

TeraVM

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# TeraVM Release Notes

*TeraVM Release 13.1*



## 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](mailto:TeraVMSupport.CN@aeroflex.com) (China)

[TeraVMSupport.EMEA@aeroflex.com](mailto:TeraVMSupport.EMEA@aeroflex.com) (EMEA)

[TeraVMSupport.USA@aeroflex.com](mailto:TeraVMSupport.USA@aeroflex.com) (North America)

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## Chapter 1. What's New in 13.1

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

### 1.1. IPsec Support for S1

A new test, **EPC Security Gateway Performance**, has been added to the Central Test Library. This test enhances the current EPC testing capabilities and is included to test the LTE backhaul security. LTE security requires the establishment of IPsec tunnels: IPsec IKEv2 for tunnel establishment, and IPsec ESP tunnel mode to carry LTE traffic. These tunnels are established for S1-MME traffic between the eNodeB and the MME and S1-U traffic between the eNodeB and the Serving Gateway. For more information on this feature, see Use Case: EPC Security Gateway Performance in the *TeraVM vRAN User Guide*. For the description of the test and its parameters, see *TeraVM HTML5 User Guide*.

### 1.2. Adaptive Tests

This release sees the introduction of an adaptive testing paradigm to the HTML5 user interface that is incorporated with newly designed test templates in the Central Test Library. The 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. This release includes the following adaptive throughput tests in the Central Test Library:

- HTTP Throughput test
- 450 Byte Test

For more information on using the adaptive tests, see the *TeraVM HTML5 User Guide*.

### 1.3. RTSP MoS Scores

This feature sets all passive analysis metric/statics to Null when the RTSP Client is not in service. The TeraVM clears MoS statistics when put out of service or an RTSP session ends. MoS statistics are reported as !NoData.

### 1.4. Group Select For MCA Handshake

This feature builds upon the initial support for Multiple Certificate Authentication (MCA), introduced in release 12.1.2, by adding the Group-Select mandatory attribute in the MCA handshake.

The `<group-select>` element may be included in the `<config-auth>` `type="init"` and must be included in the `<config-auth>` or `type="auth-requestreply"` message sent from the client. The `<group-select>` element indicates the group alias (ASA term for identifying a policy for a group of users) to which the user will authenticate.

The `<group-select>` element is used to pass the group name that was selected by the user from the group list that was delivered from the SG at connect-time. The value for `<group-select>` could also be delivered in the initial message (before the group list is received for the current connection) and would contain the group that was selected from the list on the previous successful authentication. Also, whenever a new group is selected during authentication, a new `init` message must be sent with the selected group in the `<group-select>` element.

## 1.5. Copy/Paste Test Group within TeraVM

The copy and paste functionality that allows the copy and pasting of a Test Group has been reintroduced to the Java GUI in this release. For more information on how to cut and paste a Test Group, see Copying a Test Group in the *TeraVM Java Client User Guide*.

## 1.6. TCP Max Retransmission Timeout

In this release the Java GUI sees the inclusion of the **TCP Maximum Retransmit Timeout** parameter that can be configured with different values for different End Points. To configure the parameter go to **TCP Characteristics Properties** and select the **TCP Parameters tab**. For parameter descriptions, see the TCP Characteristics Settings in the *TeraVM Java Client User Guide*.

## 1.7. SIP Home Gateway

TeraVM emulates the VoIP functionality of the SIP Home Gateway with support for up to 32 simultaneous calls from a single IP address. This is accomplished via the TeraVM SIP Trunking functionality on a DHCP enabled host. The VoIP configurations for this feature are done through the TeraVM Java UI and the Global Settings.

## Chapter 2. Upgrading to this Release

### Important

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

- **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 from 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 2.1](#) to perform the upgrade.

