

Product Brief

VIAMI

TeraVM

Teraflow

Run anywhere performance validation for throughput, connections and latency.

TeraVM Teraflow is used to validate key networking metrics of connections, latency and throughput with the ability to vary bandwidth, packet and session rates, on a per emulated endpoint. The TeraVM Teraflow application supports performance testing with TCP, UDP and DTLS protocols.

A key advantage of Teraflow is the ability to assess throughput and latency performance in a back to back mode and/or against popular web based network performance validation services such as Ookla Speedtest. TeraVM's Teraflow can emulate both client and/or Ookla equivalent servers, which supports a run anywhere performance validation capability ideal for test scenarios such as cloud bursting to public/private clouds.

Efficient and Reliable, Run Anywhere Validation

Run Anywhere

TeraVM is delivered as an appliance and/or software only solution, making it the ideal performance validation solution for lab/public/private cloud environments. TeraVM's elastic test bed enables the user to extend their key test case scenarios beyond the lab walls to include live networks connecting with internet enabled 3rd party services and/or public/private clouds. TeraVM enables users to validate performance from inside the cloud service accessing the Ookla Speedtest service.

Advantages

- Highly scalable throughput validation: 1 Gbps to 1 Tbps
- Elastic test bed
- Support for millions of connection rate attempts
- Supports validation against Ookla Speedtest servers
- Supports both unsecure (TCP, UDP) and secure (DTLS) transport layer protocols

Features

- Throughput, Latency and Connection rate test cases
- Emulation and real-time measurement of millions of unique sessions
- Ability to vary packet rate sizes per emulated endpoint
- Per endpoint configuration for bandwidth/connection rates and session duration
- Out of millions of sessions, easily pinpoint and isolate under-performing sessions

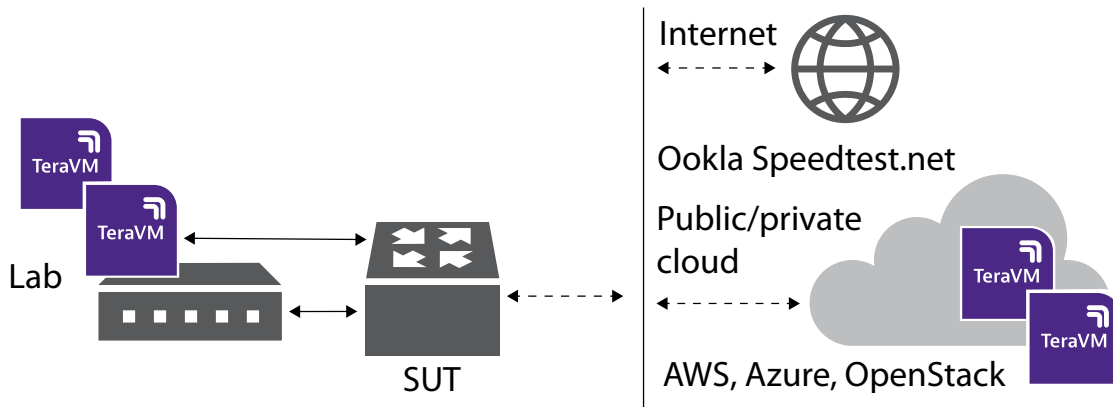


Figure 1: TeraVM Teraflow - Run anywhere throughput and latency performance validation

Ookla Speedtest

TeraVM Teraflow application allows users to emulate on a per endpoint basis, clients behaving in the same manner as the popular Ookla client. Users can elect to test against any number of geo-located Ookla servers, supporting the trio of tests: Latency, Download Bandwidth and Upload Bandwidth.

Emulation with the most realistic load scenarios

TeraVM is an application traffic emulation and security performance measurement solution. Using TeraVM Teraflow, users can emulate the most realistic load scenarios for performance validation of throughput, connections and latency.

TeraVM delivers an integrated configuration and measurement user interface for the core network tests, but also supports the popular internet based speed test service from Ookla. TeraVM enables emulation of Ookla equivalent clients which can access any of the Ookla geo-dispersed servers. TeraVM's per flow architecture enables unique configurations per emulated client endpoint, with support to emulate Ookla equivalent servers.

TeraVM can be deployed to cloud services such as Amazon Web Services (AWS), Azure and/or OpenStack; allowing the user validate throughput and latency performance in the cloud tenancy or validate against the internet based Ookla Speedtest service.

Validation with Ookla Speedtest

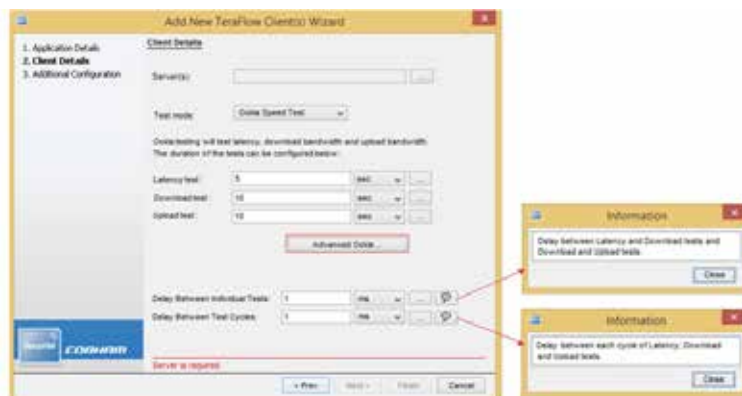


Figure 2: TeraVM GUI supports an integrated Ookla equivalent client

TeraVM features and functionality	
General	Real-time isolation of problem flows
	Elastic test bed (up to 1Tbps)
Network interface cards	Mellanox ConnectX-4 support for 56/100Gbps

TeraVM features and functionality (cont.)	
Data	TCP / UDP, Teraflow (Ookla Speedtest)
	HTTPv1/2 (headers, substitution, attachments)
	SMTP / POP3 (incl. file attachments)
	FTP (Passive/Active), P2P applications, DNS
Address assignment	Configurable MAC
	DHCP, PPPoE (IPv4 & IPv6)
	Dual Stack (6RD, DS Lite)
Ethernet switch	VLAN Tagging (up to 8 concurrent tags)
	ACL, 802.1p, DSCP
Datacenter	VxLAN, GRE, SR-IOV
Replay	Replay large PCAP files TCP, UDP and raw data playback
	Amplify and dynamically substitute data into PCAP files
Video	Multicast: IGMP v1/v2/v3 & MLD v1/v2
	Automatic Multicast Tunelling (AMT)
	Video on Demand (VoD)
	Adaptive Bit Rate Video (HLS, HDS, Smooth, MPEG-DASH)
	Video conferencing
Secure VPN	Clientless VPN (SSL/TLS/DTLS), IPSec (IKEv1/v2), Generic remote access
	Cisco AnyConnect SSL VPN Client, Cisco AnyConnect IPsec VPN
	Cisco ScanSafe
	Juniper Pulse, Juniper Network Connect
	Dell SSO
	802.1x EAP-MD5
Security attack mitigation	Spam / Viruses / DDoS
	CyberSecurity Database
Voice	VoIP: SIP & RTP (secure & unsecure), SMS
	Dual Hosted UACs, SIP Trunking
	Voice & Video quality metric (MOS)
LTE/4G	EPC and RAN (3GPP Rel. 8, 10, 11)
	VoLTE (secure and unsecure), ViLTE
SLA	TWAMP, PING
Automation	CLI, Perl, TCL, XML, Java API
	Python, Jython
	Qualisystems (CloudShell)
	OpenStack