



# BreakingPoint Firmware Release Notes

Release 8.50, Sept. 2018

Release Notes Version 1.2



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# Overview

## Document Purpose

These release notes provide information regarding the BreakingPoint 8.50 (Version: 8.50.22.25, Build: 340495) release. This includes information about new features, resolved SRs, 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> > **BreakingPoint**

- *Ixia BreakingPoint User Guide*
- *Ixia BreakingPoint Virtual Edition (VE) Installation Guide*
- *Ixia BreakingPoint Migration Guide*

Documentation for, *PerfectStorm - XGS12 Chassis Platform Assembly Guide*, can be obtained at:

[http://downloads.ixiacom.com/library/user\\_guides/IxOS/8.00/EA\\_8.00\\_Rev\\_A/XGS12ChassisPlatformAssemblyGuide/XGS12ChassisPlatformAssemblyGuide.pdf](http://downloads.ixiacom.com/library/user_guides/IxOS/8.00/EA_8.00_Rev_A/XGS12ChassisPlatformAssemblyGuide/XGS12ChassisPlatformAssemblyGuide.pdf)

# New Features

The new features in BreakingPoint 8.50 release are:

## Proxy Support

This release has extended the Proxy Support mechanism for IMAPv4-Advanced, SMTP and POP3-Advanced flows in BreakingPoint. The new proxy mechanism determines the end of protocol specific messages in order to keep the Client and Server in sync. The Super Flows which support Proxy are tagged accordingly in the Super Flow Manager window of BreakingPoint Application.

## TCP Fixed Received Window Size

In this release, a new "Dynamic received window size" check box is available under **TCP Configuration**.

When the checkbox is selected	The receive window size can be dynamically increased during a TCP session.
When the checkbox is not selected	The receive window size cannot be increased during a TCP session - it remains fixed in all scenarios. This is the default behavior (which is the same as in earlier BPS releases).

## CloudStorm 50G Support:

In BreakingPoint 8.50, we have introduced 50GE Fan-out support for CloudStorm. Two 100G QSFP28 ports in CloudStorm can split into four ports of QSFP28 50GE. Resources from each 100GE CloudStorm port are distributed on to the 2 Fan-out ports in a single resource group. Each Fan-out Port will work as an independent port instance in the Blade. Resources on a 100G card are distributed among the Fan-out ports to achieve the same overall performance as the 100G CloudStorm card.

## **Resource Utilization**

The display of Resource Utilization for Network Processor and Memory Usages has been enhanced in the Real Time Statistics and PDF Reports. Now the consumed CPU and Memory Usage for the Network Processor and System Controller are displayed while a test is running on the system. These statistics will help users understand:

- When the BreakingPoint hardware is experiencing resource exhaustion for a specific test.
- When an amount of higher performance can theoretically be achieved based on the resources available for a specific test.

Please note that this feature is not supported on BreakingPoint VE, FireStorm or Storm platforms in this release.

## **Incremental ATI Strikepack Update**

To decrease the amount of time required to complete an ATI Strikepack update, we have added an Incremental Strikepack Update enhancement. An incremental update will contain the delta from the baseline version, is much smaller in size than a Base update (Base update is a full update which contains all ATI content produced to date). The installation of a delta update is expected to be 2 to 3 times faster than a Base update depending upon the BPS platform (PerfectStorm, FireStorm, BPS-VE etc.). Two Base updates are expected to be made available per year. Please note that other ATI update features (Cloud Update, Incremental update and Offline updates) are also included in this release.

## **Advanced Routing Robot Enhancement**

We have enhanced the existing Advanced Routing Robot functionality in this release by adding IMIX, IPv6, and Delay Start functionality.

## **Traffic Rewind Enhancements**

This release introduces per processor import of TrafficREWIND exported Live Profiles (distributed mode of TrafficREWIND 2.2 or higher) in LiveAppsim. This feature enables regeneration of aggregated production traffic of all processors, regeneration with different combinations of processors and regeneration of production traffic individually for each processor.

This release also added support to display throughput Key Performance Indicators by importing TrafficREWIND Live Summary Profiles in LiveAppsim.

