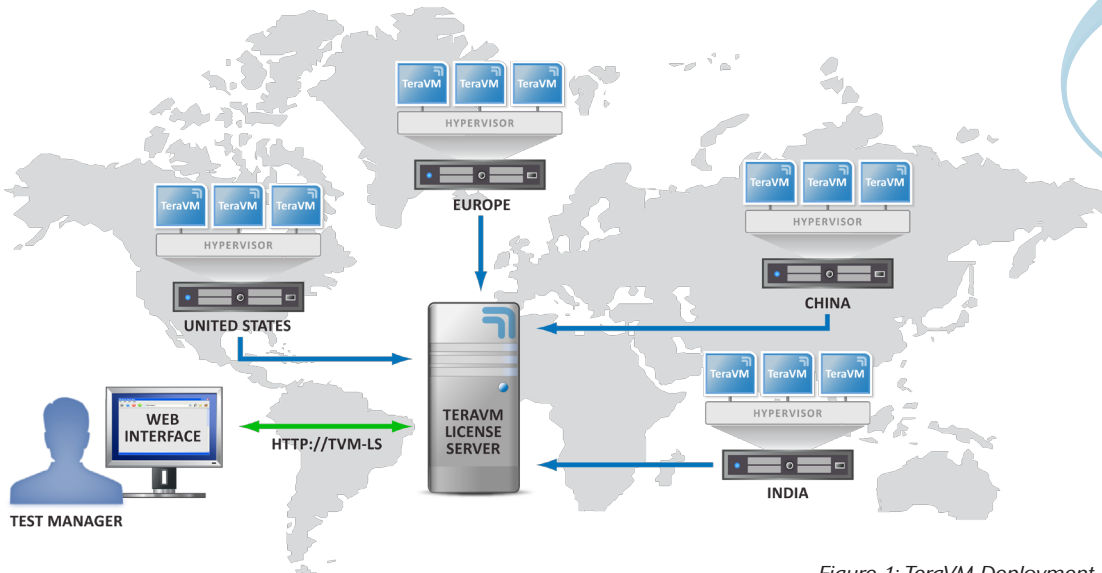# TeraVM™ – License Server (TVM-LS)

Figure 1: TeraVM Deployment

Benefits

- Enable an elastic test bed
- Maximize test equipment usage
- Easily add additional TeraVM licenses
- Share test beds located across the globe
- Receive license upgrades electronically
- No cost (included free of charge)

Features

- Share TeraVM licenses across any number of test beds
- Centrally manage and administer all TeraVM licenses
- Track available test resources
- Web based administration
- Human readable license file

Overview

TeraVM is the only IP test and measurement solution available that enables users to deploy a vertically and horizontally scalable elastic test bed. The test bed can scale vertically from 1 Gigabit per second up to 1 Terabit per second by simply adding more industry standard hardware. Horizontally the elastic test bed scales across test locations which may be in the same building or the other side of the world. A centrally deployed TeraVM License Server (TVM-LS) keeps track of available TeraVM licenses and allocates them on demand. Gone are the days of physically transporting test hardware from lab to lab or across the world. With TeraVM testers or developers in the US can use licenses during their work day and when they go home their counterparts in India or China can utilize the exact same licenses.

Test Manager Use Case

With distributed development it is very common to have product development and test teams span multiple sites and time zones. This puts an added burden on the product team's test manager who is tasked with insuring that reliable testing can be performed across multiple sites in a cost efficient manner. Using TeraVM the test manager can afford to duplicate the test bed hardware at each site because only industry standard x86 based hardware from vendors such as Cisco, Dell, HP, or IBM is required. With hardware in place, the test manager is able to purchase one set of centrally located test licenses and these licenses can be used on any of the test beds located around the globe. This ensures 100% utilization of the test resources and greatly simplifies the daily complexities a test manager faces in provisioning and scheduling test resources.

Inventory Management

An additional advantage of the TeraVM License Server is the ability to quickly determine which test resources are available without the need for additional resource management software. From a single, centralized point a user has complete visibility of all available test resources such as number of licensed users, available test modules and licensed application types (e.g. HTTP, VoIP, email).

Licensing

A range of flexible TeraVM licensing models are available to enable a test manager to start with a small deployment and increase the size as needed based on future demand.

FREQUENTLY ASKED QUESTIONS

Is there any charge for TVM-LS?	No. The TeraVM License Server is included free of charge as part of an overall TeraVM purchase.
Where do I install TVM-LS?	The TVM-LS can be installed anywhere within your internal IP network. The only requirement is that the TeraVM Controller(s) can communicate directly over IP with the TVM-LS.
How do I administer TVM-LS?	Administration is done entirely from a web interface.
What administrative functions need to be performed?	The main administrative function is to add, delete or change the license file in use.
Can there be multiple administrators for TVM-LS?	Yes. TVM-LS provides a role-based login mechanism. The master administrator can provide login accounts (username and password) to any number of other sub-administrators and can assign appropriate privileges such as the ability to only view the current license status but not to edit or assign licenses.
How do I obtain a TeraVM License File?	Shenick will provide a digitally signed license file upon purchase of TeraVM. The file is typically emailed to the administrator of record.
How do I load a license file in to TVM-LS?	This is done via the web interface and is a simple import function which can be completed in a matter of seconds.
What does a TVM-LS license file look like?	It is a digitally signed, human readable, text file which contains easily understood information regarding what aspects of TeraVM have been licensed to the customer. For example, how many TeraVM Controllers are authorized, how many CPU cores for TeraVM have been authorized and what test applications (e.g. HTTP, VoIP) have been authorized.
Is any license management done from TeraVM Controller?	No. All license management is done directly by logging in to the dedicated TVM-LS web interface. The TeraVM Controller communicates directly with TVM-LS but this interaction doesn't require any input from the TVM-LS administrator.
What administration is required on a TeraVM Controller?	Each TeraVM Controller has to be provided the IP address and port number of the TVM-LS it is to rely upon.

FEATURES

GENERAL
Real-time isolation of problem flows

DATA
TCP / UDP, HTTP (headers, substitution, attachments), SMTP / POP3 (incl. file attachments), FTP (Passive/Active), P2P applications, DNS

ADDRESS
MAC, VxLAN, DHCP, PPPoE (IPv4 & IPv6), Dual Stack (6RD, DS Lite)

ETHERNET SWITCH
VLAN and Double VLAN Tagging (Q-Q), ACL, 802.1p, DSCP

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 (RTSP) , Adaptive Bit Rate Video (HLS, HDS, Smooth)

Video conferencing

SECURE VPN
SSL/TLS/DTLS, IPsec (IKE v1/v2),Cisco AnyConnect SSL VPN Client, Cisco AnyConnect IPsec VPN Client, Juniper Pulse, Juniper Network Connect, 802.1x EAP-MD5

SECURITY ATTACK MITIGATION
Spam / Viruses / DDOS

VOICE
VoIP: SIP & RTP (secure & unsecure), H.323, Dual Hosted UACs, SIP Trunking

Voice & Video quality metric (MOS)

LTE/4G
GTP tunnel support

SLA
TWAMP

AUTOMATION
CLI, Perl, TCL, XML, Java API

w w w . a e r o f l e x . c o m

i n f o - t e s t @ a e r o f l e x . c o m

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