

Routing Area Open Meeting Toronto, July 2014

Area Directors

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- Please state your name clearly before speaking at the microphone
- Audio streams and jabber
 - <http://tools.ietf.org/agenda/90/>
 - 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
 - It's on the wiki now
- Blue Sheets
 - Are now scanned and published
- Minutes
 - Chairs please send your notes to Deborah

Today's Agenda

- Administrivia
- KARP closed
 - Many thanks to Joel and Brian, and the WG
- Working Group and BoF Reports
- Improving work in the Routing Area
- Open Discussion / Any other business

Working Group and BoF Reports

- ACTN *
- BFD *
- CCAMP *
- FORCES *
- I2RS *
- IDR *
- IS-IS
- L2VPN *
- L3VPN *
- MANET *
- MPLS *
- NVO3 *
- OSPF
- PCE *
- PIM
- PWE3 *
- ROLL *
- RTGWG *
- SFC *
- SIDR *
- SPRING *

ACTN BoF Update

- Meeting was today: July 24, 2014
- Thanks to Andy Malis for taking notes and Sue hares for jabber scribing
- Good attendance (over 100)
(suspicious front row)



- A variety of Use Cases discussed:
 - Multi Tenant VNO use case
 - Data Center Operator: Multi-domain Data Center Interconnect
 - Transport Network Operators: On-demand E2E Connectivity Services
 - Mobile Network Operators
 - Research: EPSRC TUCAN Project
- There was a clear consensus on the problem space.
- Continue to discuss on list and consolidate use cases and requirements
- See if we can construct a common problem statement and solution direction

BFD

- Thanks to Jared Mauch for jabber scribing and Acee Lindem for very complete minutes.
- BFD MIB drafts finally on way to RFC (hopefully complete soon after IETF)
- Energetic discussion during BFD meeting on new work:
 - Seamless BFD (newly chartered)
 - BFD Stability
 - BFD Directed Return Path
- Presentation on L2VPN BFD related features
- Proxy BFD interesting case. Depending on whether generically applicable, in BFD or if not, perhaps in MANET

CCAMP 90 Status Update

- 2 sessions scheduled – Monday & Wednesday
 - 1520-1650 Morning Afternoon Session II, Room: Tudor 7/8
 - 0900-1130 Morning Session, Room: Territories
- Highlights:
 - 2 new RFCs on OTN (G.709),
1 new RFC on extensions to support OAM
 - 2 related documents with AD, 1 other with Authors/Shepherd
 - 6 WSON documents soon to be submitted for publications
 - Data plane technologies in processes
 - Flexible (optical) grid (WG) and WSON Impairments validation (individual)
 - Cross layer/domain control
 - Agreed to pool 1st related document for WG adoption
 - Multiple “small” topics discussed
 - A number likely to end up as WG documents
 - Some notable topics:
Network assigned labels, Variable bandwidth links,
Update to automesh

ForCES status

- We are behind in our charter by 8 months
- 3 out of 5 charter items moving towards publication
- Last two to start before next meeting
- We hope to recover 4 months before we shutdown/recharter
- Shooting to have Honolulu as our last meeting
 - Done all publications by March time frame

I2RS

- Thanks to Wes George for jabber scribing and Linda Dunbar for minutes.
- Wrapping up process documents:
 - Architecture and problem statement ready to be published.
 - Use cases will be gathered into a summary document.
- Need to recharter to show we can work on data models.
- IPSE draft presented to give WG a feel for models we can leverage.
- Several Info Models covered that we'll be adopting.
- Low WG interaction but impressive number of people reviewed complicated documents.
- Design teams will be formed to work on data models and associated info models.

IDR Summary (1 of 2)

Documents

- 3 RFCs (7153, 7159, 7300)
- RFCs real soon (2-4 weeks)
 - draft-ietf-aigp, draft-enhanced-route-refresh
- Upcoming WG LC:
 - draft-ietf-idr-flowspec-redirect-rt-bis [7/25 – 8/8]
 - Draft-ietf-idr-as-migration [8/8 – 8/22]
 - draft-idr-bgp-gr-notification [8/22 – 9/5]
 - draft-ietf-idr-error-handling [9/5 – 9/19]
 - draft-gredler-idr-ls-distribution [9/19-10/1]
- Adoption calls
 - draft-vandavelde-idr-remote-next-hop-07 [7/22 – 8/4]

IDR Summary (2 of 2)

