TeraVM

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TeraVM Release Notes

TeraVM Release 13.2

Help and Support

TeraVM User Documentation, Online Training Guides and Videos are available on the documentation portal:

http://ats.aeroflex.com/login-account

For support queries, please log a call on the Cobham Wireless Support Portal

https://support.aeroflex.com/

For help on using the support portal, download the Cobham Wireless Customer Support Portal User Guide.

(For accounts, please contact your local Cobham Account Representative).

Note

You can also contact support using the mail alias for your region:

TeraVMSupport.CN@aeroflex.com (China)

TeraVMSupport.EMEA@aeroflex.com (EMEA)

TeraVMSupport.USA@aeroflex.com (North America)

TeraVMSupport.JP@aeroflex.com (Japan)

TeraVMSupport.KO@aeroflex.com (Korea)

TeraVMSupport.SG@aeroflex.com (South East Asia)

TeraVMSupport.IND@aeroflex.com (India)

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Table of Contents

Chapter 1. What's New in 13.2

New features, changes, and updates made in this release are detailed in this section.

1.1. IP Replay Application

IP Replay is a newly added application to the TeraVM Java Client. The IP Replay application takes pcap files and replays the packets over server and client hosts. Using IP Replay applications, TCP and UDP packet information can be replayed in the same order and in the same rate as the original pcap. The application can be configured for both a single application per row, or as a Scaled Entity. When configuring IP Replay applications, the client and server hosts must be on different interfaces on the same Test Agent. For more information on IP Replay applications, see *TeraVM Java Client User Guide*, and *TeraVM Metrics Guide* for information on statistics.

1.2. RTSP Client Latency Stats

RTSP Latency Statistics can be enabled on an RTSP server and client application in the TeraVM Java Client. A check box has been added to the existing *RTSP Statistics* dialog. The following procedure describes how to enable RTSP Latency Statistics and is taken from the *TeraVM Java Client User Guide*. For information about the added statistics RtspClient - RtpLatency, and RtspMp2tsClient - RtpLatency, see *TeraVM Metrics Guide*.

Enabling RTSP Latency Statistics

Use this procedure if you want to enable the RTSP Latency Statistics on a provisioned RTSP Server and Client application.

Prerequisite

- The RTSP client and server must be on the same Test Agent.

1. On the RTSP Server Application from the *Server Details* dialog, enable **Update RTP Packets with Latency Timestamp** check box.
2. If Passive Analysis is configured on the RTSP Client application, then in the *Server Details* dialog ensure **Update RTP Packets with Latency Timestamp** check box is disabled and enable **Generate RTCP Reports** check box. Otherwise, go to the next step.
3. On the RTSP Client Application from the *RTSP Statistics*, select **Enable Latency Statistics** check box to enable.
4. RTSP Latency is now configured.

1.3. License Server in Amazon

TeraVM License Server now runs in Amazon AWS and by following the standard installation procedure, TeraVM Controllers can be pointed to public license servers in the AWS cloud. Notes:

1. Licence Tracker needs to run locally.
2. The License Password feature is recommended for public installations of License Server.

1.4. Adaptive Test

This release includes the following adaptive throughput test in the Central Test Library:

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- 21K HTTP Download

Adaptive tests simplify the testing process with the use of visual representations of test data, along with clearly defined logic for selecting testing strategies. Tests can be run with minimal configuration on default settings and can be saved for reuse. Subnet Profiles, once created, can be saved in the Workspace and reused across tests with a drag-and-drop feature. When testing, a user inputs a throughput objective for a test, and runs the test, the test adaptively applies more test resources until either the objective is met or the resources are exhausted.

1.5. VoIP Home Gateway Dual Stack Support

The Dual Hosted VoIP UA application feature in the TeraVM Java Client can be configured as a Scaled Entity. Enabling scaling allows the creation of thousands of Dual Hosted VoIP applications which are associated to host entities. For more information on the updated procedure and parameters used when configuring as a Scaled Entity, see *Provisioning a Dual Hosted VoIP UA* in the *Java Client User Guide*.

1.6. Enable EAP Authentication

Cisco AnyConnect VPN client is updated so that an AnyConnect Client using single certificate authentication will communicate with an Adaptive Security Appliance (ASA) using Aggregate Authentication over EAP (Extensible Authentication Protocol). This is the same mechanism that is currently used for multiple certificate authentication.

There is no change in authentication mechanisms in IKE/IPSec clients.

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Chapter 2. Upgrading to this Release

Important

You must check to see if your upgrade process is impacted by any of the following conditions.

