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PANEL DISCUSSION ON THE FUTURE OF INTERNET TRANSPORT

PANEL SLIDES

- Slides Gorry Fairhurst
- Slides Alessandro Ghedini
- Slides Jana Iyengar
- Slides Colin Perkins

A new design for the transport system might introduce platform- and protocol-independent transport layer APIs, such as Apple's Network.framework, or the IETF TAPS API. This has the potential to enable innovation in the design of transport protocols. What are the challenges facing Internet transports as user patterns and applications evolve at an ever-increasing speed?

Re-designing the interface presented to applications, could enable changes to the way applications interact with the transport system, or the way they describe their use of the network. What information is helpful for an application to tell the transport system?

Design and configuration of network equipment has often assumed relatively little knowledge of the way a transport protocol operates, but a patch-work of network-layer methods have ossified around the transport wire image. Middleboxes, in particular, have been deployed to augment transports to meet the demands of particular network segments or to map applications to appropriate network services. The growing volume of encrypted traffic demands a fresh approach.

What information is helpful for a transport to tell the network system? What service model is needed for different applications?

Increased data rates and processing capabilities present opportunities for greater intelligence in network devices, including new functions and software-based features. What are the opportunities for innovation at the network layer to assist the transport layer? If new approaches succeeded in addressing the ossification problem, what intelligence can the transport expect from the network layer?

How should today's research be evaluated against the expected changes in network traffic, and a more rapid pace of evolution above and below the network interface? Are there transition paths that can lead to successful long-term evolution of Internet transports?

This is a panel session that will start with opening remarks by the panel, and then discuss thoughts on the topics brought to the table. Come prepared to listen, think and contribute your thoughts or your own questions!



Gorry Fairhurst (Panel Moderator) is a Professor in Electrical and Electronic Engineering at the School of Engineering at the University of Aberdeen, his research is in Internet Engineering, large-scale Internet measurement and protocol design. He has 20 years experience working as an Internet Engineer, and is committed to open Internet standards and chairs the IETF's Transport and Services Working Group (TSVWG). He previously chaired groups including the IPDVB and DCCP working groups. He has also contributed to ETSI standardisation and the DVB Project, and currently works on Internet standards for transport and the network-layer.



Alessandro Ghedini (Panelist) is a Systems Engineer at Cloudflare where he helps standardize, implement and deploy network protocols for the Internet, with experience engaging in standardization efforts at the IETF in a number of working groups, as well as implementing and rolling out protocols such as TLS 1.3 and QUIC, and other related extensions, on Cloudflare's edge network.



Jana Iyengar (Panelist) is a Distinguished Engineer at Fastly. Dr. Iyengar works on QUIC, a new low-latency transport for the web; on BBR, a new congestion controller for the Internet; and other transport issues. He is Chair of Internet Congestion Control (iccr), an editor in the IETF's QUIC working group, and an active participant in various IETF working groups.



Colin Perkins (Panelist) is an Associate Professor in the School of Computing Science at the University of Glasgow and the current chair of the Internet Research Task Force. His research interests are on network transport protocols, with a particular focus on transport protocols for real-time and interactive multimedia, and on network protocol design, implementation, and specification. He is a long-time participant in the IETF and co-chairs RTP Media Congestion Avoidance Techniques working group, and was previously co-chair of the Audio/Video Transport and Multiparty Multimedia Session Control working groups.