

Internet2LandSpeedRecord

Internet2 Land Speed Record

The [Internet2 Land Speed Record](#) is an open and ongoing competition that should foster pushing the performance boundaries of high-speed networks. The competition is about [high-speed long-distance](#) bulk data transfer over [TCP](#), and its metric is

(data volume * [round-trip time](#)) / elapsed time

This can be expressed as something like "Terabit-meters per second". Over the years, Land Speed Record participants have contributed significantly to the understanding of bottlenecks in high-speed data transfers as well as to research on [high-speed TCP variants](#). As computers have closer and closer to being able to fill 10 Gb/s paths with TCP (between a single pair of endpoints), and there are no host interfaces and very few backbones with capacities higher than 10 Gb/s, the competition has recently become somewhat focused on who can build the 10 Gb/s with the longest RTT.

Because of the significant effort involved at building competitive entries, and the low significance for the vast majority of network users (see under [wizard gap](#)), these competitions are sometimes criticized as producing "hero numbers".

Current Numbers

As of February 2007, the current records date from November 2005 to February 2006:

Category	Metric	Volume	Distance	Duration	Average Rate	Team
IPv6 Single Stream	208,800 Tbm /s	585 GB	30,000 km	30'	6.96 Gb/s	U. Tokyo, WIDE, Microsoft et al.
IPv6 Multiple Stream	208,800 Tbm /s	585 GB	30,000 km	30'	6.96 Gb/s	U. Tokyo, WIDE, Microsoft et al.
IPv4 Single Stream	264,147 Tbm /s	2.98 TB	30,000 km	45'	8.80 Gb/s	U. Tokyo, WIDE, and Chelsio et al.
IPv4 Multiple Stream	264,147 Tbm /s	2.98 TB	30,000 km	45'	8.80 Gb/s	U. Tokyo, WIDE, and Chelsio et al.

For complete/up-to-date information please check with the official Internet2 LSR site, see references.

Related Work

In a similar vein, the SC (formerly "Supercomputing") conference has a "Bandwidth Challenge" contest.

References

- Internet2 Land Speed Record Web site, <http://www.internet2.edu/lsr/>
- Internet2 Land Speed Record - history and timeline of record-setting entries, <http://www.internet2.edu/lsr/history.html>
- SC06 HPC Bandwidth Challenge, http://sc06.supercomputing.org/conference/hpc_bandwidth.php

– Main.SimonLeinen - 23 Feb 2007