



# Pulse Secure Virtual Traffic Manager: Release Notes

Supporting Pulse Secure Virtual Traffic Manager 20.1r2

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*Pulse Secure Virtual Traffic Manager: Release Notes*

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# Release Notes

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## Overview

Pulse Secure Virtual Traffic Manager 20.1r2 is a maintenance release of the Pulse Secure Virtual Traffic Manager product family, containing a number of performance and functionality enhancements and bug fixes. Customers are recommended to upgrade to this version to take advantage of the changes.

## Product Compatibility

You can install and use this product version on the following platforms:

### Software

- Linux x86\_64: Kernel 2.6.32 - 5.2, glibc 2.12+  
For Route Health Injection: ncurses 5 (libncurses.so.5, libtinfo.so.5)

### Containers

- Docker: 1.13.0 or later recommended

### Cloud Platforms

- Amazon EC2 - as a virtual appliance or native software install
- Microsoft Azure - as a virtual appliance
- Google Compute Engine - as a virtual appliance or native software install

### Hardware Platforms

- Bare Metal Server - for information on qualified servers, see the Pulse Secure Virtual Traffic Manager Hardware Compatibility List at <https://www.pulsesecure.net/techpubs>

## Virtual Appliance Editions

- VMware vSphere 6.0, 6.5, 6.7, 7.0
- XenServer 7.1, 8.0, 8.1
- Microsoft Hyper-V Server 2016
- Microsoft Hyper-V under Windows Server 2016 and 2019
- QEMU/KVM (RHEL/CentOS 6.x, 7.x; Ubuntu 16.04, 18.04)

## Resource Requirements

Virtual appliances should be allocated a minimum of 2GB of RAM.

For a virtual appliance upgrade to succeed, a minimum of 2.7GB must be available on the `/logs` partition. To confirm the available free disk space, use the **System > Traffic Managers** page of the Admin UI.

## Large Objects in the Webcache

A Traffic Manager running 20.1r2 is unable to store objects greater than 2GB in the web cache, even if the web cache is enabled and all cacheability conditions are met. If you rely upon this feature, contact Pulse Secure Technical Support (see ["Technical Support" on page 5](#)).

## Fixed Issues and Other Changes

The following table lists issues that have been fixed and are resolved by upgrading to this release.

Report Number	Description
<b>Configuration</b>	
VTM-15765, SR19864	Fixed an intermittent failure during configuration replication caused by transient temporary configuration files.
VTM-43955	Two virtual server settings <b>http2_client_buffer_multiplier</b> and <b>http2_server_buffer_multiplier</b> have been added to limit the amount of in-process memory allocated by Traffic Manager to buffer data for a HTTP/2 connection. <b>http2_client_buffer_multiplier</b> limits HTTP/2 data received from clients not yet sent to pool nodes and <b>http2_server_buffer_multiplier</b> limits the HTTP/2 data received from pool nodes not yet sent to clients.
VTM-43954	A global setting <b>max_tcp_buff_mem</b> is added to limit the total amount of in-process memory allocated by Traffic Manager to buffer TCP data for all TCP connections. The Traffic Manager buffers TCP data received from pool nodes not yet sent to clients or received from clients not yet sent to pool nodes.
<b>SNMP</b>	
VTM-16220, SR20354	Fixed an issue where SNMPv2 TRAPs emitted by the Traffic Manager did not conform to RFC 2578 because they had a superfluous ".0" (zero) appended to the OID.
<b>Connection Processing</b>	

Report Number	Description
VTM-44178	Fixed an issue where, when HTTP/2 was enabled, memory could be gradually leaked if a malicious client caused a very large number frames to be queued, as a previous update in 17.2r2 to mitigate CVE-2019-9517 was ineffective.
VTM-44147	Fixed an issue that the memory used to buffer TCP data for a HTTP/2 request could be uncapped. Such uncapped TCP buffer could cause excessive memory usage.
VTM-42577	When receiving a request from an HTTP/2 client with no request body, the Traffic Manager no longer sends a "Content-Length: 0" header to an HTTP/1.1 back-end node. Whilst the previous behavior was valid in RFE 7241, some servers were confused by the additional header.
VTM-44133	Fixed an issue that some buffered data for closed TCP connections might not be deallocated promptly
VTM-44110	Periodically logged diagnostics have been enhanced to include information of memory usages for different purposes.
VTM-43882	Periodically logged diagnostics have been enhanced to include information of the size of internal queues for HTTP requests and TCP connections.
VTM-44088	Fixed an issue that the memory used by HTTP/2 streams which are blocked by protection class could be held by the Traffic Manager until either the Traffic Manager is restarted or the corresponding virtual server's configuration is changed.
VTM-43887	Fixed an issue whereby the Traffic Manager would incorrectly handle an excessive number of outstanding HTTP/2 frames, resulting in connections being dropped or denied.