## **Customer Issue Resolutions**

This release also addresses several important issues reported by BreakingPoint users. Please refer to the [Resolved Defects](#) section for the complete list.



## Software Compatibility

BreakingPoint 8.50 (Version: 8.50.22.25, Build: 340495) Firmware Release is a cross-platform release. Please review the following table to identify the software required for your hardware platform.

Platform	BreakingPoint Firmware	IxOS Software	FlixOS Software
XGS12-HS chassis (PerfectStorm Load Modules)	BreakingPoint 8.50 (8.50.22.25 Build 340495)	IxOS 8.50EA	FlixOS for Native IxOS: 2018.1.78.xx (see the <a href="#">Product Compatibility Matrix</a> for the correct FlixOS version)  FlixOS for Windows IxOS: 2018.1.0.xx
PerfectStorm ONE Fusion appliances	BreakingPoint 8.50 (8.40.20.25 Build 340495)	IxOS 8.50EA	FlixOS for Native IxOS: 2018.1.78.xx (see the <a href="#">Product Compatibility Matrix</a> for the correct FlixOS version)  Note: Starting with 8.13, PerfectStorm ONE does not support Windows-based software. To support 8.13 and higher releases, PerfectStorm ONE appliances need to be <a href="#">converted to Native IxOS</a> .

## Hardware Compatibility

The BreakingPoint 8.50 Release is supported on CloudStorm, PerfectStorm, BreakingPoint VE, Storm and Firestorm Platforms.

### 12-slot XGS12 Chassis and CloudStorm/PerfectStorm Fusion Load Module

Part Number	Description
940-0006	XGS12-HS 12-slot, Chassis Bundle
905-1016	CloudStorm 50GE FAN-OUT FACTORY INSTALLED option
905-1017	CloudStorm 50GE FAN-OUT-UPG UPGRADE Option
905-1029	CloudStorm 50G and 100GE Field upgrade option
905-1014	CloudStorm 25GE FAN-OUT FACTORY INSTALLED Option
905-1015	CloudStorm 25GE FAN-OUT-UPG FIELD UPGRADE Option
905-1018	CloudStorm 10GE FAN-OUT FACTORY INSTALLED Option

905-1019	CloudStorm 10GE FAN-OUT-UPG FIELD UPGRADE Option
905-1028	Field Hardware Upgrade from CloudStorm 10G to CloudStorm 10/40G
905-1030	Field Hardware Upgrade from CloudStorm 10/40G to CloudStorm 10/40/25G
905-1030	Field Hardware Upgrade from CloudStorm NonFusion to CloudStorm Fusion
944-1232	CloudStorm Fusion, 2-port 100GE Load Module (CS100GE2Q28NG), 40G Support with Upgrade license
944-1237	CS40GE2Q28NG: CloudStorm 40G fusion CloudStorm Fusion, 2-port 40GE Load Module (CS40GE2Q28NG), 100G Support with Upgrade license
944-1235	CS25GE8Q28NG: CloudStorm 25GE fusion 8-port 25GE Load Module
944-1233	CS100GE2Q28NGALL: CloudStorm 100GE fusion 2-port 100GE Load Module
944-1201	PerfectStorm Fusion, 2-port 40/10GE QSFP+ Load Module (PS40GE2NG)
944-1200	PerfectStorm Fusion, 8-port 10/1 GE SFP+ Load Module (PS10GE8NG)
944-1209	PerfectStorm Fusion, 4-port 10/1 GE SFP+ Load Module (PS10GE4NG)
944-1210	PerfectStorm Fusion, 2-port 10/1 GE SFP+ Load Module (PS10GE2NG)
944-1202	PerfectStorm Fusion, 1-port 100GE CXP Load Module (PS100GE1NG)

### PerfectStorm ONE Fusion Appliances

Part Number	Description
941-0028	PerfectStorm ONE Fusion, 40GE 2-port QSFP+ appliance (PS40GE2NG)
941-0027	PerfectStorm ONE Fusion, 8-port 10/1 GE SFP+ appliance (PS10GE8NG)
941-0031	PerfectStorm ONE Fusion, 4-port 10/1 GE SFP+ appliance (PS10GE4NG)
941-0032	PerfectStorm ONE Fusion, 2-port 10/1 GE SFP+ appliance (PS10GE2NG)
941-0033	PerfectStorm ONE Fusion, 8-port 1 GE SFP+ appliance (PS1GE8NG)
941-0034	PerfectStorm ONE Fusion, 4-port 1 GE SFP+ appliance (PS1GE4NG)

For the PerfectStorm platform, please refer to the [Product Compatibility Matrix](#) available on Ixia's website. An Ixia website account is required before accessing.

