Brochure

VIAVI
TeraVM IMS Messaging

Send/receive SMS. TeraVM performance testing for LTE.

VIAVI TeraVM supports short message service (SMS) for 3GPP IP Multimedia Subsystems (IMS). Users of TeraVM can emulate on a per subscriber basis unique SMS activity while actively partaking in voice over LTE (VoLTE) calls.

Key benefits

VIAVI TeraVM SMS feature permits the users to emulate 3GPP IMS multimedia aware endpoints, which can actively receive and/or send short messages while on a VoLTE call.

TeraVM SMS is fully stateful and can partake in message exchanges with 3rd party short messaging service centre (SMSC) servers. TeraVM stateful messaging enables functional performance and load performance testing of messaging services, plus enables assessment to deliver the message whilst active calls are ongoing.

The fully integrated SMS feature enables flexible provisioning including the ability to send messages to one or to many recipients defined in a list of recipients and/or to send many messages to emulate real-world diversity.

In addition, TeraVM enables a level of realism by facilitating message bursting or message chattiness across the IMS framework. Message bursting is used to stress test the ability of the various Short Message Gateway (SM-GW) and CSCF functions to process, deliver and report on the messages generated.

Sample Test Configurations

SMSC Gateway Testing

Emulate 3GPP IMS multimedia enabled endpoints with dedicated endpoints for SMS send and receive. Determine functional performance of the SMSC, ensuring correct configuration and the ability to send and receive SMS on a per endpoint basis.

TeraVM SMS flexible configuration

- Unique message/message lists per emulated subscriber
- Send/Receive SMS messages while making VoLTE calls
- Configurable SMSC details, use multiple SMSCs
- Emulate per subscriber message bursting

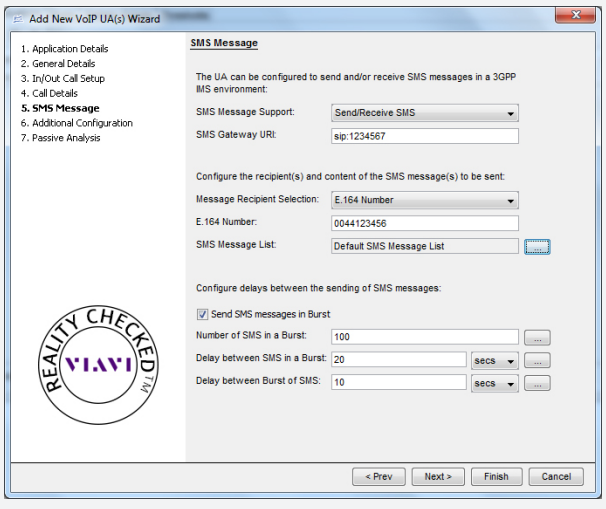

Figure 1: TeraVM integrated SMS feature

VoLTE + SMS Performance Testing

Emulate on a per UE basis voice calls using adaptive multi-rate (AMR) multi-media codecs, test using both narrow- and wide-band codec types. Functional performance test SMS on UEs partaking in live calls, assess performance of concurrently sending/receiving SMS.

Real Application Performance Testing

Emulate unique traffic flows per UE configuration. Assess quality on multiple applications including delay sensitive applications such as voice and video when receiving SMS.

Detailed performance measurements

Dedicated SMS performance measurements per emulated 3GPP IMS multimedia endpoint. Sample performance measurements include.

- Messages Out Attempted/s
- Messages Out Delivered/s
- Messages Out Failed
- Messages Out Acknowledged/s
- Messages Received/s
- Messages Accepted/s
- Messages Acknowledgements sent/s
- Messages Acknowledgements delivered/s
- Messages Acknowledgements Failed
- SMS Mean time to Message Acknowledgement ms
- SMS Mean time to Message Acknowledgement Delivery ms

Supported Products

The TeraVM SMS feature is supported on the D500, D1000, and TVM R620 systems.

