

Route Flap Damping Made Useful

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Cristel Pelsser <cristel@iij.ad.jp>

Olaf Maennel <olaf@maennel.net>

Keyur Patel <keyupate@cisco.com>

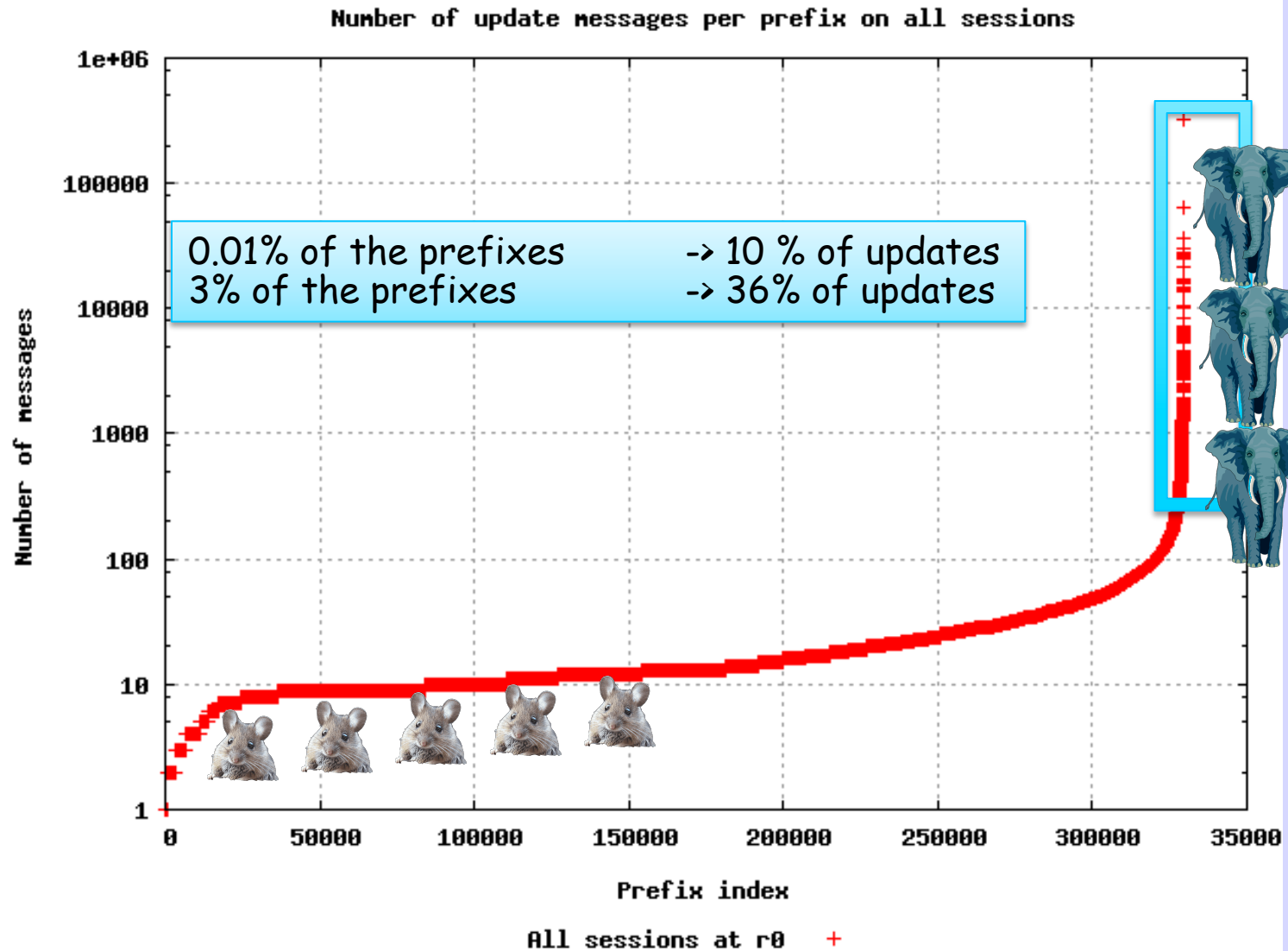
Pradosh Mohapatra <pmohapat@cisco.com>

Randy Bush <randy@psg.com>

Motivation

- RFD has been deprecated due to serious problems of over-damping
- But we still have really badly behaving prefixes causing churn
- Is there a minimal change that can start to address this issue?

