IPv6 Operations (v6ops) - IETF 117
Tuesday July 25 9:30-11:30, Plaza B
Meetecho link: https://meetecho.ietf.org/conference/?group=v6ops

Chairs Opening, 5m
Salutation from the chair, note well presented, house keeping, agenda presented (4 WG drafts, 6 individual drafts).
Side meeting on Thursday introduced.

WG drafts increasing steadily, individual drafts number declining.
Question to the room: how to measure WG quality?
Brian Carpenter's book: progressing but calling for more supporters.
Next thing: Enterprise IPv6 issues, working on a BCP, others invited to join.
Other tasks: investigate the disconnection of users % from IPv6 traffic %

WG Drafts

Selectively Isolating Hosts to Prevent Potential Neighbor Discovery Issues and Simplify IPv6 First-hops, XiPeng Xiao, 10m
https://datatracker.ietf.org/doc/draft-ietf-v6ops-nd-considerations/

ND issues come from 3 main causes: multicast, trusting all hosts, router-NCE-on-demand. It's easier to deal with 3 causes than 15 individual issues.
Not proposing to always do host isolation, but going through the guidelines to decide whether to do so would help
5 isolation mechanisms are not independent. They yield 6 meaningful combinations that cover all basis. Guidelines are provided on how to select a suitable isolation method.
Draft is relatively stable now. Plan to request for WGLC.

No question raised.

Architecture and Framework for IPv6 over Non-Broadcast Access, Pascal Thubert, 10m
https://datatracker.ietf.org/doc/draft-ietf-6man-ipv6-over-wireless/

Work happening in 6man but with impact in v6ops.
Architecture for IPv6 in P2P networks (e.g. wireless which is symmetrical and non-transitive).
IPv6 ND over multicast emulation not wireless friendly.
Issue with SLAAC (either you use SLAAC snooping or broadcast, otherwise destination not reachable).
From transit to NBMA is a design point for IPv6.
Question for the room is how to refine the overlap with Xipeng's draft. This latter more theoretical, this one provides more examples.

Conclusion: missing link from DHCP and routing.

Q. Lorenzo Colitti: architecturally draft is on ND but what you said is not ND-related. It is just a service discovery problem.

A. Pascal: Partially, ND has special requirements

Lorenzo: multiscope nets: this is a big problem. It's not just discovery.

A. Pascal: ND is what has to match the broadcast domain. Still IPv6 layer has to do other tasks.

Lorenzo: wrong conclusion that ND problems are connected to broadcast.

A. Pascal: giving examples

Lorenzo Colitti: It is a request for infrastructure to be aware of host intentions.

A. Pascal: applicability statement should be discussed more.

Framework of Multi-domain IPv6-only Underlay Networks and IPv4 as a Service, Chongfeng Xie, 10m
https://datatracker.ietf.org/doc/draft-ietf-v6ops-framework-md-ipv6only-underlay/

Giving an update on underlay and IPv4aaS.
Thanks to the reviewers.
Update from IETF 116 and system implementation and test presented.
Examples of IPv6-IPv4 autoconfig presented.
Cases for support of IPv6/IPv4 to IPv4/IPv6 discussed.
Next steps: get comments and plan to demo @ IETF 118.

No question raised.

Using DHCP-PD to Allocate Unique IPv6 Prefix per Device in Broadcast Networks, Jen Linkova, 20m
https://datatracker.ietf.org/doc/draft-ietf-v6ops-dhcp-pd-per-device/

Changes from IETF 116. The draft now does not prescribe prefix length (no more /64).
Discussion on why SLAAC is mandatory and concerns raised on routers vs endpoints.
All points left from IETF 116 discussed.
Any remaining open issues? Ready for WGLC?

Timothy Winters: terminology is based on 8200. We have routers and hosts in RFC 8200, "devices" is misleading.
Ted Lemon: how does the work relate to SNAC?
Lorenzo: SNAC router could advertise some information. This device could not.

Pascal: question on Mobility support for multi-link subnet.
Jen: simplify routing because less prefixes.
Lorenzo: changing the link is not relevant to the discussion. These are orthogonal questions.

XiPeng did a poll to see how many have read the drafts: 5 reads, 15 haven't read. Need more people to read the draft.

Individual Drafts

Use of the IPv6 Flow Label for WLCG Packet Marking, Dale Carder, 10m
https://datatracker.ietf.org/doc/draft-cc-v6ops-wlcg-flow-label-marking/
Dale Carder, with Tim Chown in the room.
To bypass restrictions of EHs (that are filtered).
EsNET6 is an infrastructure built on distributed networks.
Characteristics of the network presented.
Use of flow label presented (community identifiers+activity ID+entropy).
References considered and alternatives considered and discussed in the draft.
Like to ask for adoption.