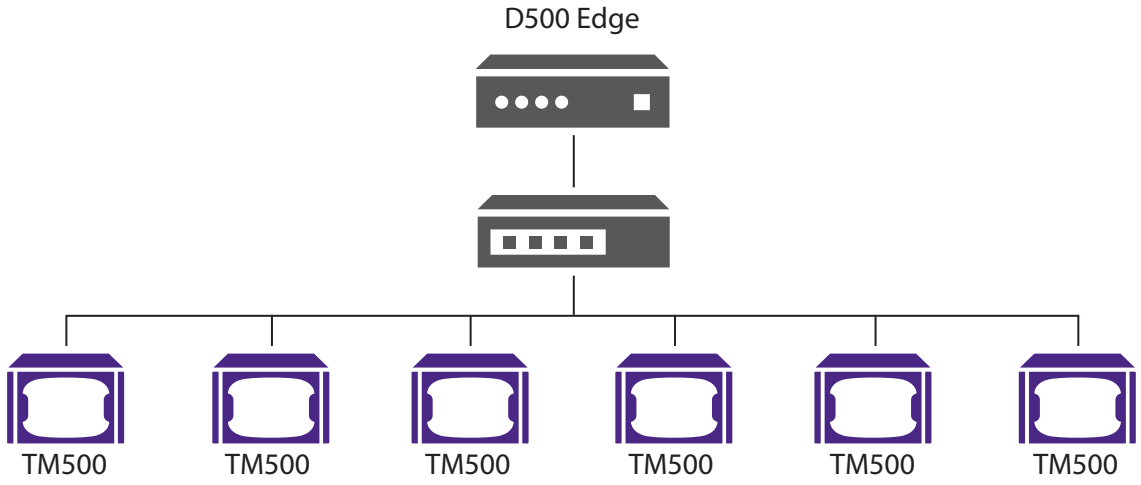

Figure 2: Example D500 deployment

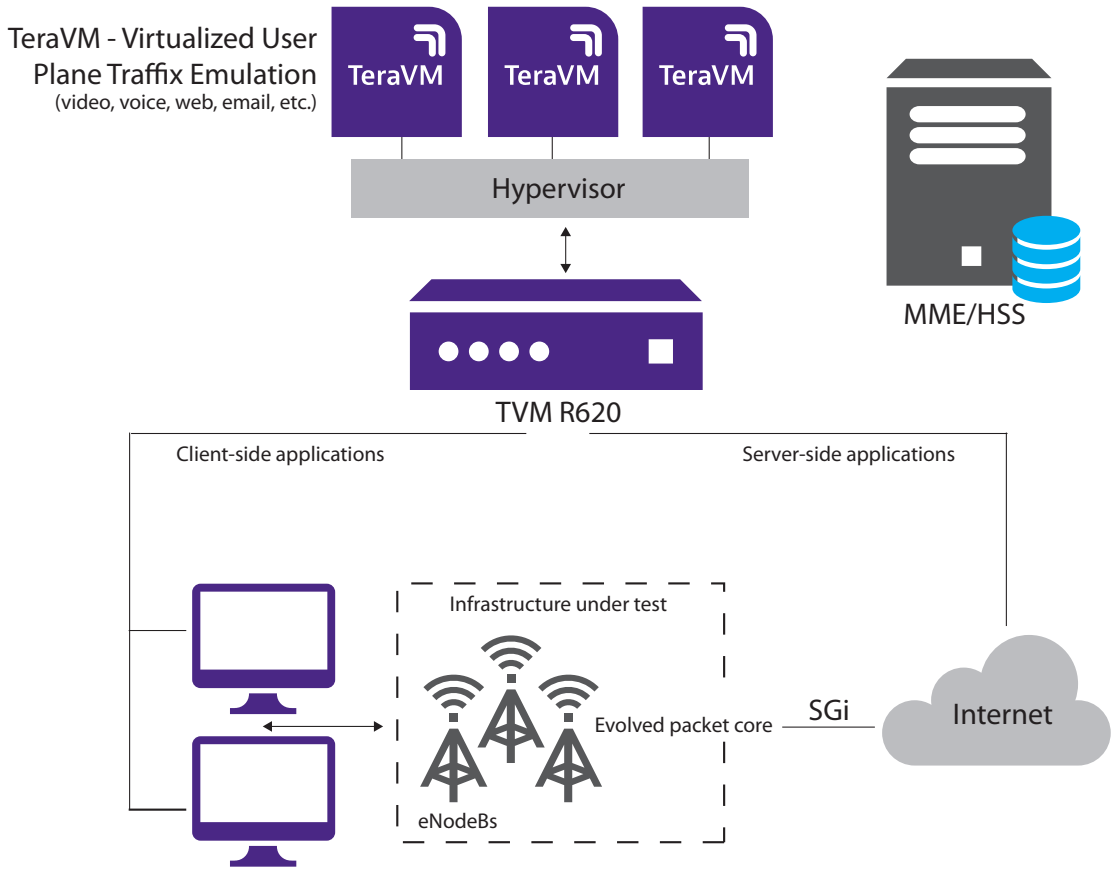

Figure 3: Example RVM R620 deployment

Comprehensive Test Capability

VIAVI TeraVM provides the industry's most comprehensive test suite with over 3,000 unique metrics; ranging from application performance to protocol tunneling down to simple port enabled testing with throughput and latency metrics. A user-defined threshold can be set on any of these metrics to easily pinpoint and isolate problem flows.

- Per flow performance measurements
  - Measure quality of experience for each and every UE on each and every emulated application traffic flow
- Comprehensive list of performance metrics per application type
  - Packets per second, Dropped/Out of Sequence Packets, Retransmitted Packets, Jitter, Latency, TCP
  - Connection Rate, Application Goodput, unique application timings, Video/ Audio quality score, etc

Software Packages

Standard Software License Bundle	
Concurrent multi-users (up to 6)	
Graphical & Command Line Interface	
IPv4 and IPv6 addressing	
Real-time isolation of problem flows	
Address Assignment	DHCP, PPPoE (IPv4 & IPv6)
Data	Web (HTTP)
	Email (SMTP)
	File Transfer (FTP, P2P application)

Diagnostics & control	ICMP (PING)
Security attack mitigation	Denial of Service attacks
Optional Software Licenses	
Flow Fault Finding: Real-time isolation of problem flows	
Video	Multicast Video (IGMP & MLD)
	HTTP Adaptive Bit Rate Streaming
	Video on Demand (RTSP)
Data	Name Server resolution (DNS)
	TCP / UDP (TeraFlow)
Voice	VoLTE (unsecure and secure AKA/IPsec)
	VoIP: SIP & RTP (secure & unsecure)
	Dual Hosted UAC
	Telepresence media conferencing
Media analysis	Video analysis includes MOS scoring
	Voice analysis includes MOS scoring
Diagnostic & control	TWAMP

VIAVI Solutions

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