

# VIAVI

## TVM-630

### TeraVM application emulation and security validation appliance

TeraVM 630 (TVM-630) is an Application Emulator and Security Validation appliance with support for 1 GbE, 10 GbE and 40 GbE I/O. TVM-630 is ideal for lab and data center deployment where network performance needs to be measured with real-world traffic scenarios.

### TVM-630 High Performance and Reliable Validation Solutions

TeraVM is pre-packaged on datacenter ready hardware, which is ideal for physical network appliance performance test use cases.

As the test platform is delivered on standard hardware, it can be easily plugged into any datacenter infrastructure or centralized resource pool, making it easy for carriers and vendors to deploy, manage and scale as part of an elastic test bed, which can be enabled to deliver terabits per second of application traffic.

TVM-630 delivers reliable and repeatable testing for both physical and virtual network functions, alongside of performance validation of network services.

### Per Flow Performance Validation

The TVM-630 is complemented by a comprehensive validation suite covering key network segments such as access, application services, mobile network back-haul and security. TeraVM provides validation for key application services such as video, voice and data. TeraVM's per flow emulation architecture delivers the necessary granularity required to pin-point and isolate poor quality flows out of the millions of emulated flows.

### Advantages

- Pre-packaged TeraVM appliance
- Reliable and repeatable performance validation
- Datacenter ready, ideal for NFV validation
- Elastic test bed support enabling up to 1 Tbps of application emulation)

### Features

- Support for 8 x 1 GbE or 4 x 10 GbE or 4 x 40 GbE interfaces
- Rack & Stack
- Stateful traffic (L1-7) emulation
- Emulation and real-time measurement of millions of unique application on a per flow basis
- Comprehensive CyberSecurity Database
- Easy pinpointing and isolation of problem flows



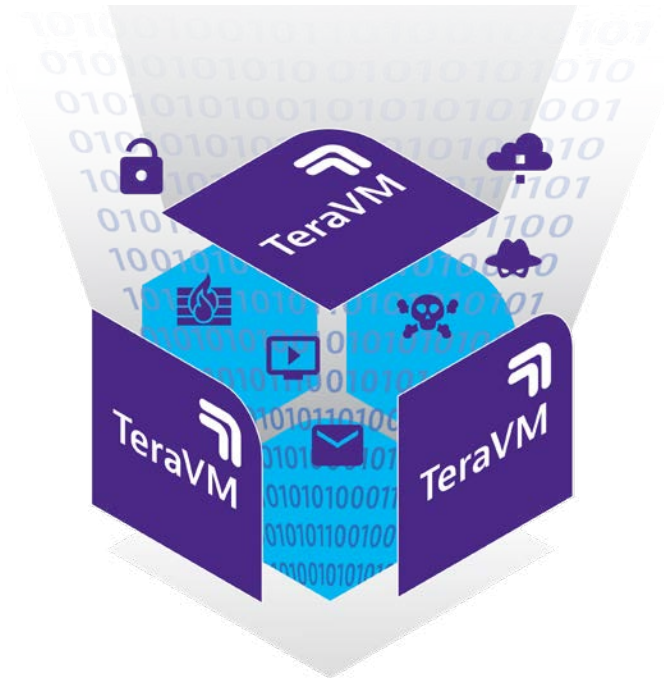
Figure 1: TVM-630 1u rack server

## Security Performance Validation

TVM-630 is a high performing platform and software offering, ideal for validating a wide range of next generation firewalls and VPN access devices. TeraVM enables mixed application traffic emulation of legal or good flows with malicious flows; including a CyberSecurity Database.

## Run Anywhere Performance Validation

TeraVM enables customers to analyse, develop and validate the performance and capability of a wide variety of network functions and services for both fixed and wireless networks. TeraVM is used for performance validation; in the lab, datacenter and/or cloud.



## TVM-630: 1u rack server specification

Feature	Description
Hardware	Dell R630
Size	1u rack server
Processor	Intel Xeon E5-2697 or Intel Xeon
Cores	E5-2699
Hard Drive	14 CPU (@2.6GHz) or 18 CPU
RAM	(@2.3GHz)
Test Interfaces	500GB
Management Interface	128GB
Power Supply	8 x 1GbE
Rack Rail	4 x 10GbE
Datacenter ready	4 x 40GbE
Weight	1GbE

### TeraVM capability overview

<b>General</b>	Real-time isolation of problem flows
	Elastic Test bed (up to 1Tbps)
<b>Network interface support</b>	Support for 1/10/40Gbps I/O
	Mellanox ConnectX-4 support for 56/100Gbps
<b>Data</b>	TCP / UDP, Teraflow, Ookla speed test
	HTTP (v1/2, incl. stateful response parser)
	SMTP / POP3 (incl. file attachments)
	FTP (Passive/Active), P2P applications, DNS
<b>Address assignment</b>	Configurable MAC
	DHCP, PPPoE (IPv4 & IPv6)
	Dual Stack (6RD, DS Lite)
<b>Ethernet switch</b>	VLAN Tagging (up to 8 concurrent tags)
	ACL, 802.1p, DSCP
<b>Data center</b>	VxLAN, GRE, SR-IOV
<b>Replay</b>	Replay large PCAP files TCP, UDP and raw data playback
	Amplify and dynamically substitute data into PCAP files

<b>Video</b>	Multicast: IGMP v1/v2/v3 & MLD v1/v2
	Automatic Multicast Tunelling (AMT)
	Video on Demand (VoD)
	Adaptive Bit Rate Video (HLS, HDS, MPEG-DASH, Smooth)
	Video conferencing, Webex
<b>Secure access / VPN</b>	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
	SAML (F5, Citrix SSO), Dell SSO
	802.1x EAP-MD5
<b>Security attack mitigation</b>	Spam / Viruses / DDoS
	Cybersecurity Database
<b>Voice</b>	VoIP: SIP & RTP (secure & unsecure), SMS
	Dual Hosted UACs, SIP Trunking
	Voice & Video quality metric (MOS)
<b>LTE/4G</b>	EPC and RAN (Rel.8, 10, 11)
	VoLTE (secure/unsecure), ViLTE
	Wifi Offload (EoGRE)
<b>SLA</b>	TWAMP, PING
<b>Automation</b>	CLI, Perl, TCL, XML, Java API
	Python, Jython
	Qualisystems (CloudShell)
	OpenStack