

APN Summary and Drafts Updates

Gyan Mishra/Shuping Peng
on behalf of all the co-authors

Summary of APN History @ IETF

Year	IETF	New Drafts	Presentation	SM or BoF	Hackathon	Progress achieved
2019.03	104	Framework (APN6)	RTGWG			Started the work
2019.07	105			1 st SM, 50+ attended		Gathered an interest team
2019.11	106	Problem Statement & Use cases (APN6)	RTGWG			Started exploring use cases
2020.03	107	Framework (APN) Problem Statement & Use cases (APN)		1 st BoF, not approved		Narrowed down the scope Published new drafts
2020.07	108		RTGWG	2 nd SM, 60+ attended	1 st	Clarified the history attempts
2020.11	109	Security & Privacy		2 nd BoF, tentatively approved, not held	2 nd	IESG suggested to further clarify in more areas
2021.03	110	Scope & Gap Analysis	RTG, INT, ART, SAAG, 4 areas	3 rd BoF, withdrawn	3 rd	Cleared the scope and analyzed the gap
2021.06	Interim		RTGWG			Well prepared for the BoF
2021.07	111			4 th BoF, approved, held		220+ attended from all IETF areas, clear interest, got AD's suggestions
2021.11	112	Data plane Control plane Management plane	RTGWG			Systematically address questions raised in BoF. New revisions and new drafts posted.

Closure of the Issues received during the APN BoF

- Discussed in the mailing list and recorded in the Github

Subject	
[Apn] Issues to be closed #33-#38	[Apn] Issues to be closed #33-#38 "Pengshuping (Peng Shuping)" <pengshuping@huawei.com>
Re: [Apn] Issues to be closed #33-#38	Hi Adrian, all,
Re: [Apn] Issues to be closed #33-#38	All the issues to be closed are going to be listed in this link
[Apn] Issues to be closed #27-#32	Following the issues we posted before, we post our responses to in the Chairs' Summary section at the end of the BoF. Thanks to key issues over the BoF.
[Apn] Issues to be closed #22-#26	
[Apn] Issues to be closed #19-#21	
Re: [Apn] Issues to be closed #19-#21	Please either leave your comments in the mailing list or directl
Re: [Apn] Issues to be closed #19-#21	
Re: [Apn] Issues to be closed #19-#21	33. Why APN is needed when there are multiple existing mechanis https://github.com/APN-Community/Issues/issues/33
Re: [Apn] Issues to be closed #19-#21	In the latest version of this gap analysis draft https://datatracker.ietf.org/doc/draft-li-apn-framework have been added to further clarify the differences between APN & resource partitioning techniques.
[Apn] Issues to be closed #16-#18	
[Apn] Issues to be closed #13-#15	
Re: [Apn] Issues to be closed #13-#15	34. How privacy affects APN, especially about accidental breach https://github.com/APN-Community/Issues/issues/34
Re: [Apn] Issues to be closed #13-#15	
[Apn] Issues to be closed #10-#12	
[Apn] APN Policy Enforcement	This draft https://datatracker.ietf.org/doc/draft-li-apn-framework encapsulation and removed together with the tunnel encapsulation Attribute Conveying Requirements https://datatracker.ietf.org/doc/draft-li-apn-framework acquired from the existing available information of the packet ID and the APN ID will be only meaningful to this network domain. 1 domain.
Re: [Apn] APN Policy Enforcement	
[Apn] Issues to be closed #5-#9	
[Apn] APN Bandwidth, Jitter, Letency and Loss Requirements	
Re: [Apn] APN Bandwidth, Jitter, Letency and Loss Requirements	
Re: [Apn] APN Bandwidth, Jitter, Letency and Loss Requirements	35. Use cases need to explain more about what is needed from the "killer" use case examples. #35

3

319 Messages

<https://mailarchive.ietf.org/arch/browse/apn/>

github.com/APN-Community/Issues/issues

APN-Community / Issues Public

Code Issues 34 Pull requests Actions

Labels Milestones

is:issue is:open

34 Open 4 Closed

Author Label Assignee Sort

38. Should APN be applied to multiple transport/underlay protocols or should it be better to pick just one and use it in all APN-enabled networks?
#38 opened 26 days ago by APN-Github

37. We also need more understanding of how APN is relevant in encrypted environments.
#37 opened 26 days ago by APN-Github

36. The APN attribute should not become a way of carrying arbitrary metadata. It is not clear at this stage what information needs to be in the APN attribute versus what information could be in the APN attribute.
#36 opened 26 days ago by APN-Github

<https://github.com/APN-Community/Issues>

APN Drafts Key Updates

- After BoF, we have updated the drafts and presented in IETF112.

<https://datatracker.ietf.org/meeting/112/materials/slides-112-rtgwg-apn-framework-gap-analysis-updates-00>

- The following are the key changes we made further.

APN works within a limited trusted domain.



APN is only applied to an edge-to-edge tunnel encapsulation within a limited trusted domain. It means that the source and destination addresses of the packet are the endpoints of the tunnel (i.e. the domain edges), and nothing about the payload source and destination can be deduced, which substantially reduces the privacy concerns.

With APN, the attribute is acquired based on the existing information in the packet header such as 5-tuple and QinQ (S-VLAN and C-VLAN) at the edge devices of the APN domain, added to the data packets along



With APN, the attribute is acquired based on the existing information in the packet header (i.e. source and destination addresses, incoming L2 (or) MPLS encapsulation, incoming physical/virtual port information, the other fields of the 5-tuple if they are not encrypted) at the edge devices of the APN domain, added to the data

Ask for RTGWG adoption of the Framework related documents

- The following drafts have been updated according to the comments received and confirmed by the commenters
 - Application-aware Networking (APN) Framework ([draft-li-apn-framework](#))
 - Problem Statement and Use Cases of Application-aware Networking (APN) ([draft-li-apn-problem-statement-usecases](#))
 - APN Scope and Gap Analysis ([draft-peng-apn-scope-gap-analysis](#))
- We would like to ask the RTG working group to adopt these drafts
 - We think there is a lot of interest and support for this work
 - We think this is a general routing architectural work which can be taken as a starting point for work

Thank you!