

Routing Area Open Meeting Berlin, July/August 2013

Area Directors

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Abbreviated Note Well

Note Well

This summary is only meant to point you in the right direction, and doesn't have all the nuances. The IETF's IPR Policy is set forth in BCP 79; please read it carefully.

The brief summary:

- By participating with the IETF, you agree to follow IETF processes.
- If you are aware that a contribution of yours (something you write, say, or discuss in any IETF context) is covered by patents or patent applications, you need to disclose that fact.
- You understand that meetings might be recorded, broadcast, and publicly archived.

For further information: Talk to a chair, ask an Area Director, or review BCP 9 (on the Internet Standards Process), BCP 25 (on the Working Group processes), BCP 78 (on the IETF Trust), and BCP 79 (on Intellectual Property Rights in the IETF)

Note Also...

- Please state your name clearly before speaking at the microphone
- Audio streams and jabber
 - <http://tools.ietf.org/agenda/87/>
 - This meeting at rtgarea@jabber.ietf.org
- Routing Area mailing list
 - routing-discussion@ietf.org
- Routing Area wiki
 - <http://trac.tools.ietf.org/area/rtg/trac/wiki/WikiStart>
 - What else would you like to see on it
- Routing Directorate
 - <http://www.ietf.org/iesg/directorate/routing.html>
- Blue Sheets
 - Are now scanned and published
- Minutes
 - Chairs please send your notes to Deborah

Today' s Agenda

- Administrivia
- Working Group Reports
- Report on “Active Queue Management and Packet Scheduling (AQM)” BoF
- Report from MANIAC Challenge
- Open Discussion / Any Other Business

Working Group Reports

- ** BFD
- CCAMP
- FORCES
- IDR
- I2RS
- IS-IS
- KARP
- L2VPN
- L3VPN
- MANET
- MPLS
- NSC (BoF)
- NVO3
- OSPF
- PCE
- * PIM
- * PWE3
- * ROLL
- RTGWG
- SIDR
- STATUS (BoF)

BFD

- Not meeting in Berlin
- Dave Ward is stepping down as co-chair
 - Continuing as a WG Technical Advisor
 - Nobo Akiya nobo@cisco.com been drafted
- WG Document Status
 - Core and TC MIBs ready for WG last call
 - MPLS MIB still work in progress
 - BFD on LAGs:
 - Stable. Could use one last pass of English editing
 - State variables need to be documented
 - Almost ready for WGLC, should do before Vancouver

BFD continued

- WG Document Status continued
 - Multipoint BFD:
 - No document updates
 - Implementations in progress
 - Only implementing “silent tail”
 - WG to consider removing active tail functionality from draft
 - WGLC after implementations and resolution of issues
 - Crypto documents stable, but not yet implemented
- Non-WG Documents
 - draft-akiya-bfd-intervals:
 - May be adopted as informational/BCP WG item
 - draft-akiya-bfd-seamless-^{*}
 - Require more discussions on list
 - Potential candidate to discuss at Vancouver
 - WG re-charter would be required

PIM

- There are 4 WG documents
 - 3 of them recently passed WGLC.
- Meeting on Thursday.
 - A lot of activity
 - Currently 10 drafts that authors would like the WG to adopt
 - One new topic that may interest you is the use of Maximally Redundant Trees for failure protection.

PWE3 Report – IETF 87

- No RFCs since last IETF
- One draft in RFC editor's queue: Ethernet OAM Interworking
- One draft in WG last call: ICCP for L2VPN PE Redundancy
- Meets on Thursday afternoon
- Topics on agenda:
 - PW Endpoint fast failure protection
 - Experiences shepherding draft-ietf-pwe3-dynamic-ms-pw
 - Challenging with large number of co-authors
 - ICCP application to VPN route label sharing
 - Keyed IPV6 Tunnels
 - Potentially relevant to L2TPEXT

ROLL

- The ROLL WG did not meet at IETF87
- Since IETF86 there has been some progress on resolving the IESG/Directorate review comments on:
 1. the security threats document
 2. trickle multicast
- The p2p documents are now in RFC Editor queue.
- The applicability statements continue to be slow, but one set of authors has returned from the dead, and have started again to make progress.
- A second applicability statement could, depending upon IESG opinion and BOF results move to a 6tsch group.

