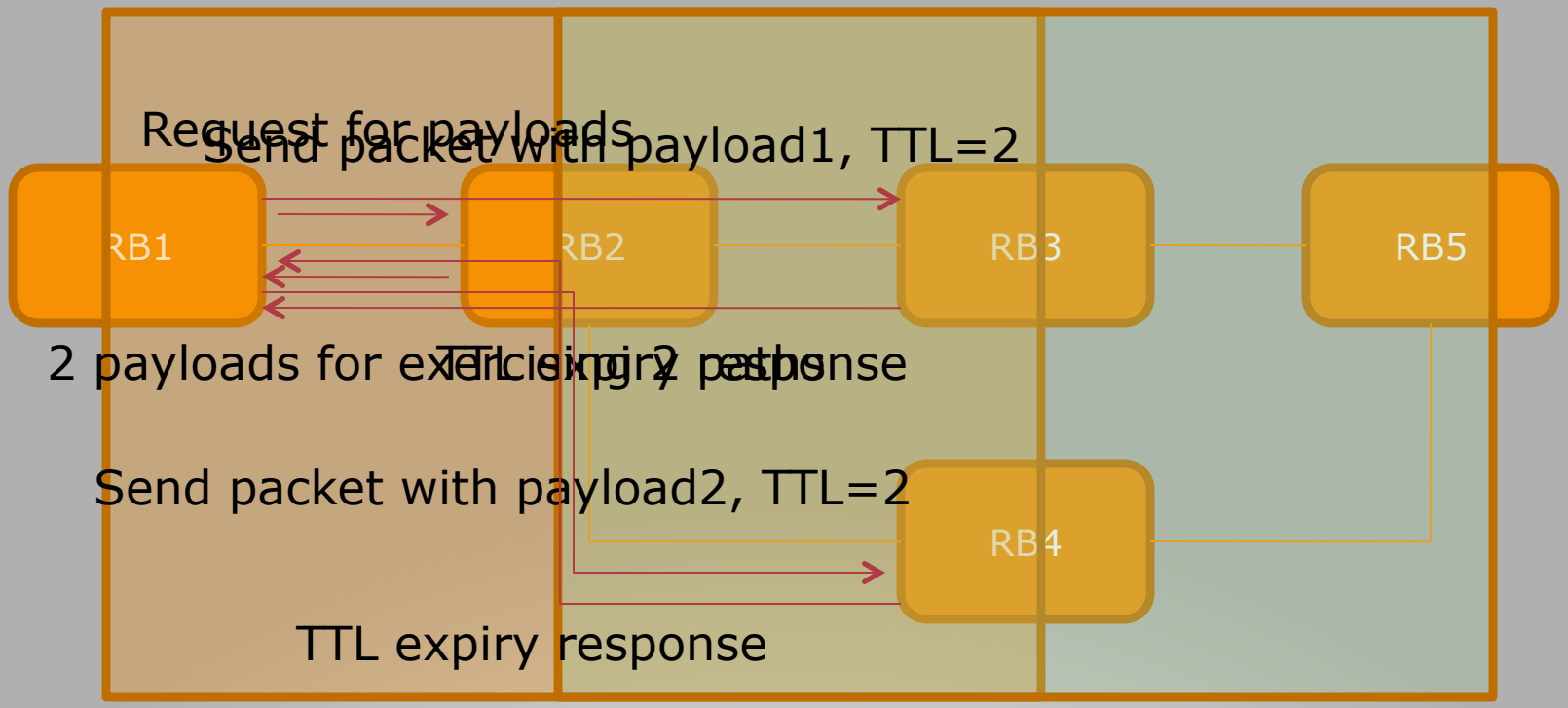
- Proactive Connectivity monitoring:
  - Periodic monitoring of all ECMP paths for given Ingress and Egress Rbridges
  - Number of ECMPs can be very large – need to do this efficiently
  - Need network wide hashing information

Previous approaches

- Ways used in the past to exercise one of the ECMPs
  - MPLS Ping approach (RFC 4379):
    - Send range of IP addresses to each switch on the path
    - Each switch prunes the 127/8 IP addresses based on Hash
    - No guarantee that a valid IP address will be available at the end of the exercise