Mice and Elephants

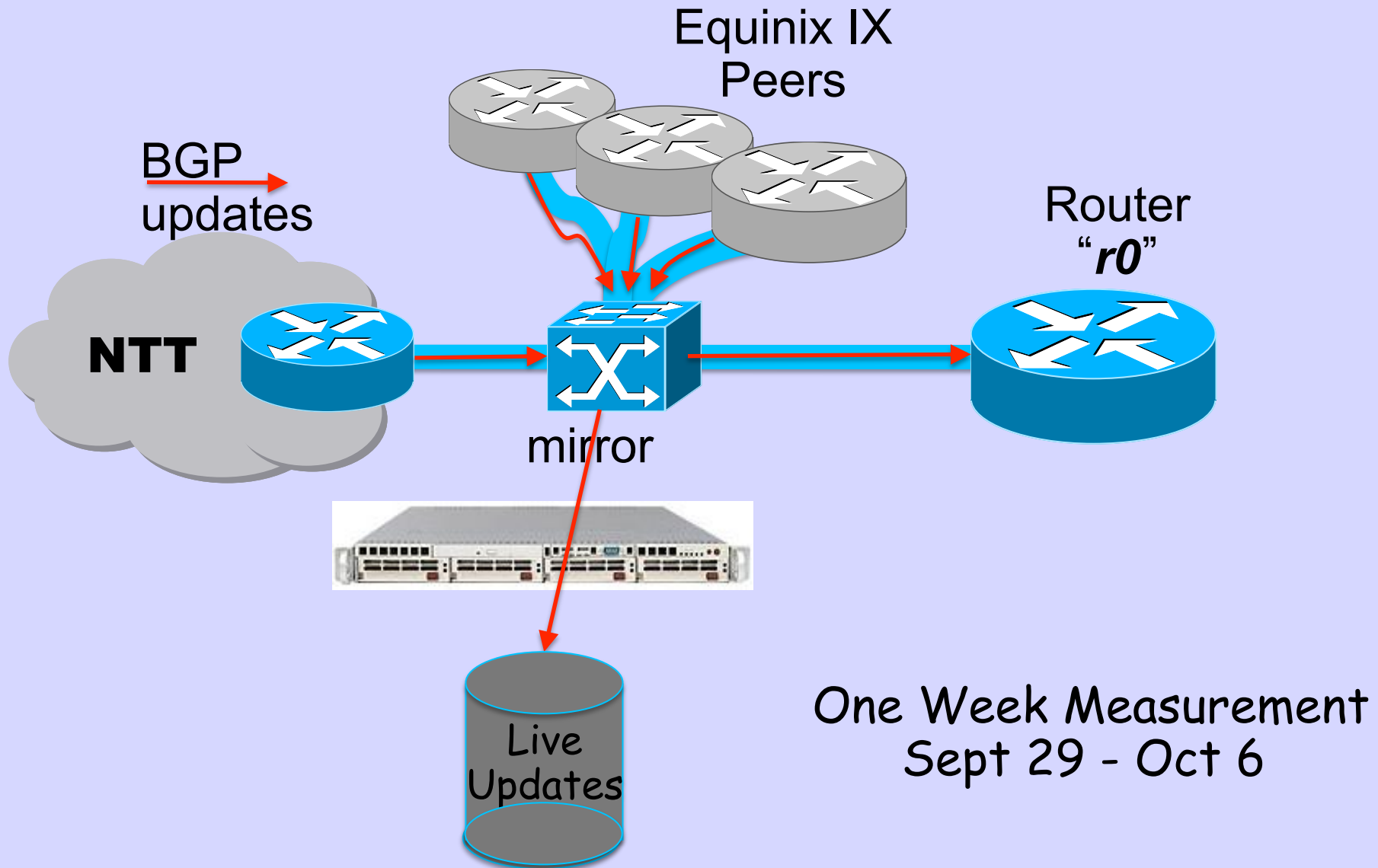


Abnormal protocol convergence

Approach

- Current techniques: MRAI and RFD
- Problem: Today's RFD parameters kill both mice and elephants
- Approach: Higher suppress threshold
 - Save mice
 - Churn reduction compared to no RFD
 - Trivial to implement