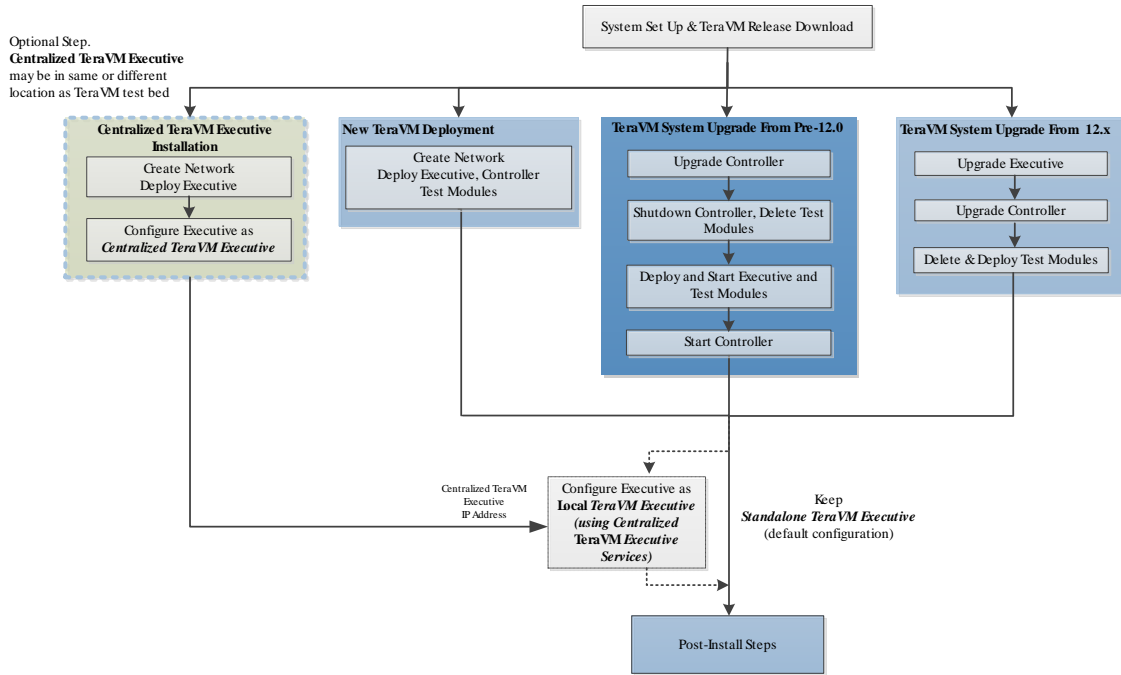
TeraVM supplies a separate Client Repository which can be of unlimited size, external to the Controller (Off Controller). It comes as a separate virtual machine, and must be downloaded separately. The repository is sized at 32GB by default. You can increase this by adding disks in vSphere (you cannot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

- **Cybersecurity Updates**

When you perform this upgrade, all Cybersecurity Updates from April 2nd 2017 will be removed. Please download and reinstall the latest Cybersecurity updates. 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 13.1



## 2.1. 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.*



## 2.2. 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		

*Table 2-2. Executive Releases Supported by Installer*

1.0	1.1	1.2
1.3	1.4	1.5

## 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 13.0 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	3.0.19	See ***	VMXNET3	1.5	VMware VMXNET3 virtual interface

#### \*\*\*Additional 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 minimum 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

## 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*

<b>Bug Number</b>	<b>Description</b>
22183	Pool Manager - Paste fails due to unknown error
22288	Copy and Paste resulted in an error message: "modified object is stale: null id: null"
22918	Scaled TeraFlow Servers Validation on same Scaled Host seems incorrect
23602	Web Admin - Global Settings shortcut link needs to point to new page
23828	RTSP issuing TEARDOWN Loss of Tune whilst still receiving media
23843	VoIP IPv6 fragment reassembly cannot reassemble three 3 fragmented packets
23851	HTTP Client Mean GET time for POST command counted twice or is halved
23862	RTSP Mean Session Duration appears to accumulate after each session
23867	Java CLI Timeout when running under high load on multi-host Pooled system
23874	Suite B cipher suite does not work against VoIP UAS Handshake Failure
23875	The deployment of SR-IOV (RDA) can result in the wrong MAC addresses being used on the interfaces
24009	Vpn.pl Script and PacketRouting Functionality
24018	Netflow stat menu options are disabled when the testgroup stops.
24019	TeraVM Test Groups are very slow to Start up to 24 minutes
24041	Immediate Stop when Stopping Global Setting retains MOS on Client Side for Out of Serv
24058	Multi Cert Authentication Segmentation Violation
24084	Stats Not Arriving On Time Fine/Stats Occasionally Missing, Despite "Reasonable" Amount of Elements Enabled
24085	Segmentation violation while running emix test
24210	Cannot use leading Zeros in Scaled VoIP UA Application

## 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
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  <b>Note</b> 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 with 11k pcaps is running, it runs out of heap memory after 7k pcaps.
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 RDA platform
23771	Cannot run a test with the same VLAN on different Test Modules
23785	Cannot share a CSDB test
24023	cli listInterfaces Match is not returning the correct count
24132	WARNING: Slow stats! Test Agent: 60/3 may be overloaded. Nominal Sample Time

24176	setServiceStateOfApplicationsInTestGroup with VoIP UA on TCP Characteristic Host fails with LazyInitializationException
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.

## 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 <i>cli</i> .
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

*Table A-3. TeraVM Reference Guides*

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



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