



# BreakingPoint for APS Platform Release Notes

Release 9.17, September 2021

Release Notes Version 1.0



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# Overview

## Document Purpose

This document provides information regarding the BreakingPoint for APS 9.17 release, including information about new features, known defects and workarounds (if available).

## Background

Powered by Application and Threat Intelligence, BreakingPoint enables companies to maintain resilient IT infrastructures against escalating threats. Only BreakingPoint security and performance testing products stress and optimize end-to-end IT infrastructures by creating real user actions with a blend of application and attack traffic including malware, mobile malware, DDoS, and more.

## Technical Support

To contact the BreakingPoint Support team, e-mail them at [support@ixiacom.com](mailto:support@ixiacom.com) or call them at 1-818 595 2599.

## Documentation

The listed BreakingPoint documentation can be obtained at:

<https://support.ixiacom.com/user-guide>

- *Ixia BreakingPoint for APS User Guide*
- *Ixia APS-M1010/APS-ONE-100 Installation Guide*
- *KCOS CLI Reference Guide for APS*

## What's new in this release

BreakingPoint 9.17 release is a dedicated release to introduce Keysight's new APS Series next-generation network applications and security modular test platform.

Keysight's APS platform consists of the APS-M1010 controller and APS-ONE-100 traffic generation appliance modules that can be stacked to provide customers with a cost-effective "pay-as-you-grow" approach to their network applications and security testing needs.

A single APS-M1010 controller can support up to ten APS-ONE-100 appliances in a single system offering linear scalability and flexibility. Each APS-ONE-100 appliance supports two native QSFP28 100GE active interfaces for test traffic generation. For this release we recommend the use of SR (short range) transceivers.

A single APS-ONE-100 Appliance delivers unparalleled real-world Transport Layer Security (TLS) performance of up to 100K TLS connections per second, 150 Gbps bulk encryption throughput and 3.2M concurrent connections per appliance. The hardware-based TLS acceleration significantly boosts overall encryption performance, significantly improving the transmission of realistic application mixes over TLS connections. With up to 75 Gbps per single TCP connection, the APS-ONE-100 appliance provides industry's highest Elephant Flow performance.

For a list of BreakingPoint functionalities supported on the new APS Series platform, please refer to the [Supported Features](#) section below.

For more information on the new system's capabilities please refer to the dedicated User Guide. Detailed instructions on the system configuration and installation can be found in the APS Installation Guide. Both are available for download on the support site.

## Software Compatibility

Please review the following table to identify the software required for your hardware platform.

BreakingPoint 9.17 is only supported on the new APS platform. For legacy platforms please refer to <https://support.ixiacom.com/support-overview/product-support/downloads-updates> for compatible software packages.

Platform	BreakingPoint Firmware
APS-M1010/APS-ONE-100	BreakingPoint for APS 9.17

## Hardware Compatibility

The BreakingPoint for APS 9.17 release is supported on:

Part Number	Description
941-0113-01	APS-M1010 Management Controller Node
941-0110-02	APS-ONE-100, Compute Node with 4x100GE front I/O ports for the APS-M1010 Management Controller

## Browser Compatibility

The table below lists the HTML browsers supported by BreakingPoint for APS. Browser versions that are more current than the versions listed in the table may work, but have not been tested at this time. Beta versions of HTML browsers are not supported.

Browser	Recommendation for Windows	Recommendation for MAC
Google Chrome	93.0.4577.82 (64-bit)	93.0.4577.82 (64-bit)
Firefox	Firefox 92.0.1 (64-bit)	Firefox 92.0.1 (64-bit)
Microsoft Edge	94.0.992.31	N/A
Safari	N/A	15.0 (15612.1.29.41.4)
Internet Explorer	Not supported	N/A

**Note:** Mac users with OS 10.8.2 can use Firefox or Google Chrome as their browser.

# Supported Features

The following table lists the BreakingPoint features supported on the new APS series platform in this release.