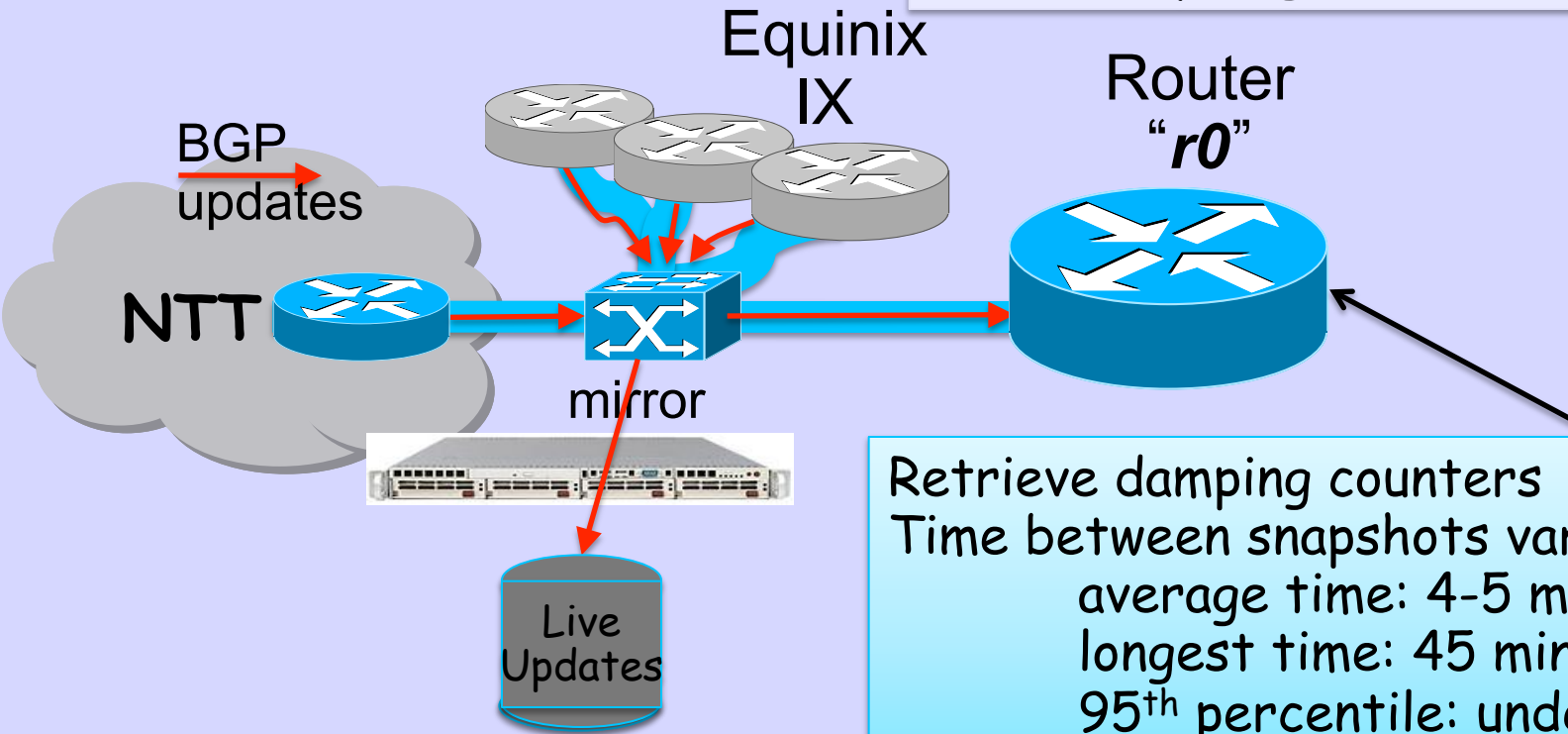
Measurement Structure



Measurement Details

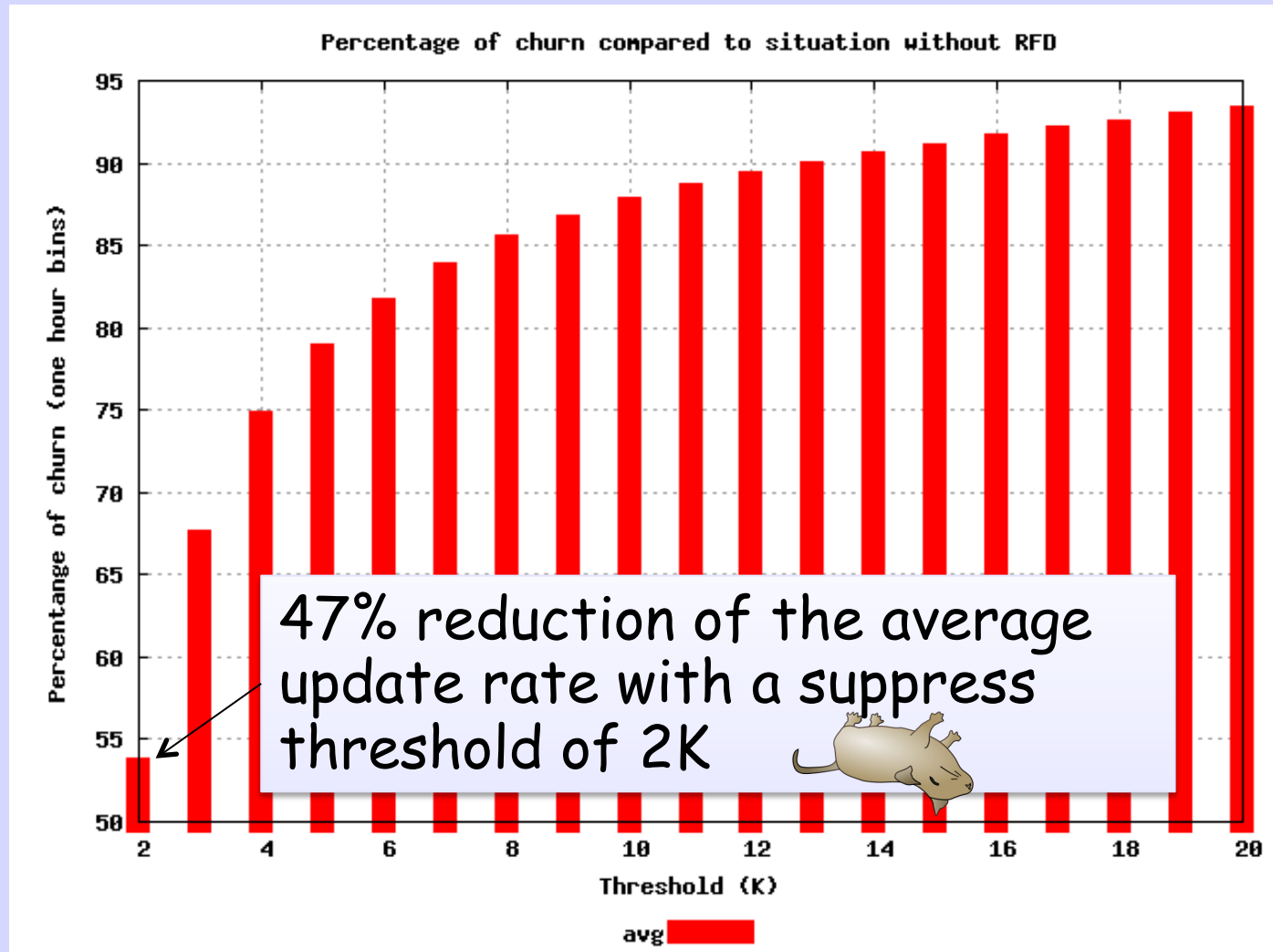