IETF-87 AQM BoF

<http://www.ietf.org/mail-archive/web/aqm/current/maillist.html>

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Richard Scheffenegger <rs@netapp.com>
Tue., 30. July 2013
17:00, Potsdam 1 Room

Introduction

- **The Active Queue Management and Packet Scheduling working group (AQM) works on algorithms for managing queues in order to minimize standing queues, help control the sending rates without undue losses, minimize delays for interactive apps, and protect flows from misbehaving flows.**

Background

- There is a desire to update the RED manifesto based on “lessons learned”:
 - <http://tools.ietf.org/html/draft-baker-aqm-recommendation>
- There are new AQM algorithms being defined, which should improve on RED both in operation (improved performance) and operability (reduced tuning):
 - <http://tools.ietf.org/html/draft-pan-tsvwg-pie>
 - <http://tools.ietf.org/html/draft-nichols-tsvwg-code>

Problem Statement

- Bufferbloat exists in routers, lower-layer switches, and other middleboxes (in hardware, drivers, and software)
- Absorbing bursts is good; causing undue delay and jitter is bad

Benefits of AQM

- AQM and separation into multiple queues can:
 1. help flow sources control their sending rates before the onset of necessary losses, e.g. through ECN
 2. help minimize delays for interactive applications
 3. help protect flows from negative impacts of other more aggressive or misbehaving flows

Desired Outputs

- Informational and Best Current Practices documents that cover the design, use, and configuration of algorithms for managing queues in Internet devices and software.
- Algorithm specifications that are found to be broadly applicable and beneficial

IETF-87 AQM BoF Agenda

Topics	Speaker	Time
Introduction & Background	Chairs	17:00
Recommendations	Fred Baker (Cisco)	17:05
PIE (Proportional Integral Controller Enhanced)	Rong Pan (Cisco)	17:15
[FQ-]CoDel	Andrew McGregor (Google)	17:30
Algorithm discussion	Group	17:45
BoF Questions	Chairs	18:00
Adjourn BoF	Chairs	<18:30

Algorithm discussion

Similarities

- Use delay rather than occupancy
- Minimal tunable parameters
- Permit high link utilization
- Intend to permit efficient implementations
- Both are promising
 - Better than drop tail, RED
- Incremental deployment

Differences

- PIE
 - Drop before enqueue
 - Compute drop rate from departure rate and queue length
 - Decoupled from FQ/CBQ implementation
- FQ-CoDel
 - Drop at Dequeue
 - Drop based on inferring a „bad“ standing queue
 - Recent CoDel work includes emphasis on integrating FQ/SFQ aspects with the AQM

Impact to Vendors

- RED is implemented today
 - May not be used often; may not perform well
 - Not viewed as effective solution to bufferbloat
 - Vendors will need to implement one or more new algorithms to benefit from them
- In designing the new algorithms, implementability is a major goal
 - Should take existing architectures into account, though may involve updates to hardware/firmware
 - Where the queues are (ingress or egress) and where the computation is done or the drops/ECN are performed is important
 - Fred Baker example: Cisco GSR did not implement ECN because queue was on ingress but RED implementation was on the egress

MANIAC Challenge

- Copy of the slides are at:

[http://emmanuelbaccelli.org/MANIAC/
\(2013-07\)MANIAC-2013-IRTF.pdf](http://emmanuelbaccelli.org/MANIAC/(2013-07)MANIAC-2013-IRTF.pdf)

AOB

- Opportunistic Routing based on Users Daily Life Routine
 - Author couldn't travel
 - <http://www.ietf.org/id/draft-moreira-dlife-02.txt>
 - Might be worth reading
- Mentors
 - To help you
 - To help others
 - <https://www.ietf.org/resources/mentoring-program.html>
- Implementation status
 - RFC 6982
- Open Mic...