Distributed approach

- Test overlapping path segments

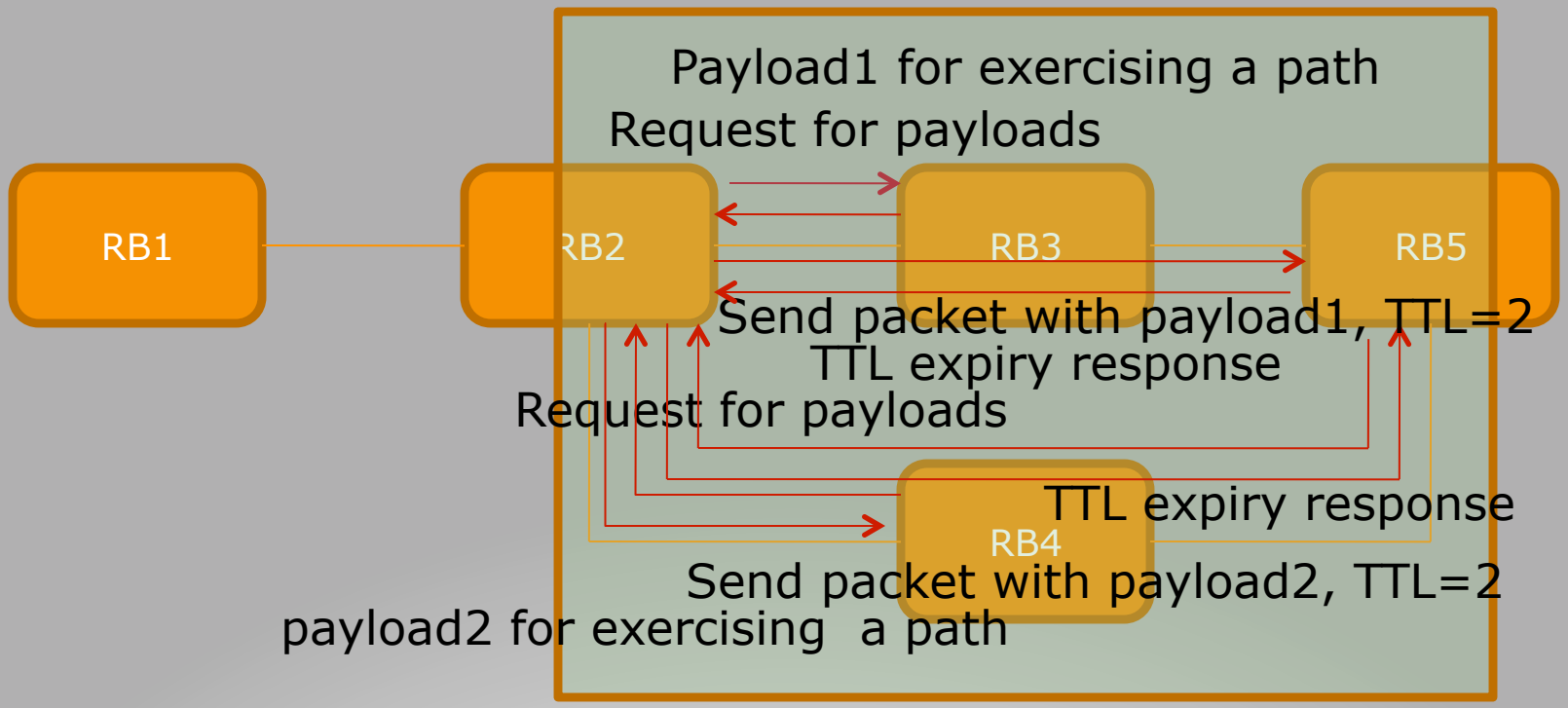


e.g: Test ECMPs between RB1 And its 2nd Hop neighbors

e.g: Test ECMPs between RB2 And its 2nd Hop neighbors

Distributed approach

- Test overlapping path segments



Test ECMPs between RB2
And its 2nd Hop neighbors

- Stop if 2nd hop neightbor is ERBridge

Pros

- Number of paths to be tested no more exponential
- No need to know network wide hashing information
- Core switches have to do more work??
  - Core switches can combine similar requests

Conclusions

- Provides proactive monitoring without overloading single switch with complexity
- Can be extended to other Multipathing environments
- Provides Framework for Proxy Ping

Q&A