Modified code in r0

- No actual damping
- Penalty assigned to routes
- Very high maximum penalty



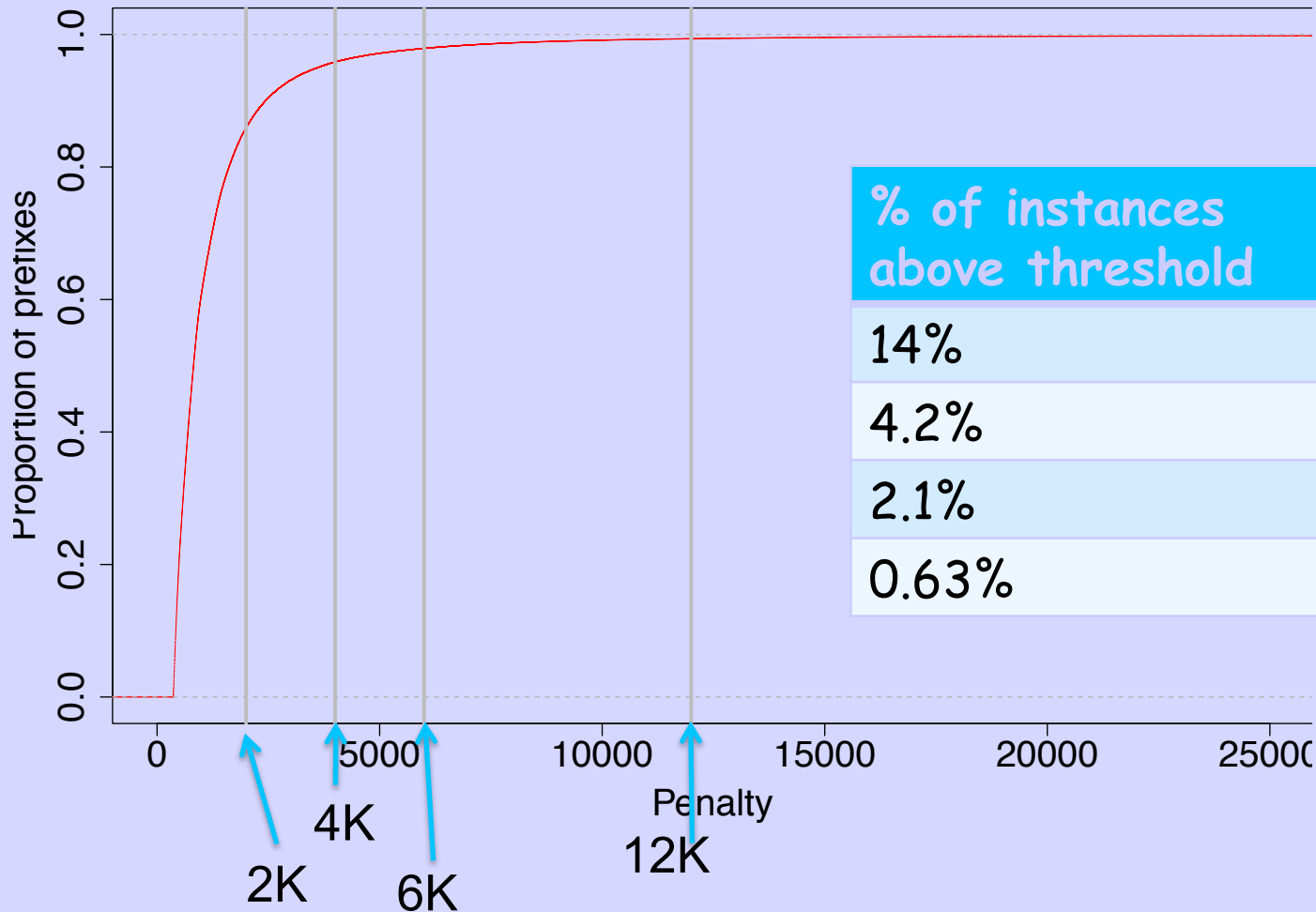
Retrieve damping counters
Time between snapshots varies
average time: 4-5 min
longest time: 45 min
95th percentile: under 10 min