## Browser Compatibility

The table below lists the HTML browsers supported by BreakingPoint. 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	68.0.3440.75 (32-bit)	67.0.3396.99(64-bit)
Firefox	61.0.1 (64-bit)	61.0.1 (64-bit)
Microsoft Edge	38.14393.2068.0	N/A
Safari	Not supported	11.1.2
Internet Explorer	Not supported	Not supported

**Note:** In BreakingPoint 3.5.1, and higher releases, logging in to the management UI will not be allowed from HTML browsers that have a maximum SSL version setting that is limited to only sslv3 (ssl3).

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

# Upgrading to Release 8.50

## Compatibility Matrix

BreakingPoint	8.50
IxOS	8.50EA
IxLoad	8.50EA
IxNetwork	8.50EA
Licensing	5.10 EA

## Installation Notes

Specific instructions for installation on PerfectStorm systems are contained in the sections below.

**Note:** The version numbers shown in the images below may not be the current version numbers, but the procedure is the same.

### Systems running Windows IxOS (PS One | XGS2-HS | XGS12-HS)

If your system is running Windows IxOS, please follow below steps to convert to Native IxOS and BreakingPoint image to the system.

The BreakingPoint and IxOS packages are already present in the conversion package and will not require a separate installation after system is converted to Native IxOS from Windows based IxOS. No additional steps are required, and the system will be ready for running BreakingPoint test.

The conversion guide along with the necessary files can be downloaded from the Ixia support web page.

1. Go to: <https://support.ixiacom.com/> and then log in.
2. Click Software Downloads > IxOS > 8.50 EA.
3. For question #1, select the radio button: "PS One\* | XGS2-HS | XGS12-HS".
4. For question #2, select "Windows" for Base software.
5. For question #3, select "Yes" radio button to get to the conversion guide.
6. Follow the instruction from the "Converting XGS and PSOne to Native IxOS Guide (PDF)".

**Note:** After conversion to Native IxOS there may not be enough available disk space to restore a previously exported backup (especially for files larger than 1GB). If there is not enough space available, you can delete the pre-

conversion BreakingPoint data by using the IxOS CLI command, **uninstall bps legacy** (which frees up 250GB of disk space). Be aware that if you are reverting back to a Windows-based architecture, BPS application (BPS VM) will not start after uninstalling BPS legacy.

## Systems running Native IxOS, BreakingPoint System Upgrade (PS One | XGS2-HS | XGS12-HS)

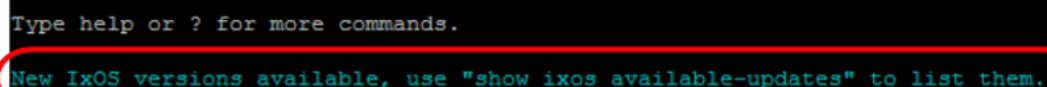
Ixia strongly recommends that you create backups of your system before upgrading to the 8.50 Firmware release.

- **Upgrading IxOS on Native IxOS systems**

### Online:

1. Access the Ixia Chassis CLI - `ssh admin@<chassisIP> -p 22, password: admin`
2. Apply command "enter Chassis" to access to Chassis CLI

You will be notified through the CLI when new builds of IxOS are available.

A screenshot of a terminal window with a black background and green text. The first line says "Type help or ? for more commands." The second line, which is highlighted with a red oval, says "New IxOS versions available, use 'show ixos available-updates' to list them." A green cursor is visible at the end of the second line.

```
Type help or ? for more commands.
New IxOS versions available, use "show ixos available-updates" to list them.
t
```

3. Run the `install ixos <version>` command to perform the install. The build will be installed automatically from Ixia IxOS online repository (which is predefined in the OS).