Session topics

- **Next-hop issues**
 - draft-vandeveldede-idr-remote-next-hop-07,
 - draft-zhang-idr-nexthop-path-record-00)
- **RTC issues**
 - draft-rosen-idr-rtc-no-rt-00
 - draft-dong-idr-rtc-hierarchical-rr-00
 - draft-litkowski-idr-rtc-interas-00
- **BGP-LS/BGP SFC**
 - draft-previdi-idr-bgpls-segment-routing-epe-00
 - draft-dong-idr-inter-as-te-link-distribution-00
- **AS Migration:** draft-ietf-idr-as-migration-01
- **MPLS:** draft-li-idr-mpls-path-programming-00
- **Flow specs:** draft-litkowski-idr-flowspec-interfaceset-00
- **Time stamp:** draft-litkowski-idr-bgp-timestamp-00

L2VPN WG Status

- New RFCs:
 - RFC 7152 (was etree-reqt)
 - RFC 7209 (was evpn-req)
 - RFC 7257 (was vpls-mib)
 - RFC 7309 (was vpls-inter-domain-redundancy)
- With IESG:
 - draft-ietf-l2vpn-etree-frwk-06 (“revised I-D needed”)
 - draft-ietf-l2vpn-evpn-07 (“revised I-D needed”)
 - draft-ietf-l2vpn-ipls-14 (in Last Call. Will be “historic”)
 - draft-ietf-l2vpn-vpls-ldp-mac-opt-13 (in RFC Ed Queue)
- WGLC: etree solution, pbb-evpn, pim-snooping
- Full agenda in Toronto

L3VPN

- Good dynamics
 - Attendance stable ~80p
 - More discussion slot requests than what we served
 - 1 new RFC, 4 new WG documents, 5 WG LC
 - Good support from room to accept new work
 - 5 documents
- Efficient interactions with other WGs
- Improvements
 - a bit behind our milestones
 - welcoming more engagement/reviews on important and valuable mVPN work items

MANET Status Update – IETF90

- 8 new RFCs
 - RFC7181(was draft-ietf-manet-olsrv2)
 - RFC7182 (was draft-ietf-manet-rfc6622-bis)
 - RFC7183 (was draft-ietf-manet-nhdp-olsrv2-sec)
 - RFC7184 (was draft-ietf-manet-olsrv2-mib)
 - RFC7185 (was draft-ietf-manet-olsrv2-metrics-rationale)
 - RFC7186 (was draft-ietf-manet-nhdp-sec-threats)
 - RFC7187 (was draft-ietf-manet-olsrv2-rmpr-optimization)
 - RFC7188 (was draft-ietf-manet-nhdp-olsrv2-tlv-extension)
 - **One of two main charter items completed** (proactive MANET protocol)
- WGLC completed:
 - draft-ietf-manet-olsrv2-multitopology
- Several new adopted WG drafts:
 - draft-ietf-manet-ibs (identity based signatures for MANET routers)
 - draft-ietf-manet-nhdp-optimization (updates RFC6130, improves performance)
 - draft-ietf-manet-olsrv2-dat-metric (directional airtime link metric for OLSRV2)
 - draft-ietf-manet-olsrv2-management-snapshot (“how/what/why are OLSRV2-based MANETs managed today?”)

MPLS WG Status (1 of 2)

- **Two wg sessions this week**
 - **Tuesday morning (very successful)**
 - **MPLS architectural principle**
 - **We receive drafts that might not be with MPLS architecture or revisit previously rejected ideas**
 - **Next session on Friday morning**
- **8 new RFCs**
- **# of documents in RFC Editors Queue and in IESG review constant**

MPLS WG Status (2 of 2)

- **We have worked quite systematically with wg processes**
 - Early chair reviews, MPLS-RT, IPR polls, language/readability reviews
 - We would need a some time to test, refine and evaluate
- **Done one English language review**
 - Outcome very good
 - Looking to have authors request this type of review when they think it is necessary

NVO3

(Status for Routing Area Meeting)

- Document Status
 - 2 drafts in Editor's Queue
 - Problem Statement and Framework
 - Plan to finish Reqs & Use-cases by IETF 91
 - Parking the Gap Analysis document
 - Ongoing development of Architecture document
- Re-chartering
 - Plan to re-charter by IETF 91
 - Focus on Solutions / Protocols based on Framework and Architecture documents
 - Centralized NVA, IP-based underlay data plane, ...
- Planning interim(s) to make progress on ↑ items

PCE WG Status (1 of 3)

