

Use-cases and Requirements for MPTCP Proxy in ISP Networks

Lingli Deng, Dapeng Liu, Tao Sun,
Mohamed Boucadair, and Gregory Cauchie

draft-deng-mptcp-proxy-01
ietf91@Honolulu

Why “Standard” MPTCP Proxy?

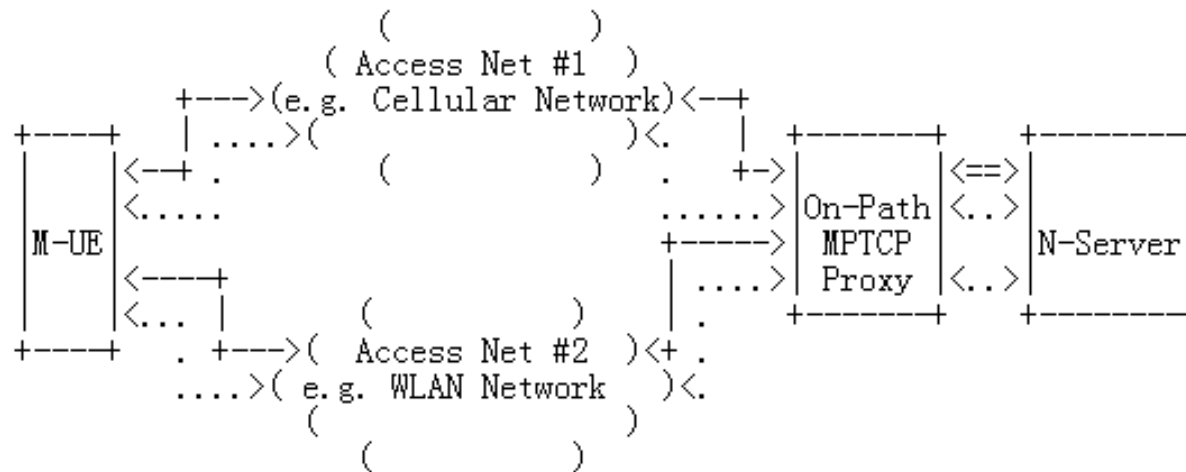
- MPTCP “Proxies” are **likely to be deployed** for various deployment reasons
- In the lack of an IETF endorsed specification, various implementations with **fuzzy behaviors** will be experienced
- MPTCP is already suffering from the presence of middleboxes, **let’s not add another trouble vector into the scene**

A Bunch of ISP Deployment Use Cases

- Boosting MPTCP Utilization
 - For M-UEs on behalf of N-Servers
 - For N-UEs on behalf of multiple access networks
- Resource Pooling from Multiple Networks
 - Flexible Proxy invocation/Pooling strategies depending on (i.e., subscribers, applications, and ISPs)
- Service Continuity
 - Multiple Connections and Seamless Handover between Multiple Networks/Access points
- Assist MTPCP Connection Establishment
 - Terminate or pass MPTCP signal from UE to Server

Deployment Considerations

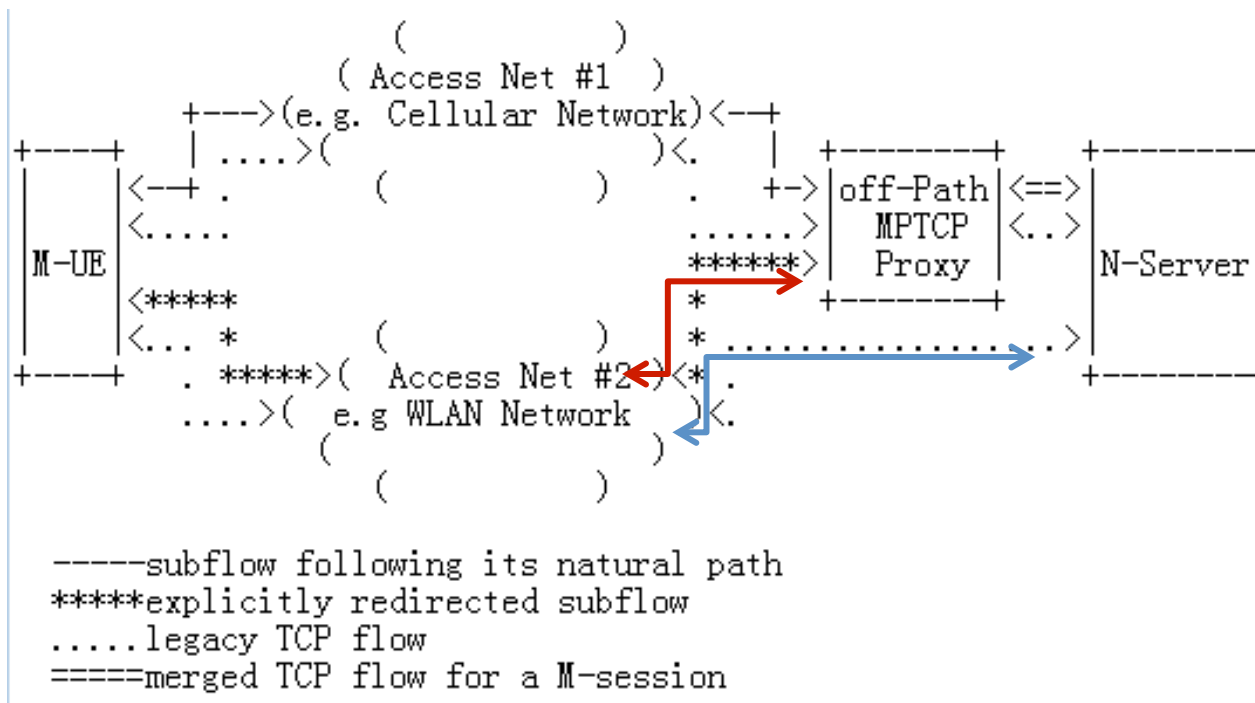
(1) On-path MPTCP Proxy



-----subflow of an M-session
legacy TCP flow
 =====merged TCP flow for an M-session

Deployment Considerations

(2) Off-path MPTCP Proxy



Updates since -00

- Received a few comments from the list
- Clarification on proxy's working modes
 - Take-over mode
 - terminate MPTCP from the terminal
 - Transparent mode
 - sits back if the server is also MPTCP capable
 - Hybrid mode
 - policy-driven combination of the two modes
- ... some minor editorial changes

IPR Disclosure: A Clarification

- Informational statements on
 - use-cases, deployment scenarios & basic functional requirements
 - with no known IPR issues
 - Bruno's third-party IPR disclosure is not relevant

*“the method comprising the steps of: **registering an Internet Protocol (IP) address of the subscriber end station with a domain name server to indicate that the subscriber end station is Multipath Transmission Control Protocol (MPTCP) capable**, wherein the edge router runs an MPTCP proxy to facilitate the subscriber end station having only the appearance to the second electronic device of being MPTCP capable but in actuality is TCP capable and not MPTCP capable, wherein the second electronic device is running at least one of MPTCP and MPTCP proxy.”*

What's Next?

- Observations
 - Shared interest among ISPs to study MPTCP proxy
 - With different deployment scenarios and policies
 - the current content became fairly stable
 - other usecases are emerging and not included
- What's next?