### Offline:

1. Download the IxOS build from <http://support.ixiacom.com/support-overview/product-support/downloads-updates/versions/21>.
2. Use FTP to put the file on to the Chassis.

```
ftp://<chassisIP>
user: admin
password: admin
```

```
Put Ixia_Hardware_Chassis_XX.XX.XX-EA.tar.gz.gpg
```

4. Access the IxOS CLI - `ssh admin@<chassisIP> -p 22, password: admin`
5. Apply command "enter Chassis" to access to Chassis CLI
6. Run the `install ixos <version>` command to perform the install of the version that was downloaded.
7. Reboot the chassis.

## Upgrading the BreakingPoint System

- **BreakingPoint in Native IxOS:** ixia-web-platform-bps-xx.xx.xx.xx.el7.x86\_64.waf should be used for chassis or appliances running in a Native IxOS system. Depending on the BPS version running on the system, the user needs to follow one of the two upgrade procedures below:

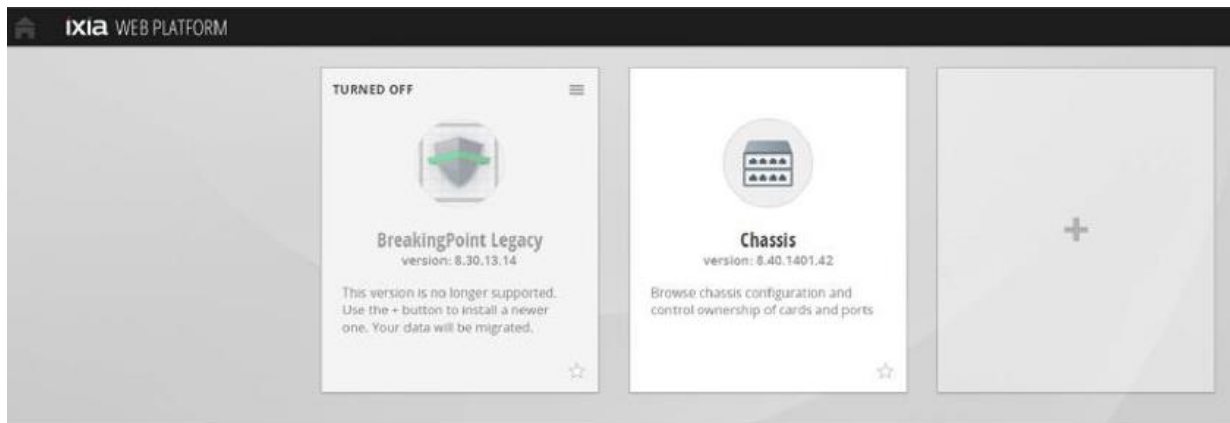
### 1. Systems running BreakingPoint 8.40 or newer

1. From IXIA BreakingPoint Page, click **Launch Administration**.
2. Click **BPS Software Update**
3. Click **UPDATE SYSTEM**
4. Click on the checkbox, "I created a backup ...."
5. Use BreakingPoint installer Package (ixia-webplatform-bps-8.50...waf) to upgrade to BreakingPoint 8.50 version. The installer package (ixia-webplatform-bps-8.50...waf) can be downloaded IXIA support download web page.