### Connection Debugging and Tracing

VTM-43925	Periodically logged diagnostics have been enhanced to include information of the memory usage for network connection buffers.
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### DNS Server

VTM-43675	Fixed an issue that virtual servers using the DNS protocol could wrongly append a byte to DNS responses with client subnet option. This applies both to responses generated by the built-in DNS server and to responses generated by DNS backend nodes.
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### Service Protection

VTM-43551	Fixed an issue where it was possible to provide malformed arguments to the "BuiltIn-PCS_PPS" script.
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### SSL/TLS and Cryptography

VTM-43999	Fixed an issue where only the client certificate itself was sent to a pool node when the pool setting <b>ssl_fixed_client_certificate</b> was used to specify a chain of certificates to be sent in response to any certificate request from a node.
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### Technical Support Report (TSR)

VTM-43883	Periodically logged diagnostics have been enhanced to provided memory heap statistics.
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Report Number	Description
VTM-43744	<p>Updated top command to run twice and show full command in periodic-log, procmon and technical support report. Added the following additional information to Technical Support Report:</p> <ol style="list-style-type: none"> <li>1 GeolP version to new file support/geoip_version.txt.</li> <li>2 /proc/&lt;PID&gt;/smaps to new file /proc/&lt;PID&gt;/smaps.</li> <li>3 NIC rx-flow-hash for TCP4, UDP4, TCP6 and UDP6 to existing file support/networking.txt.</li> <li>4 Current CPU frequency settings to new file support/cpufreq.txt.</li> </ol>
Telemetry	
VTM-44019	Fixed an issue that the telemetry script <code>zxtm-crash</code> could consume too much memory if the event log file size is large.

## Pulse Secure Virtual Traffic Manager Appliance

The following table lists issues that have been fixed and are resolved by upgrading to this release.

Report Number	Description
No changes in this release.	

## Known Issues

The following table lists the Known issues in the current release.

Report Number	Report	Description
VTM-41385	Software in Ubuntu 16.04 on GCE	A Traffic Manager software install on a GCE instance running Ubuntu 16.04 can report a serious error "sysconfig_error GCE IP routes error: Didn't find nic label for <MAC address>". This does not occur for Ubuntu 18.04.
VTM-34654	KVM Network Interface Card renaming	In rare circumstances a KVM host may change the PCI addresses of a virtual appliance's network cards after a reboot, resulting in the network interface labels changing. This can be fixed by removing the configuration from the non-existent card on the Traffic Manager Admin UI <b>System &gt; Networking</b> page and re-adding it to the correct card.
VTM-38881	Obsolete counters are missing from old REST API versions	Obsolete counters removed from version 6.0 of the status API are missing in versions 5.X, despite the schemata published with the product claiming they are still present.
VTM-38948	The format of encrypted bootloader passwords has changed in version 18.2	The format of encrypted bootloader passwords changed in version 18.2. When upgrading from a version earlier than 18.2 with a bootloader password set, the bootloader will be unprotected, and a configuration error will be reported until the password is re-entered. It can be set on the <b>System &gt; Global Settings</b> page of the Admin UI.



Report Number	Report	Description
VTM-38962	Pre-18.2 Admin UI rollback tools will not offer roll-forward to 18.2 or later	After rolling back from 19.2 to a vTM version earlier than 18.2 the rollback version selector on the <b>System &gt; Traffic Managers</b> page of the Admin UI will not offer versions after 18.2 as an option. Use <code>\$ZEUSHOME/zxtm/bin/rollback</code> from the command line to switch back instead.

## Upgrade Instructions

20.1r2 can be installed directly using any supported installation mechanism.

Traffic Manager software installations can be upgraded directly to 20.1r2 using any supported upgrade mechanism, except those running Traffic Manager version 17.2 which must be upgraded to a non-r-release (for example 20.1) before upgrading.

Traffic Manager instances (appliance or cloud) running release 18.2 or later can be upgraded directly to 20.1r2 using any supported upgrade mechanism.

Traffic Manager instances (appliance or cloud) running versions prior to 18.2 must first be upgraded to a non-r-release, such as 18.2 or 19.2.

To learn more about upgrading your Traffic Manager, see the *Pulse Secure Virtual Traffic Manager: Installation and Getting Started Guide* applicable to your product variant.

## Documentation

Pulse Secure documentation is available at <https://www.pulsesecure.net/techpubs>.

For policy reasons, security issues are not normally mentioned in release notes. To find more information about our security advisories, see the [security advisory](#) page on the Pulse Secure website.

## Technical Support

Pulse Secure Virtual Traffic Manager 20.1 is designated a Long Term Support (LTS) release.

Full support for version 20.1 will be available for three years from the release date of 16th March, 2020. For more information, see the End of Support and End of Engineering Schedule notices at the following location: <https://support.pulsesecure.net/product-service-policies/eol/software/vadc-virtual-traffic-manager/>

For additional information or assistance, contact Pulse Secure Global Support Center (PSGSC):

- <https://support.pulsesecure.net>
- [support@pulsesecure.net](mailto:support@pulsesecure.net)
- Call 1-844-751-7629 (toll-free USA)

For technical support resources, browse the Pulse Secure Technical Support website <https://support.pulsesecure.net>.

