Broadband Forum's UDP speed test delivers on latency promise

Broadband operators are a step closer to being able to deliver a new standard of connectivity as Broadband Forum releases the next update of its groundbreaking User Datagram Protocol (UDP)-based Speed Test utility.

UDPST performs the tests defined in TR-471 Issue 3 'Maximum IP-Layer Capacity Metric, Related Metrics, and Measurements', to quantify and verify broadband networks in instances where consistent low latency is just as critical as speed.

UDPST aids the deployment of gigabit services that intend to support next-generation applications with growing user uptake. Applications such as gaming, UHD streaming, augmented reality and virtual reality require low latency to assure the required Quality of Experience.

"Our open source implementation provides an approach to Internet access measurement with demonstratable accuracy and is an integral part of Broadband Forum specifications. The TR-471 specification was harmonized and developed in coordination with other standards organizations, including ITU-T, IETF and ETSI-STQ/Mobile," said Al Morton, AT&T and OB-UDPST project co-leader and TR-471 Editor. "UDP is a critical communication protocol for time-sensitive transmissions on the Internet, and the UDPST measurements provide consumer confidence in their service's support of applications that use UDP."

"UDPST's Latency under Load measurements and capabilities to perform application-layer traffic performance estimation address topics that are of considerable interest to the industry," Morton continued.

Broadband Forum's OB-UDPST (Open Broadband - User Datagram Protocol Speed Test) project has produced nine public releases of the open source implementation.

With UDPST Latency under Load measurements, users can compare their performance to the latency demands of their Internet applications in milliseconds. Latency requirements can be categorized with red, yellow, and green indicators, as needed. Results of UDPST conducting Latency under Load (and Capacity) measurements were shared with the IETF-

IPPM in late 2022. The UDPST results offered an enhanced and more practical view when compared to a TCP-based method.

UDP-based methods address an important gap because user applications and traffic with strict response time requirements will use UDP. The percentage of UDP traffic is also significant and continues to grow in proportion to TCP traffic. The fully encrypted QUIC transport protocol – running over UDP – already accounted for [nearly 30% of traffic in EMEA and 16% in North America](#) in January 2022.

"As an industry we have long realized the strong need for a common understanding on how to measure performance which goes beyond speed as the only factor to consider. We now have what was missing: a simple, standardized, and open-sourced method ready to be used across the whole industry to fill this void," said Sascha Dech, Deutsche Telekom.

Initially launched in response to growing fiber deployments with low latency and gigabit service rates, the OB-UDPST project utility applies to both mobile and fixed radio access.

"OB-UDPST is one of the latest utilities we're using at the UNH-IOL today, to measure the capacity and latency of systems with increasing capabilities, such as 5G and higher speed PON networks," said Lincoln Lavoie, UNH InterOperability Lab, Principal Engineer. "Directly participating in the open source project also enables us to share requirements with the team to ensure the UDPST continues to meet our expanding use cases at the lab."

Learn more about OB-UDPST here: https://github.com/BroadbandForum/obudpst.

For more about TR-471 Issue 3 'Maximum IP-Layer Capacity Metric, Related Metrics, and Measurements', download its latest release here: https://www.broadband-forum.org/technical/download/TR-471_Issue-3.pdf.

For more information about Broadband Forum, visit: https://www.broadband-forum.org/.

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About the Broadband Forum
Broadband Forum is the communications industry's leading open standards development organization focused on accelerating broadband innovation, standards, and ecosystem development. Our members' passion – delivering on the promise of broadband by enabling smarter and faster broadband networks and a thriving broadband ecosystem.

Broadband Forum is an open, non-profit industry organization composed of the industry's leading broadband operators, vendors, thought leaders who are shaping the future of broadband, and observers who closely track our progress. Its work to date has been the foundation for broadband's global proliferation and innovation. For example, the Forum's flagship TR-069 CPE WAN Management Protocol has 1 billion+ installations worldwide.

Broadband Forum's projects span across 5G, Connected Home, Cloud, and Access. Its working groups collaborate to define best practices for global networks, enable new revenue-generating service and content delivery, establish technology migration strategies, and engineer critical device, service & development management tools in the home and business IP networking infrastructure. We develop multi-service broadband packet networking specifications addressing architecture, device and service management, software data models, interoperability and certification in the broadband market.

Our free technical reports and white papers can be found at https://www.broadband-forum.org/.

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