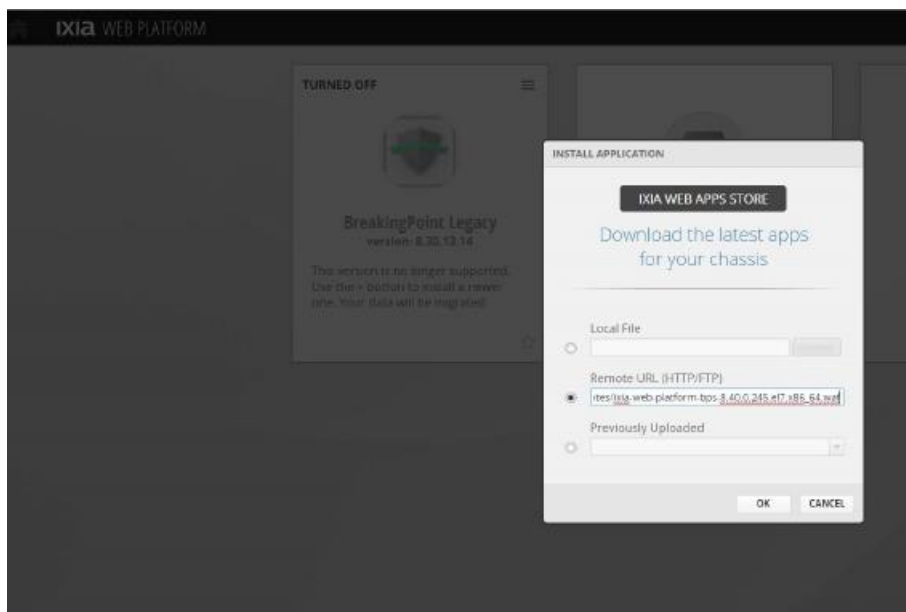
### 2. Systems running versions earlier than BreakingPoint 8.40

1. Once the IxOS installation is complete, connect to Chassis IP: <https://<Chassis IP>>.
2. Log in using user id: admin, password: admin.

After logging in, the WebPlatform Dashboard will display as shown in the image below.



3. Click the **Install New Applications** icon (+) to install BreakingPoint using the BreakingPoint installer Package (ixia-webplatform-bps-8.50...waf). The installer package (ixia-webplatform-bps-8.50...waf) can be downloaded from the IXIA support download web page.
4. Select the Installer Package as shown in the image below. Then click **OK** to start the BreakingPoint installation.



5. After the installation is complete, log in using user id: admin and password: admin.
6. Click the **BreakingPoint Application** icon to launch BreakingPoint.

## BreakingPoint System Upgrade for Windows running IxOS systems

Ixia strongly recommends that you create backups of your system before upgrading to the 8.50 Firmware release.

### Installation on XGS2-HS, XGS12-HS Chassis

Upgrade IxOS and BPS version **without** converting to Native IxOS

1. SSH to the chassis IP on port 8022 and check if the FlixOS version is 2017.2.0.4 or newer. If necessary, Upgrade FlixOS to the 2017.2.0.4 (or newer) following the procedure in the FLIX OS Upgrade Guide found at: <https://support.ixiacom.com/ixos-850-ea>
2. Upgrade the Windows IxOS version following the "Software Installation Procedure" paragraph from IxOS 8.50 GettingStartedGuide.pdf (it can be found at <https://support.ixiacom.com/user-guide/ixos>)
3. Connect to <http://<chassis IP>> and upgrade BPS as described below in the section Upgrade BPS for systems

**Note:** PerfectStorm ONE appliances starting with 8.13 release do not support IxOS on Windows and only Native IxOS version is offered for this platform ([see Conversion paragraph](#)).

## Upgrading the BreakingPoint Software for systems not running Native IxOS.

This procedure applies to upgrading BreakingPoint on Windows Based IxOS Systems, Storm/FireStorm and BreakingPoint Virtual Edition.

**Note:** There are 2 different types of BPS update file. Use the appropriate update file for your BreakingPoint system.

- Update.x.x.bps should be used for PerfectStorm running on Windows IxOS and for legacy Firestorm/Storm systems
- Update\_vm.x.x.bps should be used for BPS VE

Both of these 8.50 update packages can be applied to BPS versions 8.20 or greater. For systems running versions older than 8.20, it is required to upgrade your system to at least 8.20 before upgrading to 8.50.

### To update the Ixia BreakingPoint System:

1. Download the required BPS update file.
2. Log in to the Ixia BreakingPoint System.
3. Navigate to **ADMINISTRATION -> SYSTEM SETTINGS -> UPDATES.**
4. Select **UPDATE SYSTEM** (similar to **figure 1** below).
5. Browse to the location of the BreakingPoint update file and select **OK.**
6. The BreakingPoint update will take 30-45 minutes to complete.