Today's Default Does Cut Churn

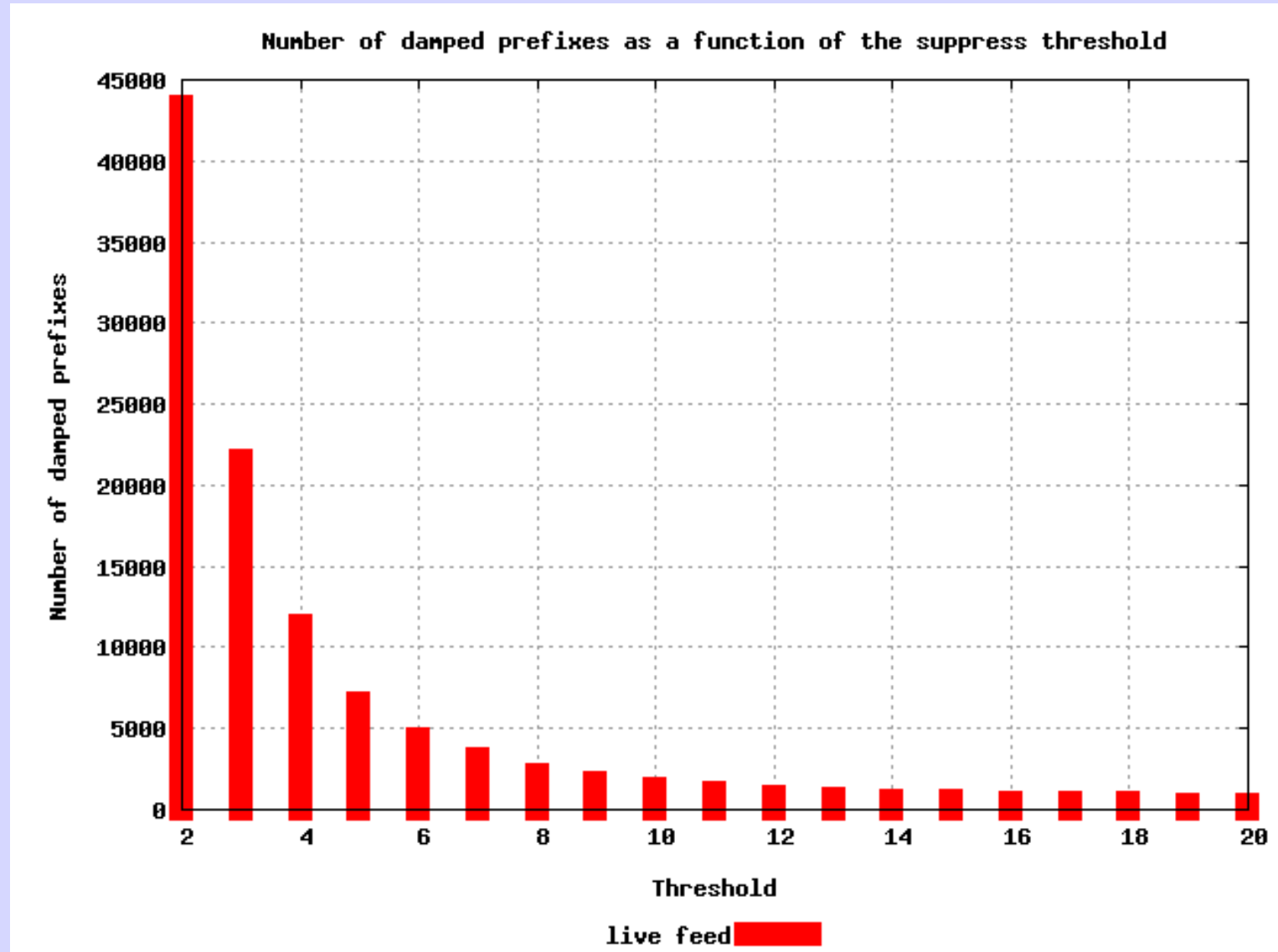


Too Much - It Kills Mice