- No new RFC since IETF 89
- In RFC Editor's queue
 - Inter-domain P2MP procedures
- IESG's review
 - Questions about PCE (update needed)
- Passed WG LC
 - PCEP MIB
 - WDM requirements on PCEP
 - GMPLS extensions in PCEP
- In our WG LC queue
 - WDM-specific extensions
 - Inter-layer extensions
 - Extensions for stateful/active PCE

PCE WG @ IETF 90 (2 of 3)

- Stateful/active PCE
 - 1st set of I-Ds almost ready for WG last call
 - extensions, PCE-initiated, applicability...
 - codepoint collision in some early implementations
 - no request for early allocation but values in I-Ds
 - IANA did (legitimate) allocation to RFC 7150
 - RFC 7150bis is already WG I-D
 - implementers of 7150 should signal themselves
 - otherwise alternate codepoint will be requested
 - must be fixed before moving forward
 - newer I-Ds on path protection, LSP groups...

PCE WG @ IETF 90 (3 of 3)

- Fix of “Include Route Object” (IRO) Definition
 - RFC 5440 (PCEP) does not state “ordered”
 - can “ordered by default” be assumed?
 - what about loose option?
 - implementation survey is in progress
 - implementers' feedbacks are welcome
- Individual items possibly impacting other WGs
 - PCE discovery: DNS, BGP...
 - several I-Ds related to Spring, SFC...

PWE3 Report – IETF 90 (1 of 2)

- Three RFCs since last IETF:
 - VCCV Capability Advertisements for MPLS-TP: RFC7189
 - Dynamic Placement of Multi-segment PWs: RFC7267
 - ICCP for L2VPN PE Redundancy: RFC7275
- One draft in RFC editor's queue:
 - P2MP PW Requirements (draft-ietf-pwe3-p2mp-pw-requirements)
- One draft with IESG:
 - Explicit Route for Dynamic MS-PW (draft-ietf-pwe3-mspw-er-04)
 - WG Last Call:
 - draft-ietf-pwe3-endpoint-fast-protection-00
 - No comments in WG last call
 - WG would appreciate review and comments
 - draft-ietf-pwe3-iccp-stp-00

PWE3 Report – IETF 90 (2 of 2)

- Don't meet until Thursday afternoon, but agenda highlights:
 - ICCP application to PON
 - Encap of PSC (MPLS-TP linear protection) on MS-PWs
 - Dual homing protection for MPLS-TP PWs

ROLL

- IETF 90
 - Updates on: draft-ietf-roll-applicability-template.
 - Updates on: draft-ietf-roll-security-threats → Submitted to the IESG
 - Updates on: **draft-ietf-roll-mpl-parameter-configuration**
 - Updates on: draft-ietf-roll-admin-local-policy → In progress
 - Updates on: draft-ietf-roll-applicability-ami → Tickets open
 - Updates on: draft-thubert-6man-flow-label-for-rpl → WGLC in 6man and ROLL
- draft-ietf-roll-trickle-mcast → Submitted to the IESG
- draft-ko-roll-mix-network-pathology → related I-D
- New Milestone: WG to joint-LC using flow-label for RPL with 6man draft-thubert-6man-flow-label-for-rpl

rtgwg Summary (IETF 90)

- Advanced Multipath
 - ‘Requirements’ published as RFC7226
 - ‘Use Cases’ completed WGLC (waiting for shepherd write up)
- WGLC Complete
 - Remote LFA FRR
 - Multicast only Fast Re-Route
- Meeting Agenda:
 - 2/6 WG items (FRR focus)
 - New Work:
 - Link State protocols SPF/Delay Algorithms (2-step and exponential)
 - Transport Independent OAM in Multi-layer Network Entity (TIME)

SFC IETF 90 Summary

- Service Function Chaining (SFC) WG; chairs: Guichard/Narten
- 2nd meeting as WG
- 200+ attendees, full agenda, 40+ drafts with “-sfc-” in draft name
- draft-ietf-sfc-problem-statement-07.txt finished WGLC, re-spin for editorial changes, then to IESG
- Discussion on how (and whether) to formally document requirements
- Use case documents (intended to feed requirements/architecture)
 - Adopted 3 WG documents since London
 - Continued discussion about adoption of possible 4th document
- Architecture: appears to be converging to one merged document; re-spin then ask for WG adoption
- Initial discussion of OAM framework for SFC
- SFC header format proposals
 - 2 documents, significant reduction in differences since London
- Presentation on (multi-vendor) OpenDaylight implementation of SFC
 - Implements SFC encapsulation; Centralized control plane for SFC environment

SIDR

SIDR meets Friday morning.