SLOT	VERSION	PROD BUILD	STRIKE BUILD
0	3.4.2	236924	236208

## Update ATI Packages – applies to all BreakingPoint Versions

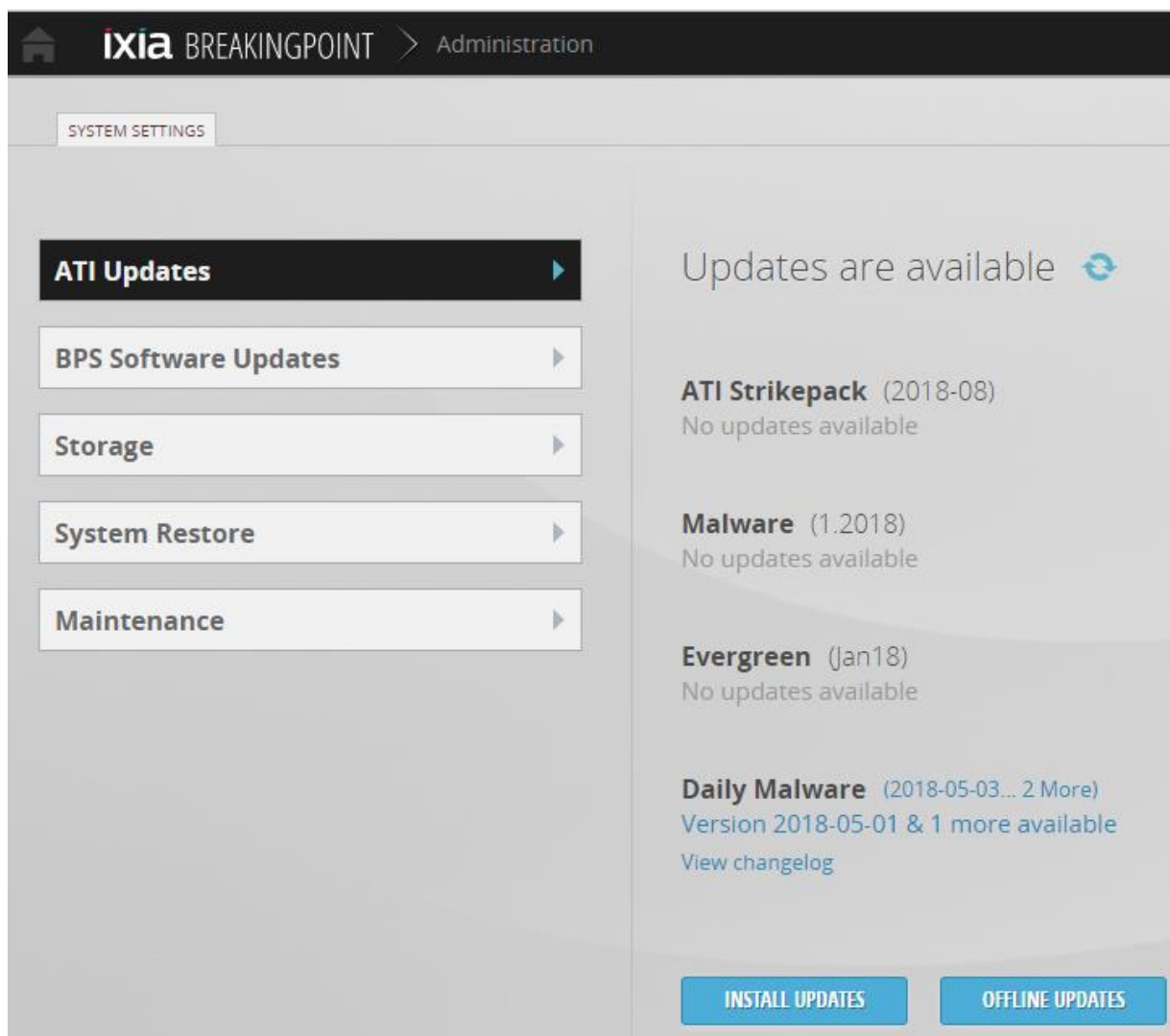
The Application and Threat Intelligence (ATI) program provides updates frequently to ensure the delivery of the industry's most up to date application and threat intelligence. Starting from this release, both Online and Offline ATI updates procedures are available. For Online update, user will be notified the availability of



the Update right after logging into the BreakingPoint systems, please refer to Figure 1. Choose the package to be installed and click "INSTALL UPDATES".