- **Upgrading from 13.1 to 13.2**

  When following this upgrade path you should follow the upgrade procedure from Section 2.1, for both the Controller and the Executive. This is to ensure that you do not encounter a timeout while upgrading them.

- **Pre-12.0 Introduction of TeraVM Executive**

  TeraVM 12.0 was a major release, with many new features and architectural changes to the product. Therefore, if you are migrating from a pre 12.0 release, you **must** deploy the TeraVM Test Modules and the TeraVM Executive to use TeraVM successfully.

- **Pre-12.1 to Post 12.1: Authentication Service**

  If upgrading from a pre-12.1 to post 12.1 release, you will see the message **The Authentication Service From the Executive Machine Could Not Be Reached**. To get round this, in the browser, you must amend the TeraVM Controller IP with :8181. For example: http://TVM-C IP**:8181**.

- **12.1 Security Certificate Required**

  When upgrading from pre-12.1 to post-12.1 and trying to reach the Executive or Controller via the browser, the browser displays a connection not secure dialog. This dialog will differ form browser to browser. You must add an exception to accept a security certificate before you can log into the Executive or Controller. You will also need to do this the first time that you open Pool Manager from the UI.

- **Upgrade to Off Controller Repository**

  13.1 release includes performance improvements to the Off Controller Client Repository. If you have a have an installed Off Controller Client Repository, then use the procedure in Section 2.2 to perform the upgrade.

  TeraVM supplies a separate Client Repository which can be of unlimited size, external to the Controller (Off Controller). It comes as a separate virtual machine, and must be downloaded separately. The repository is sized at 32GB by default. You can increase this by adding disks in vSphere (you cannot remove or resize existing disks).

- **Cybersecurity Updates**

  When you perform this upgrade, all Cybersecurity Updates from April 2nd 2017 will be removed. Please download the latest Cybersecurity updates and reboot your controller before reinstalling. Contact support for details. This only applies if you have purchased the additional Cybersecurity Database license from Cobham.

An overview of the TeraVM install and upgrade process is shown below. For details on installing or upgrading to this release, please see the relevant hypervisor/cloud guide.

Figure 2-1. Installing or Upgrading to Release 13.2

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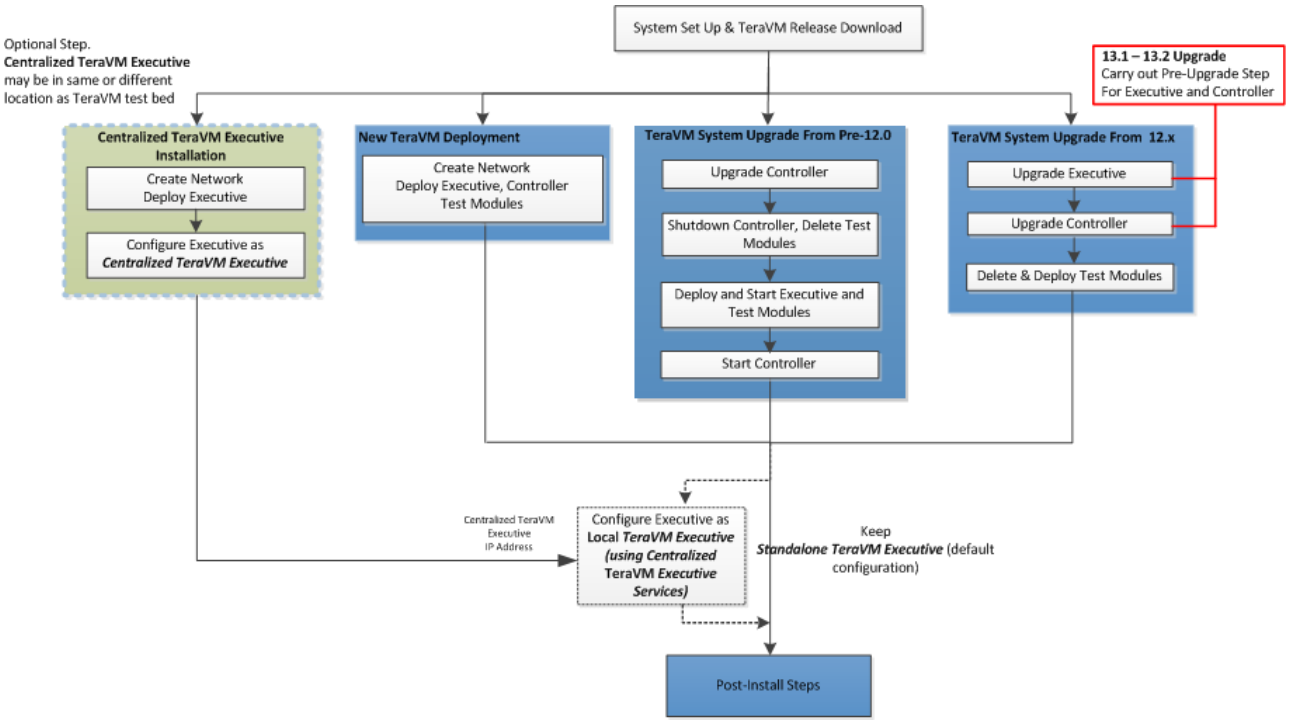
System Set Up & TeraVM Release Download
Optional Step.
Centralized TeraVM Executive
may be in same or different
location as TeraVM test bed
13.1 – 13.2 Upgrade
Carry out Pre-Upgrade Step
For Executive and Controller
Centralized TeraVM Executive Installation
Create Network
Deploy Executive
Configure Executive as
Centralized TeraVM Executive
New TeraVM Deployment
Create Network
Deploy Executive, Controller
Test Modules
TeraVM System Upgrade From Pre-12.0
Upgrade Controller
Shutdown Controller, Delete Test Modules
Deploy and Start Executive and Test Modules
Start Controller
TeraVM System Upgrade From 12.x
Upgrade Executive
Upgrade Controller
Delete & Deploy Test Modules
Centralized TeraVM Executive IP Address
Configure Executive as
Local TeraVM Executive
(using Centralized
TeraVM Executive
Services)
Keep
Standalone TeraVM Executive (default configuration)
Post-Install Steps