Since the last meeting, publication was requested for two drafts; one is in the RFC Editor queue and the other is in IESG evaluation.

SIDR had a lot of good review from idr on a sidr draft, and results will be discussed in the meeting.

SIDR requested idr attention to the bgpsec protocol. (The sidr agenda has been changed to put the bgpsec discussion first to facilitate their participation.)

Last meeting saw an energetic discussion of a change to a central definition of the semantics of the work, in order to reduce impact from operational lapses. The problem and error description part of this work was adopted by the working group as a precursor to working on a solution.

SPRING

- Ready to last call problem statement/use case docs
 - Goal: advance before Honolulu
 - Not looking for any new use cases unless they drive new requirements!
- Revised architecture document promised soon, will call for adoption
 - Goal: WGLC by Honolulu

State of the Routing Area

One Thousand Flowers Blooming in the Routing Area Earlier Today



IETF-90 : Toronto, Canada : July 2014

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What is Hurting?

- What's hurting the Area?
 - Authors lose interest and focus (after WG adoption)
 - Jobs change, priorities change, excitement wanes
 - Timeouts take the place of review and consensus
 - WG participants don't participate
 - We see authors, "tag-alongs", and voters
 - WG chairs don't manage (enough)
 - Not yet skilled magicians/puppeteers
 - Hard to start important new work
 - Easy to introduce distracting irrelevant work
- What's hurting the ADs?
 - All of the above!
 - ADs end up doing the technical reviews
 - ADs end up micromanaging
 - ADs review documents no-one cares about
 - If energy is lacking, how do we judge importance?
 - We take convincing before we will start new work
 - We can work miracles, but the impossible may take a little longer

What Are We Going to Do About It?

- Routing Directorate
 - Thanks Jonathan and Deborah
- Routing Area Wiki
- Tools
- WG Chairs training
 - <http://trac.tools.ietf.org/area/rtg/trac/wiki/WGChairTraining>
- WG Chairs communication
- I-D QA
 - <http://trac.tools.ietf.org/area/rtg/trac/wiki/RtgDirDocQa>
- English language review team
 - <http://trac.tools.ietf.org/area/rtg/trac/wiki/RtgEnglish>
 - Need volunteers!
- Encourage (i.e., require) cross-WG review at WG I-D adoption
- Bribe participants with beer, chocolate, and kibble
- Use charters to guide and prioritise work
- Tune the work-split in the area



Routing Area Wiki

- <http://trac.tools.ietf.org/area/rtg/trac/wiki/WikiStart>
- Current content
 - Background info about the Area, WGs, and mailing lists
 - Collection of useful tools
 - Routing Area Directorate pages
 - Collection of information on quality improvement of documents
- It's a wiki
 - You should read it
 - Can you find the Easter Eggs?
 - It's fluid
 - You can edit it
 - You can add anything you want
 - You can fix errors
 - It is your wiki

Tools

- Better visibility of existing IETF tools
 - What exists and is useful
 - How to use the tools
 - There is a page on the wiki where you can add ideas
- New IETF tools or modifications?
 - Just ask!
 - Come and help at code sprints or all year
- The working group charters are a tool
 - For controlling and allowing work
- Move towards “new” collaborative tools
 - Plenty available
 - SVN
 - Git
 - Pioneering efforts across the IETF
 - Early stage research (httpbis, netmod, ...)
 - Welcome cautious experiments
 - Some issues about IPR and copyright still to be resolved
 - Still very important to check in I-Ds
 - Base reference for archive and other users

WG Chair Training

- Chairs do a great job
 - We can always improve
 - Many “performance” issues could be improved with better management and techniques
- Started a program of training for RTG chairs
 - Objective is “How to make stuff happen better”
 - Virtual meetings for sharing experience and raising issues
 - Virtual meetings for specific training
 - Next topics
 - Consensus: how to judge it, drive it, and handle its absence
 - People management: how to say no
- This is all on the wiki
 - We will archive material as well

Document Review

- Quality Assurance
 - Objective: get quality sooner in the process
 - Fix bugs before implementation/deployment
 - Routing Directorate member assigned to each document when considering for WG adoption
 - See the details on the wiki
- English Language
 - Limited experience in MPLS shows this can be valuable
 - This is a volunteer team
 - Please go to the wiki and volunteer!
 - Authors or chairs can put an I-D in the pool and request review
 - See the details on the wiki

Tuning Some Working Groups

- We are not trying to solve all problems with these changes
- Some of the changes might not specifically solve and be traceable back to issues listed earlier
- You have every right to be paranoid
 - Don't break what is working well
 - Don't do change for the sake of change
- We have to manage the area:
 - To get done the work you want to do
 - To get quality and timeliness
 - In a way that doesn't kill the ADs
- It's a balancing act
 - Tuning is needed from time to time

What is Tuning?