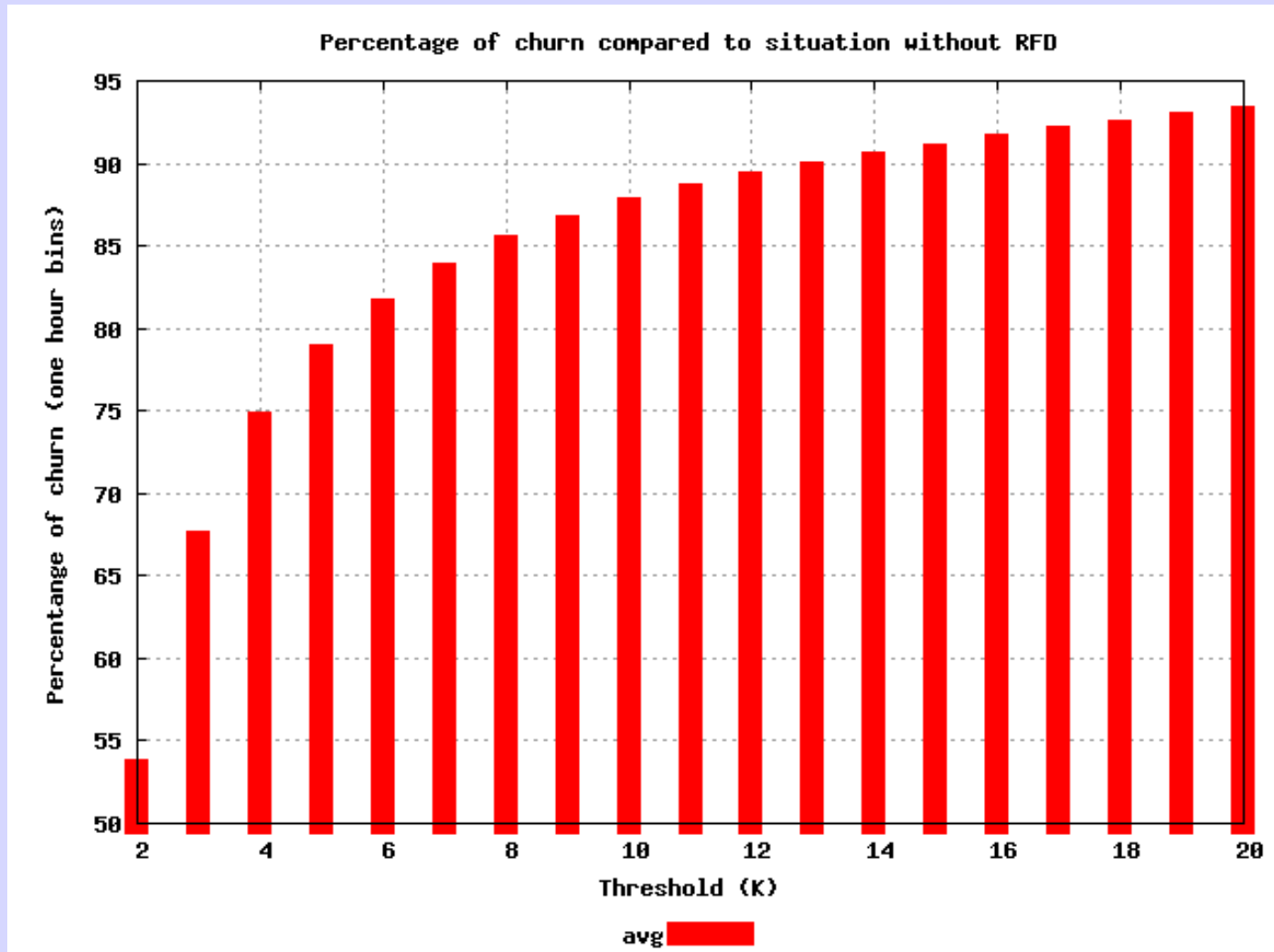
Proportion of prefixes with penalty value below x (CDF)