2.1. Upgrade from 13.1 to 13.2 Pre Upgrade Step

This procedure must be done when upgrading TeraVM 13.1 to 13.2, before upgrading the TeraVM Controller and the TeraVM Executive. **Note:** This procedure not required when updating the d500/d1000.

Prerequisite

- Failure to follow this procedure during an upgrade will lead to a timeout or an error message. This will not negatively impact the upgrade, but you must follow this procedure and apply the pre-upgrade steps.

1. From the *Welcome to TeraVM* page, select **Upgrade System** and login using:

   Username: **diverAdmin**

   Password: **diversifEye**

   Figure 2-2. Welcome to TeraVM

2. Select the **Choose File** button.
3. Select the appropriate pre-upgrade file and click **Open**.

   TeraVM_Controller-13.2_preupgrade-98134-upload.tgz

   TeraVM_Executive_1.6_preupgrade-98132-upload.tgz

4. Click **Upload**. The file uploads in several seconds.
5. You can now continue with the upgrade as normal.

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2.2. Upgrading Off Controller Repository

Use this procedure to upgrade the Off Controller Client Repository.

Prerequisites

- This procedure assumes you have a correctly installed Off Controller Client Repository.

1. Download the Client Repository off Controller Upgrade file.
2. In the vSphere Client ensure that the Client Repository Off Controller is powered on.
3. In the vSphere Client select the Client repository Off Controller and note its IP Address from the **Summary** tab in the **General** pane.
4. Enter the IP Address in your browser and make a note of the **Software Version** displayed under the **System Information.**

5. Select **Upgrade System**. *The Upgrade System page opens.*
6. Click **Browse** and select the Off Controller Client Repository Upgrade file that you previously downloaded.
7. Click **Upload**. *When completed, a file uploaded message is displayed.*
8. Click **Upgrade**.

   •An error is displayed in your browser. **Please note** that this is expected behavior.

   • Check the IP Address of the Client Repository Off Controller, it may have changed.

9. Enter the IP Address of the Client Repository in the browser and check the **Software Version** under the System Information panel. *The Software Version has incremented.*

2.3. Check Your Current Versions against Upgrade Installer

The Upgrade installer can be used in conjunction with the versions listed below. If the release you are currently using is not listed, please contact Cobham support.

Attention

If you are upgrading from a release prior to 11.0, please contact Cobham support as you may need to run an additional step.

Release versions use the following convention:

`"Major.Minor-BuildNumber" or "X.Y-Build"

where X represents the major version, Y the minor version.

Table 2-1. Controller Releases Supported by Installer

11.0-257	11.0.1-259	11.1-300
11.2-334	11.2.1-339	11.3-379
11.3.1-401	11.3.2-420	11.4-613
12.0-1454	12.0.1-1692	12.0.2-1961
12.0.2-1996	12.0.3-2053	12.0.2-2030
12.1-3090	12.1-3110	12.1.1-3121
12.1.2-3152	13.0-3297	13.1-3699
13.1-3703	13.2-3946	

Table 2-2. Executive Releases Supported by Installer

1.0	1.1	1.2
1.3	1.4	1.5
1.6		

Chapter 3. Platforms

3.1. Hardware

Hardware Platforms

The matrix below shows which hardware TeraVM has been certified on.