- We are not changing what work is done in the area
 - This is about making space to have focused groups to do the work
- We have been taking opinions from lots of people for a number of months
- Lunch on Tuesday with chairs and Directorate
- We do care about your opinions and you have shaped our opinions
- And we are going to make some changes

Objectives of Tuning

- Organise work along functional lines
 - Group together that which is similar
- Avoid massive and tiny working groups
 - Critical mass
 - Ownership and focus
 - Avoid “bystander” effect
- Improve SNR inside each working group
 - Noise is...
 - Good stuff others care about but I don't
 - Bad stuff that provides no entertainment
 - Arguments about trivia and process
 - Rehashing previously resolved topics
 - Gap-filling
 - Fringe issues and topics
- Facilitate new work

Tuning the WGs is not the only tool for some of these issues

Core Routing Protocols

- IDR
 - Joint meetings with SIDR to cover BGPsec
- Multicast routing working group
 - PIM and IGMP/MLD etc.
 - Multicast routing architecture
 - mcast –over-foo stays in FOO WG (e.g., VPNs)
 - Solutions for mcast for specialist networks stays in protocol WG (MANETs etc.)
 - Cross-review of mLDP
 - Cross-WG review of all mcast
- OSPF
- ISIS

Routing Services

- BGP-enabled services working group
 - L3VPN
 - EVPN from L2VPN
 - BGP-based solutions for DC from NVO3
 - BGP extensions will be reviewed in IDR
- LDP-enabled services working group
 - PWE3
 - PW enabled L2VPN
 - LDP extensions will be reviewed in MPLS
- NVO3 : Data Center VPN working group
 - Protocols to support the centralised control DCVPN architecture
 - (not the BGP-based solutions)
 - New encapsulations as needed
- SFC

Core Routing Function and Architecture

- BFD
- MPLS
 - Architecture
 - Dataplane
 - LDP and mLDP
 - MPLS OAM
- Traffic Engineering Architecture and Signaling working group (TEAS)
 - RSVP-TE from MPLS
 - RSVP-TE from CCAMP
 - TE Architecture
 - IGP-TE in cooperation with OSPF and ISIS WGs
- CCAMP: Sub-MPLS Control Plane WG
 - Technology specific signaling and routing from CCAMP
 - Cross-review with TEAS, OSPF, and ISIS WGs
 - LMP from CCAMP
- PCE
- I2RS
- SPRING

What's Left?

- MANET
- ROLL
- ForCES
- SIDR
- RTGWG
 - Chartered for specific small topics on-demand
 - Fast reroute for hop-by-hop routing
 - Dispatch new work
 - Venue for mini-BoFs
 - Routing Directorate shepherds for mini-BoFs
 - Individual I-Ds
 - Reduce load of AD-sponsored drafts
 - Improve review

Your New Routing Area

- BESS (BGP-Enabled ServiceS)
- BFD
- CCAMP (sub-MPLS control plane)
- ForCES
- I2RS
- IDR
- ISIS
- LES (LDP-Enabled Services)
- MANET
- PIM (Multicast routing)
- MPLS
- NVO3 (DCVPN)
- OSPF
- PCE
- ROLL
- RTGWG
- SFC
- SIDR
- SPRING
- TEAS (Traffic Engineering Architecture and Signaling)

Next Steps for WG Tuning

- Past
 - Mailing list discussions (2 months)
 - One-on-one discussions (9 months)
- Toronto
 - Office hours
 - Chairs/directorate meeting
 - Corridors
 - This meeting (Routing Area Open Meeting)
- Now until September
 - Charter drafting with ADs/Chairs/Everyone
 - WGs continue to run as currently chartered
- October
 - Rechartering completes
- IETF-91
 - Working groups meet
- Post-IETF-91
 - Fine tuning (aka bug fixing)

Discuss...

AOB

- Closed the SCALE mailing list
 - Take your VPN scaling issues to L2VPN and L3VPN
- NomCom
 - Soon requesting nominations
 - You need a new Routing AD!
- Open Mic...