Test Components		Network Neighborhood	
Application Simulator	✓	Static IPv4 Hosts	✓
Client Simulator	✓	Static IPv6 Hosts	✓
Security	✓	IPsec	✓
Security NP	✓	Virtual Router	✓
Session Sender	✓	Test Paths	✓
Stack Scrambler	x	Proxy	✓
Bit Blaster	x	NAT	✓
Routing Robot	x	DHCPv4 (client/server)	✓
Recreate	x	DHCPv6 (client/server)	x
SCTP	x	LTE (IPv4)	✓
BreakingPoint Labs	x	LTE (IPv6)	✓
Test Series	x	6RD	x
Device Validation	x	DSLite	x
Device Under Test	x	IPv6 SLAAC	x
		Impairment	x

## Known Issues and Defects

The following section details the known issues and defects of BreakingPoint Release 9.17. Workarounds are listed for each defect if they are available. If you have any concerns or questions regarding the defects listed here, please contact the BreakingPoint support team at [support@ixiacom.com](mailto:support@ixiacom.com) or call them at 1-818-595-2599.

Reference #	Description
<b>BUG1561205</b>	To avoid network errors and use the APS hardware at maximum performance, each test component requires its own pair of Virtual Routers in the Network Neighborhood. This is applicable for tests that require VR due to the availability of only two MAC addresses per port.
<b>BUG1537744</b>	For the APS platform, the maximum throughput is lower than the theoretical bidirectional line-rate.
<b>BUG1559262</b>	The APS-ONE-100 CPUs have variable frequency technology, meaning that after a period of inactivity they will go to low energy mode. This can cause the first test run after an idle period to have lower performance than expected – the workaround is to restart the test.
<b>BUG1566875</b>	The first port in BreakingPoint and KCOS with id 0 is corresponding to the first test interface port on the chassis labeled as 1. Similarly, port 1,2,3 corresponds to labels 2,3,4.
<b>BUG1548614</b>	Layer 2 latency has lower accuracy due to lack of latency hardware support.
<b>BUG1550746</b>	APS 100 ports will always use the VNIC MAC address regardless of the configuration in the network neighborhood.
<b>BUG1562466</b>	In BreakingPoint, the packet capture on the receiving port is executed on the application layer and are therefore observed as bigger aggregated segments, not what is actually sent/received on the wire. The packet capture on the transmitting data port reflects the correct packets.
<b>BUG1565231</b>	The software data capture will impact throughput performance.
<b>BUG1565281</b>	The checksum values are computed by the NIC hardware when they are sent. Currently, the software capture can't catch the packet as it goes out on the wire.
<b>BUG1565633</b>	For captures collected during back to back tests, the frames count and size is not always accurate.
<b>BUG1565851</b>	The progress bar will show 0% during the entire packet capture export process.
<b>BUG1567050</b>	When using Super Component with a custom load profile, some of the limits like data rate are not respected.

<b>BUG1559550</b>	In some scenarios the maximum throughput for IPSEC-IKEv1 tests is limited to ~20Gbps.
<b>BUG1564708</b>	Attached rates may vary during the tests on APS platform. In most scenarios there are variations present towards the end of the test.
<b>BUG1564933</b>	The progress bar will show 0% during the entire diagnostics generation process.
<b>BUG1565705</b>	Link status cannot be changed on reserved ports. To change the link status, unreserve the port, change link status and reserve the port again.
<b>BUG1566133</b>	In some scenarios, the throughput will show a temporary increase in the ramp down phase. This is due to connections being torn down and test system resources being freed.
<b>BUG1566509</b>	The configured percentage of TLS session reuse is not always guaranteed to be maintained.
<b>BUG1560998</b>	KCOS Cloud Native Architecture approach limits the ability of changing the system date and time due to underlying Kubernetes architecture.
<b>BUG1561298</b>	Elephant Flow in proxy mode achieves lower performance due to the usage of proxy buffers.
<b>BUG1565283</b>	Sometimes an error can occur if a user tries to log in immediately after an upgrade. The workaround is to wait for a few minutes.
<b>BUG1565950</b>	When Proxy is enabled, Elephant flow will not have the max performance achievable without Proxy enabled.
<b>BUG1565995</b>	With the Elephant Flow test - running with a single or fewer connections - the test will sometimes run into some CPU core usage issues. Occasionally CPU usages shows unequal values throughout the cores.
<b>BUG1561860</b>	For TLS 1.3, PSK is not supported in this release.
<b>BUG1559900</b>	After a user with administrative permissions signs out from the Access Control page, the user is still connected in WAF. When this same user selects the Access Control option from WAF page again, they will be required to enter the credentials, while this was not initially required.
<b>BUG1562116</b>	When HTTPS and HTTP-Simulated is running within a single Super Flow, test shows cryptographic errors with HTTPS flows. The workaround is to remove the HTTP-simulated flows and run them separately.
<b>BUG1565217</b>	Reboot is required when creating a snapshot in order to ensure data consistency.
<b>BUG1565270</b>	xshell will not display progress correctly during the installation of new packages.

