# Network Emulation

Creates a virtual environment where real devices and applications interact with emulated network conditions. The purpose of a network emulation is to test how real systems behave under specific network conditions. For an example testing app performance with latency, jitter or packet loss. Real time VoIP or video streaming

**Network Simulation**

Models the behavior of a network using mathematical formulas and software abstractions. The purpose of the network simulation is to study and analyze network behavior without real hardware or traffic. For an example simulating a large-scale network to study routing protocols or traffic flow.

**Core Components of the Network Emulation and Simulation Platforms**

Hardware – Optical Layer emulation devices that mimic fiber delays, impairments, bandwidth limits and link failures

Software – Graphical topology builders, real-time protocol emulation, customizable latency / jitter / loss injection

Cloud Services – Remote access, scenario playback , session storage , AI – assisted performance benchmarking