For an Offline update, download ATI Update Packages from: <https://support.ixiacom.com/support-overview/product-support/downloads-updates> , click **OFFLINE UPDATES**, please refer to Figure 1.

**Figure 1: Ixia WEB APPS Start Page**



## Resolved Defects

The following table lists defects from previous releases that have been resolved. 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>724343</b>	Resolved the issue where the Device Status page did not show the transceiver status accurately for different speeds.
<b>748587</b>	Resolved the issue where some sections of reports were not populated when exported to CSV.
<b>760172</b>	Resolved the issue where changing the internal chassis IP address caused the BPS UI to display a Device Status screen with an empty chassis (with all slots showing "undefined") while also displaying the message, "Connecting to IxServer".
<b>769891</b>	Resolved the issue where a SSL test was producing a cryptographic error in a scenario where the test was configured incorrectly.
<b>773660</b>	Resolved the issue where the Sequence Number for the RTP Protocol would remain at 0 and not increment.
<b>776670</b>	Resolved the issue where an imported .bpt file would overwrite a canned profile.
<b>777000</b>	Resolved the issue where IPSec in BPS did not use padding while using NULL encryption (per RFC 2406).
<b>780759</b>	Resolved an issue with the WhatsApp Voice Super Flow where Peer- to-Peer voice calls did not work as expected.
<b>781991</b>	Resolved the issue where Routing Robot required a MTU value of 9000 when the test had a Maximum Frame Size of 82 Bytes.
<b>784408</b>	Resolved the issue on BPS VE, where Recreate tests would fail during execution.
<b>787724</b>	Resolved the issue where a Routing Robot test would remain at 0% initialization when the Randomize IP Start Address option was selected, and the Source IP Count was less than 100.
<b>791122</b>	Resolved the issue where some BPS configurations would result in incorrect strike counts being reported.
<b>791126</b>	Resolved the issue where the Strike Count value displayed in the Real Time Statistics graph were lower than the number of strikes configured for the test.

<b>794438</b>	Resolved the issue where underscores were not permitted in the hostname field or SNI (Server Name Indication) in a Start TLS message.
<b>795939</b>	Fixed the issue where certain configurations would generate scrambled ICMP frames from a set of ports that were not connected to each other. This behavior would cause the test to stop.
<b>796427</b>	Resolved the issue where tests were failing with the error notification "Not enough free memory to allocate the Super Flow BreakingPoint SSL HTTPS 1.1".
<b>798658</b>	Resolved the issue where Modify Bearer Requests in GTP tests had the IP octets in the reverse order of the configured settings.
<b>799657</b>	Resolved the issue where, due to the delayed ACK setting being configured, the reported Application Transaction Count would be different in multiple runs of the same test.

## Known Issues and Defects

The following section details the known issues and defects of Firmware Release 8.50. 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>BUG1452573</b>	On BPS VE, a test that has an External Host configured in its Network Neighborhood will fail while trying to initialize.  Workaround: At this time, on BPS VE, do not use an External Host in your test's Network Neighborhood.
<b>BUG1460503</b>	If you receive the error, "Failed to connect to IxServer", after a BPS/WebPlatform system update, access the following page in the BPS UI to verify that the system IxOS License is valid.  Click the blue <b>Gear</b> > <b>Administration</b> > <b>System</b> , then click the <b>License Manager</b> tab.
<b>BUG1473637</b>	When testing with Proxy ON, BPS generated traffic patterns may not properly reflect the configured traffic mix percentages.
<b>BUG1476394</b>	On BPS-VE, Vulnerability Assessment Scanning Tools may report multiple ports open in the management interface. This issue will be addressed in a future release.
<b>BUG1478450</b>	On a CloudStorm 50G blade, when using Routing Robot with a MinFrame rate of 1 and a Frame size of 78 bytes, the reported