<b>BUG1565456</b>	DNS Perf QPS value is limited to 5.7M in the current release.
<b>BUG1565675</b>	Full DB restore functionality is no longer supported. With this architecture export/restore needs to be done separately for users and tests.
<b>BUG1566414</b>	For TLS mix with smaller handshake timeout under 30 seconds, some of the Super Flows can get expired causing handshake failures. A larger handshake timeout should be used as a workaround.

# Operational Considerations

Reference #	Description
<b>NA</b>	LR (long range) transceivers are not supported for this release, we recommend the use of SR (short range) transceivers with BPS 9.17 and APS platform.
<b>EAGLSWPLAT-1282</b>	After restarting the management node, it could take up to 5 minutes for the KCOS Shell to be ready in the background even though the login prompt is displayed. Console might not start, or authentication might fail during this time.
<b>EAGLSWPLAT-1275</b>	During an abrupt shutdown, like a power failure, if no nodes are connected on the system the BreakingPoint device status may still see the slots as initializing. Please check the status of the nodes in CLI introspection and delete them in case they were physically disconnected.
<b>EAGLSWPLAT-1272</b>	If the kcos-framework-v1-nfs-server-provisioner is deleted, BreakingPoint will need to be reinstalled as it will no longer start (attaching the nfs-storage will fail to attach and it will be visible in the BPS pod description).
<b>EAGLSWPLAT-1190</b>	When checking the firmware using "kcos system firmware show", BMC name will show "unknown". This will be addressed in future releases.
<b>EAGLSWPLAT-1187</b>	During initialization, while the BreakingPoint application does not have all services ready, the system will return a 503 or 404 Error page when trying to connect to it with a web browser. In some rare scenarios, when database corrections need to be made, it can take up to 1 hour for the BreakingPoint page to display.
<b>EAGLSWPLAT-1163</b>	On rare occasions, some compute nodes may become stuck while rebooting. Please power cycle the node if it takes more than 30 minutes to complete the rebooting process.
<b>EAGLSWPLAT-785</b>	Compute nodes need to start up in managed mode. They may start in unmanaged mode if the management node is not ready when the compute node is started. Both managed and unmanaged modes display the same login prompt but the compute nodes, when in managed mode (correct mode), will not enter the KCOS CLI after login. Only a management node will allow KCOS CLI functionality as a central administration node.
<b>EAGLSWPLAT-1295</b>	During startup there will be a pciehp link status and cdrom mount failed messages. Please ignore these harmless messages and continue to wait for the login prompt. The system is starting up in the background even if there is no information displayed for several minutes.

<b>EAGLSWPLAT-1296</b>	Setting the date back to earlier than September 2021 from the KCOS CLI will result in the system not being able to start again. Note that the user will not be able to reset the date as the CLI will not be accessible.
<b>EAGLSWPLAT-1297</b>	When running the command "kcos system firmware show", do not update the Firmware Type CPU0-PCIe_ReDriver or CPU1-PCIe_ReDriver if the current version displays as 0.0.0. The firmware version programmed by manufacturing is newer than the current released version contained in the software build.