Cisco UCS		**DELL**	
Model	***NIC***	***Model***	***NIC***
C240	Cisco VIC 1285 PCIe Ethernet NIC (40Gig)	R630	Intel 82599EB 10-Gigabit SFP
			Intel 10-Gigabit X540-AT2
C220	Cisco Systems Inc VIC 1225 PCIe Ethernet NIC (10Gig)		Broadcom (1G)
		R620	Intel 82599EB 10-Gigabit SFP
			Broadcom (1G)

3.2. Hypervisors

The 13.2 release has been tested with the following hypervisors and versions (AWS, XEN and Azure platforms are tested with major releases):

Table 3-1. Hypervisors

Hypervisor	**Hypervisor Version**	**TVM Version**	**TVM Types***	**vSwitch Type**	**Executive Version**	**Virtual NIC**
ESXi***	ESXi 5.5_U1 and U3		See ***	VMXNET3	1.6	VMware VMXNET3 virtual interface
KVM	Ubuntu 14.04.1/libvirt 1.2.2		TVM-5	OVS 2.0.2	1.6	virtio
	RedHat 7.1/libvirt 1.2.8-16**		TVM-5	Supplied with TeraVM	1.6	
AWS	AMI Virtual Private Cloud		TVM-2	Supplied by Amazon	1.6	N/A

**** For KVM on Red Hat, OVS 2.0.2 is supplied as part of TeraVM.

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***Addtional ESXi Information

- ESXi supports TVM-2 to TVM-5, TVM-7, TVM-8 and TVM-16.
  - TVM-7 is supported for VPN applications only.
  - TVM-8 and TVM-16 are for use with Mellanox Cards. They require a mimimum version of ESXi of 5.5.0. Unlike other Test Module types which have only one core for interrupt processing, TVM-8 and TVM-16 use half of their cores for control.
- ESXi 5.5.x supports both Direct Path/DPIO and virtual switch configurations.
- You can now specify a solid state drive when deploying TeraVM.
- TeraVM is now also tested with ESXi version 6.0, but is not fully certified in performance tests.

Note

- vSphere/vCentre v6.0 supports Direct Path and vSwitch only. (SR-IOV is not supported).

3.3. Operating Systems

The following table shows the operating systems that TeraVM Java Client has been tested with.

Table 3-2. Operating Systems

Operating System	Version
Windows	7,8
Fedora (32-bit)	22

3.4. Web Browsers

TeraVM is developed to work with modern web browsers that support HTML5.

The following table shows the web browsers that TeraVM has been tested with. Cobham will make every reasonable effort to support older versions.

Table 3-3. Web Browsers

Browser	Version
Mozilla Firefox	42.0.49
Internet Explorer	11
Google Chrome	56

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Chapter 4. Bugs Fixed and Known Issues

4.1. Bugs Fixed

The following defects were addressed in this release. For further details, please contact Cobham support.

Table 4-1. Bugs Fixed in This Release

Bug Number	Description
24021	The executive utilities syslogs option is missing the logs for the Auth, Guacamole and Poolmanager services also now GSC services
24055	Cannot use more than one User Generated Certificate in a Test group
24069	GTP over ESP tunnel MTU not set correctly
24073	MLIPS crash when transmitting DHCPv6 solicit
24075	AnyConnect IKEv2 w/ DCA not working - EAP Response not sent due to Fragmentation
24214	RTSP Latency Statistics: An XML containing an RTSP Server that was provisioned on a per-13.2 release fails to be imported
24219	Cannot Configure Licence Tracker feed from Executive utilities
24226	Anyconnect DTLS Sessions Errored cu not being reported
24234	Anyconnect DTLS crash in mlips_ssl_connect
24259	diversifEye: RTSP test group fails to start when enabling latency stats on RTSP server and client
24264	Upgrade from 13.0 to 13.1 failed. Upgrade log indicate No diversifEye rpm installed and reboot was issued during CSDB upgrade

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4.2. Known Issues

These are the known issues in this release. For further details, please contact Cobham support.