Lorenzo: first innovative use of flow label. Does it work? Do routers look at entropy? Also looked at 6307, how about cross-domain?

A. in the limited domain it is fine.

Bob Hinden: supports high-definition flow label. Not sure you are documenting something operational, it seems not a draft.

A. Not my intention

Tom Herbert: innovative. The mechanisms has limit. 16-bit info does not scale. There 2 other proposals where people want info to be consumed by middle-boxes. I see opportunity for HbH options. Probably remove DOH.

A. yes

Warren Kumary: awful but understand why you did it. 5 bits is not enough for entropy. It seems routers are using them, so cool.
Julian: had a bad experience with flow changes in the transit. Remove the flow label to avoid disturbing caused by hashing. We turned off by default. Good if you are not doing anything harmful.

Deep Dive into IPv6 Extension Header Testing: Cloud, Nalini Elkins, 10m
https://datatracker.ietf.org/doc/draft-elkins-v6ops-eh-deepdive-cloud/
Issue with the projector/slide size.
We did troubleshooting, not broad scale measurement. This is done after we rolled out our bench.
2 providers offered to support us and 2 vendors.
Any intervening topology between client and server may be a problem, so we used real HTTP traffic.
Quite a few ways you can do topologies…
Bottom line: 1st test with no EH – just fine from noname host to the inside host.
Realistic topology looks different what we expect. A cloud provider supported to find issues.
Cloud provider #2 did differently. Everything worked correctly but ECMP checksum not working

properly when EH present.
Next steps. Target to test w/ other people

IPv6 Site connection to many Carriers, Paolo Volpato, 10m
https://datatracker.ietf.org/doc/draft-fbnvv-v6ops-site-multihoming/
NAT/NPT is not promoted

Lorenzo Colitti:

1) “No E2E” violates business requirements. Add strict requirements for E2E. Asking to delete all NAT/NPT cases.

2) It is difficult to change the policy table for ULA.

A. Paolo: We would look at that. Many people on the list had different opinions.

Jen Linkova: ULA should be discouraging more. ULA is not compatible with IPSec. Maybe other applications that would not work with ULA. Lorenzo: IPSec would be broken.

Geoff Huston (chair of shim6): It is the old conversation, carefully discussed in shim6. Many important points: 1) IPv6 is against NAT. 2) Multi-homing is primarily for failover. 3) The source address choice is important. 4) Source routing is mandatory.
The problem is very complex. The document has nothing new.
NANOG expressing negative opinion on letting hosts make MH decisions.

Extension Header Use Cases, Mike McBride, 10m
https://datatracker.ietf.org/doc/draft-mcbride-v6ops-eh-use-cases/
Background on EH
Routing EH use cases example presented

Is this something the WG want to tackle

Lorenzo: read the draft, useful document, giving advise on more use cases.
Tom Herbert: useful to document
Tom Herbert: What is the expected outcome? EH is a chicken and egg problem, if no deployment then no use cases.

A. just document use cases

Lorenzo: It is possible to make EH work. useful for someone not familiar with v6
Tom: good answer, make the argument why they may be useful

Mikael Abrahamsson:: +1, useful for education

Bob Hinder: IPsec is an EH. It is an example of a good deployment

IPv6 only iterative resolver utilising NAT64, Momoka Yamamoto, 10m
https://datatracker.ietf.org/doc/draft-momoka-v6ops-ipv6-only-resolver/
Problem statement and informational solution

Responded to feedback and next steps.
IPv6-only DNS resolver to connect to IPv4-only DNS authorities server. DNS64 would be deleted, CLAT (with pref64) would be promoted.
Lorenzo: CLAT looks redundant for IPv6-only servers.. Good idea to update RFC 3801 BCP – every recursive should be capable to access the IPv4 internet
Warren: does not matter what would be the home (v6ops or DNSop) for this draft – both groups would be on a copy.

IPv6 CE Routers LAN Prefix Delegation, Tim Winters, 10m
https://datatracker.ietf.org/doc/draft-winters-v6ops-cpe-lan-pd/
Flat vs Hierarchical models presented.
Major changes to -03 discussed.
Prefix delegation on the LAN discussed.
Lorenzo: add that flat is more efficient. Hierarchical not forbidden, but document it.
How it would not break multi-homing? (Despite that MHMP was put out of the scope).

A. I would think about MHMP

Michael Abrahamsson: Is it about hosts?

A. it is only about routers..