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Bandwidth Measurement Cheat Sheet

The most quoted number in networking — and the most misread one

How bandwidth is measured

Units

Bits per second — Mbps and Gbps. Bits, not bytes: divide by 8 for transfer sizes

Active tests

iperf and speed tests push traffic through a path to find its real ceiling

SNMP counters

Interface counters polled over time give continuous utilization without adding load

95th percentile

How carriers bill: sustained usage, ignoring the top 5% of spikes

Bandwidth vs throughput: the pipe vs what gets through it

~940 Mbps

real TCP throughput a 1 Gbps link typically delivers on a clean path

<1% loss

can halve TCP's rate on a long path

3 signals

measure bandwidth, loss, and latency together before buying a bigger link

Bandwidth is capacity; throughput is reality. Protocol overhead trims a few percent, latency limits how fast TCP ramps, and packet loss cuts throughput brutally — which is why “we have plenty of bandwidth” and “transfers are slow” are so often both true.

Bandwidth monitoring in practice

- Utilization trends per interface
- Saturation alerts before users notice
- Loss and latency alongside bandwidth
- Capacity upgrades planned from data, not complaints
- Per-link context: device, rack, services behind it

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