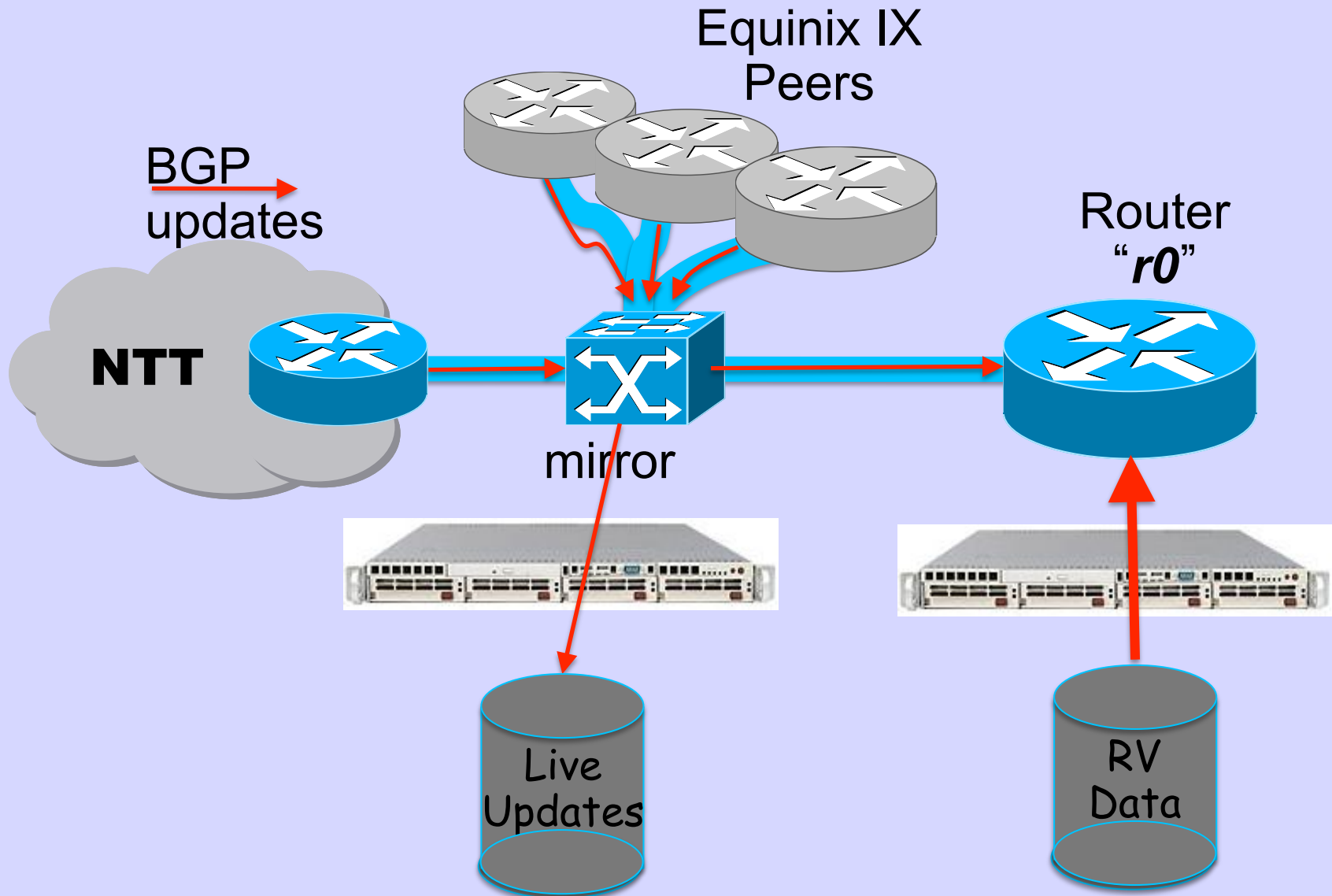
But We Can Kill Many Less



While Reducing Churn



Checking Topo Dependence



So ...

- Current RFD settings are far too aggressive
- As a consequence RFD is often turned off
- Raise the suppress threshold
 - Router implementations raise max to 50k
 - Tune parameters to 6-15k