Table 4-2. Known Issues in this Release

Bug Number	Description
23900	VoIP UA Internal error: Timer delay is zero or too large, (would cause wraparound)
24282	NetFlow Duration field not populated 0 is not a valid flow duration
24238	LT reports with a new LS only show licences when they are check out, not in the subsequent days they are still checked out
24143	Dual Transport option leaves VoIP UA hanging after 100 Trying message
24176	setServiceStateOfApplicationsInTestGroup with VoIP UA on TCP Characteristic Host fails with LazyInitializationException
24177	Upgrade to 1.4 (970) failed during upgrade to 13.0 on a 12.0.2 system
24132	WARNING: Slow stats! Test Agent: 60/3 may be overloaded. Nominal Sample Time
24023	cli listInterfaces Match is not returning the correct count
21453	IGMP JPS test stops on KVM
21519	Cannot run test on SR-IOV enabled NetXtreme II NICs when 1 TA is using more than 1 VF on the same PF
22759	On deploying a fresh RHEL 7.1 system the fourth TVM does not always start
22808	TestGroup is being stopped with Exception if another user attempts to run a test on the same ports.
22858	Juniper NC ESP VPN: srrd>Agent (mlips) session ended unexpectedly with Error When Running Test
23021	Controller hangs at "request interfaces from Pool Manager". CLI JVM dies and automation fails
23382	Anyconnect SSL with Failover enabled sends increasing CSTP Frames each failover
23426	java.lang.OutOfMemoryError: Java heap space (v12.0.2 Build 2027)
23605	KVM: Java GUI crashes after a PDU capture **Note** This is due to an MTU mismatch between the Client PC and the Management port. Set these to the same value to prevent this networking issue from occurring.
23625	Unable to login into TVM-C's webpage after upgrading the TeraVM Executive from 1.0-353 to 1.3-836
23678	If the JAVA UI is open while the CSDB test wtih 11k pcaps is running, it runs out of heap memory after 7k pcaps.

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23683	Unfriendly exception when running EMIX ThroughPut or Soak test with External IPs
23739	Using Chrome to browse to PM UI sometimes causes the UI to freeze when PM has 1,000+ logical ports.
23788	Problems checking out a test from the CTL
23765	CSDB upgrade should not be allowed on some platforms
23771	Cannot run a test with the same VLAN on different Test Modules
23785	Cannot share a CSDB test
24233*	Executive VM - Services DNS Server - non DNS env prevents httpd daemon from starting up

* Regarding the upgrade of any TeraVM Executives that are using Static IP Address for management that do not have an entry for DNS/nameserver. The upgrade of the Executive will fail to complete. **Note** Please contact Cobham Support before attempting any upgrade for workaround.

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Appendix A. TeraVM Documentation Set

All TeraVM Guides are available for download at the TeraVM documentation portal:

http://ats.aeroflex.com/login-account

The complete TeraVM documentation set is listed below.

Table A-1. TeraVM User Guides

User Guides	**Description**
Release Notes	New features / Changes in the latest release. (Includes supported versions).
TeraVM HTML5 User Guide	TeraVM overview includes setting up and running tests in the HTML5 UI, Centralized Test Library.
TeraVM Java Client User Guide	How to create and run tests in the Java Client: Details of applications and hosts supported. There are also separate application notes for Citrix ICA, SIP trunking and EoGRE.
TeraVM CLI User Guide	Using the Automation Interface (CLI, Perl commands and RFC scripts) for testing. Also man pages are available for commands and scripts in the Documentation sub-directory *cli*.
TeraVM Appliance Set Up Guide	TeraVM Hardware Appliance Set Up (Appliance Customers only).
TeraVM vRAN User Guide	Combined NG4T / Cobham solution for RAN, Core and Peripheral IP Emulation for 4G.
TeraVM Licensing Guide	How to set up and configure licensing features, e.g. set up license servers and license reporting.
TeraVM Application Library Test Configuration Guide, Application Library Repository Users Guide	Traffic generation test solution for creating application flows. Includes repository setup information.

Table A-2. Hypervisor/Cloud Specific TeraVM Set Up Guides

Hypervisor/Cloud Environment	**Document Name**
ESXi	TeraVM on VMWare Set Up Guide
KVM	TeraVM on KVM Set Up Guide
OpenStack on KVM	TeraVM on OpenStack Set Up Guide
Citrix XenServer	TeraVM on Citrix Xen Set Up Guide
Hyper-V	TeraVM on Hyper-V Set Up Guide
Amazon AWS	TeraVM on Amazon AWS Set Up Guide
Microsoft Azure	TeraVM on Microsoft Azure Set Up Guide

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Table A-3. TeraVM Reference Guides

Reference Guides	**Description**
TeraVM Metrics Guide	Statistics/Metrics available with TeraVM
CLI Reference Guides (under *Documentation/cli*).	Man pages are available for commands and scripts in the Documentation sub-directory

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