MPTCP proxy mechanisms
(draft-wei-mptcp-proxy-mechanism-00)

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Why MPTCP proxy is needed?
--An example

Currently most of servers on Internet are TCP server, and this situation will significantly prevent MPTCP-capable hosts to fully benefit from MPTCP.
Basic concept of MPTCP proxy
How could MPTCP proxy be deployed?

MPTCP proxy: off-path model

MPTCP proxy: on-path model
Mechanisms for off-path MPTCP proxy

1. Initial sub-flow setup with server
2. Inspect MPTCP initial sub-flow
3. Inform the existence of proxy to host, and set up sub-flow between host and proxy. (ADD_ADDR(proxy IP))
4. Set up TCP connection
5. Set up new sub-flow with proxy.
Mechanisms for on-path MPTCP proxy

1. Initial sub-flow setup with server
2. Inspect MPTCP initial sub-flow
3. Set up sub-flow between host and proxy.
4. Set up TCP connection
5. Setup new sub-flow with server
6. Inspect new sub-flow setup and set up sub-flow instead of server.

MPTCP proxy

Internet

TCP server
Extension to MPTCP protocol

A new flag 'P' in MPTCP MP_CAPABLE option needs to be defined, refer to RFC 6824, Section 3.1. This flag is used by proxy to inform MPTCP capable host the existence of proxy.

```
+----------------+----------------+------------------+
|                |                |                  |
| Kind           | Length         | Subtype|Version|A|P|C|D|E|F|G|H|
+----------------+----------------+------------------+
| Option Sender's Key (64 bits) |
+----------------+----------------+------------------+
| Option Receiver's Key (64 bits)  |
| (if option Length == 20) |
+----------------+----------------+------------------+
```