TCM-TF
Improvements according to the received feedback

- Tunneling Compressed Multiplexed Traffic Flows (TCM-TF)
  draft-saldana-tsvwg-tcmtf-06 (RFCDiff)

- Delay Limits and Multiplexing Policies to be employed with Tunneling Compressed Multiplexed Traffic Flows
  draft-suznjevic-tsvwg-mtd-tcmtf-02 (RFCDiff)

Problems: TCP optimization, Delays, PathMTU

Problem 1: TCP congestion control is governed by RTT. So new multiplexing delays may be translated into a reduced throughput.

Solution: The possibility of TCP optimization has been removed.

Problem 2: Additional delays to real-time services.

Solution: The new charter considers the problem and remarks the cases where TCM-TF is interesting.

The "recommendations draft" is about additional delay limits tolerable by each of the considered services.

Problem 3: Potential PathMTU issues (common to tunneling mechanisms).

Solution: The current version of the Charter remarks the problem.

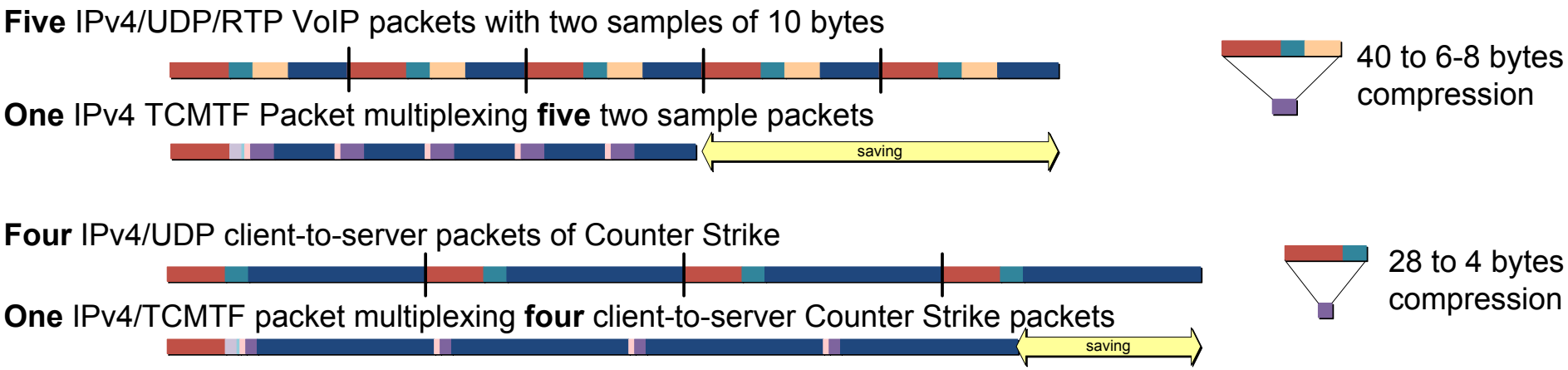
The "recommendations draft" (section 4) also considers MTU limit as a mechanism for triggering a new optimized packet.

ROHC

Problem: Why is ROHC not a solution?

Answer:

- ROHC is enough if you are considering **a L3 single hop**. It reduces the size of the headers dramatically. When the header and the payload are in the same order of magnitude, the saving is significant.
- Scenarios with **a number of flows sharing a number of L3 hops** have been identified (as explained in the previous presentation) . So ROHC is tunneled, and a number of multiplexed packets from different flows **share the tunnel overhead**.

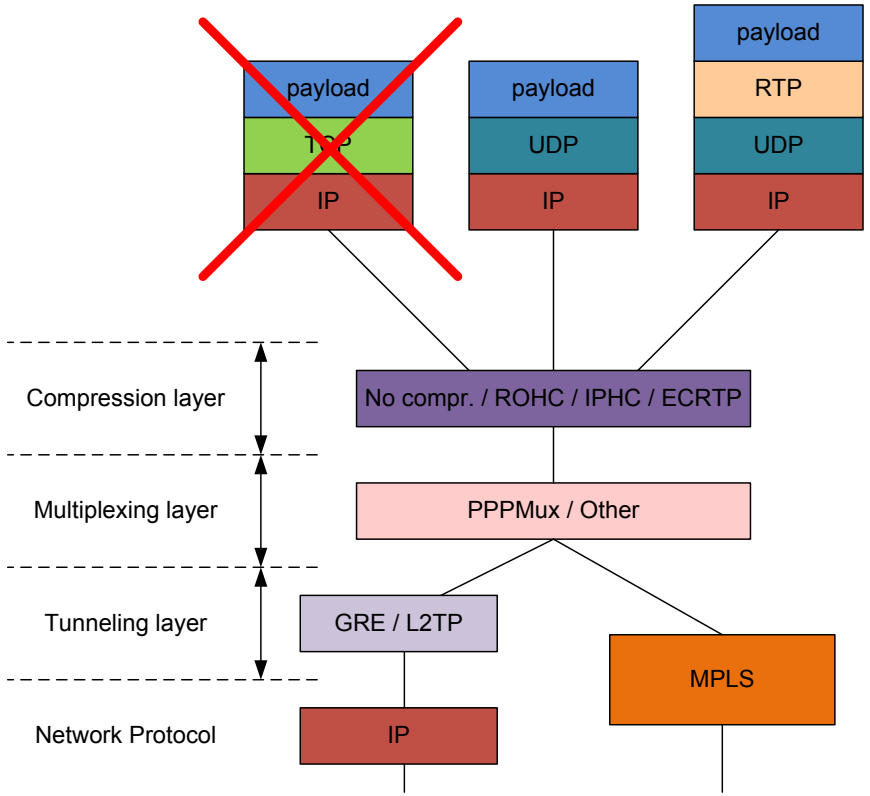


Backup slides

TCP optimization

Problem: TCP congestion control is governed by RTT: new multiplexing delays may be translated into a reduced throughput

Solution: The possibility of TCP optimization has been removed



Delays

Problem: Additional delays

Solution:

The new charter considers the problem and the cases where TCM-TF is interesting:

4. (...) In these scenarios, there are moments or places where network capacity gets scarce, so **allocating more bandwidth** is a possible solution, but it **implies a recurring cost**. However, the inclusion of **a pair of boxes** able to optimize the traffic when/where required is a **one-time investment**.

In addition, the "recommendations draft" is about additional delay limits tolerable by each of the considered services:

(...) **recommendations of maximum tolerable delays to be added by optimization** techniques are reported (...)

Path MTU

Problem: Potential PathMTU issues

(MTU is a common problem for any tunnelling mechanism)

Solution:

The current version of the Charter remarks the problem:

7. (...) **The eventual impact of multiplexing on protocol dynamics (e.g. the loss of a multiplexed packet, MTU-related issues) will also have to be addressed.**

The "recommendations draft" (section 4) also considers MTU limit as a mechanism for triggering a new optimized packet:

Size limit - **once a size limit is reached** (e.g., next to the MTU of the underlying network), **a multiplexed packet is sent.**