	<p>Component Stats for Received Frame Rate may display "0" multiple times during the duration of a test run.</p> <p>Workaround: Until this issue is resolved, the "0" values for Received Frame Rate can be ignored.</p>
<b>BUG1480475</b>	After receiving a notification that ATI updates are available and clicking the link to see more details, you may get directed to the wrong part of the BPS Administration UI.
<b>BUG1481177</b>	The <b>Aggregate Stats &gt; Detail &gt; System Resource Usage</b> page of a report may display values that are larger than they should be (for example, CPU usage of above 100%). To see the correct values, view the statistics in each Slot-NP section ( <b>Aggregate Stats &gt; Slot &lt;xx&gt; NP &lt;yy&gt; &gt; Detail &gt; System Resource Usage</b> ) or the statistics for the System Controller.
<b>BUG1483704</b>	When running an AppSim test, Frame Latency Distribution is not calculated/reported when proxy is enabled in the Network Neighborhood.
<b>BUG1483960</b>	When running a Malware test, NP Resources statistics may indicate a high usage value while NP Memory Usage statistics indicates 0%. This issue will be addressed in future releases.
<b>BUG1486140</b>	For accurate report generation, the current max VLAN support per port is restricted to 1000 VLANs. For a higher number of VLANs, reports are not generated properly (stats are missing).
<b>BUG1486241</b>	Exporting large packet captures from CloudStorm ports may take longer than expected. For example, exporting a 4GB capture may take approximately 1 hour.

## Operational Considerations

Reference #	Description
<b>1468345</b>	When using a CloudStorm card in Fan-out mode, the NP allocation is done dynamically based on the resources needed. However, in order to ensure that all resources are allocated at all times, you need to select the client/server interfaces from different Resource Groups.
<b>1427345</b>	The available disk space on the chassis after Native IxOS conversion becomes limited. Up to 70% of the HDD contains information for restoring the chassis to Windows mode (undoing the Native IxOS conversion). We recommended that you reclaim this disk space by deleting the legacy BPS information (use IxOS CLI command: <code>uninstall bps legacy</code> ) before running a long duration scaled test.
<b>1425901</b>	CloudStorm hardware interprets the increment/decrement port settings in a slightly different manner than earlier BPS blades. In both cases the user sets the "starting port number" and the "mask size". For example, consider an incrementing case where the mask is set to eight bits; In

	CloudStorm, the port numbers generated will increment from "starting port + 0" to "starting port + 255". In blades other than CloudStorm, using the same settings, the eight least significant bits in the starting port will be replaced by an incrementing value of 0 to 255. It should be noted that if the user sets the "starting port number" such that the masked bits are zero, the resulting port # sequences generated by both sets of hardware will be identical. This is likely the most common configuration as the masked bits in the "starting port number" are essentially ignored by legacy hardware. The newer mechanism gives more flexible control over the port ranges.
<b>1425332</b>	On CloudStorm for a Security/Security NP test in combination with other components such as AppSim or Routing Robot, adding a new component and changing the tags might take an extended period of time. The higher the number of components the longer the delay for the tag change.
<b>1423380</b>	Four AppSim components are required to achieve the Max GTP UE attached rate on CloudStorm.
<b>1422408</b>	The Delayed Start feature in Layer 2/3 on a CloudStorm blade has a +/- 10 second tolerance in this release.
<b>1409901</b>	The files created for backups of native IxOS databases vary in size, and can take more than an hour to backup or to restore. The main component of their size is the number and size of test reports included in the database files. If you wish to reduce the time taken by the backup and restore functions, delete unneeded test reports prior to running the backup or restore.
<b>1398134</b>	Note that GTP tunnel creation is not dependent on the number of sessions. BPS creates tunnels irrespective of session rate.
<b>1309762</b>	When PerfectStorm is in L2/L3 mode, only one network processor is available to generate application traffic. Therefore, maximum performance/throughput is expected to be lower for L4/L7 test components while L2/L3 tests will perform as expected.