BreakingPoint Firmware Release Notes

Release 3.5.1, Oct. 2015

Release Notes Version 1.1

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Overview

Document Purpose

These release notes provide new information regarding the Breaking Point 3.5.1 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 or call them at 1-818 595 2599.

Documentation

The following table lists the latest documentation for all BreakingPoint products.

Document	Location
Ixia BreakingPoint User Guide	https://strikecenter.ixiacom.com/docs/BPS_UserGuide_3.5.1.pdf
Ixia BreakingPoint Virtual Edition (VE) User Guide	https://strikecenter.ixiacom.com/docs/BPS_VirtualEdition_UserGuide_3.5.1.pdf
Ixia BreakingPoint Storm Installation Guide	https://strikecenter.ixiacom.com/docs/BPS_Storm_InstallationGuide_3.5.1.pdf
Ixia BreakingPoint FireStorm Installation Guide	https://strikecenter.ixiacom.com/docs/BPS_FS_InstallationGuide_3.5.1.pdf
Ixia BreakingPoint FireStorm ONE Installation Guide	https://strikecenter.ixiacom.com/docs/BPS_FS_ONE_InstallationGuide_3.5.1.pdf
Ixia BreakingPoint 20 Installation Guide	https://strikecenter.ixiacom.com/docs/BPS_20_InstallationGuide_3.5.1.pdf
Ixia BreakingPoint Virtual Edition (VE) Installation Guide	https://strikecenter.ixiacom.com/docs/BPS_VirtualEdition_InstallationGuide_3.5.1.pdf

PerfectStorm - XGS12 Chassis Platform Assembly Guide	http://www.ixiacom.com/support-services/product-support/user-guides#All_Software_-IxLoad

New Features

BreakingPoint 3.5.1 Firmware is a minor release that targets cross-platform (Storm, Firestorm and PerfectStorm, PerfectStorm ONE) quality improvements and introduces the following enhancements and features:

NSS Test Packs

Ixia and NSS Labs have combined NSS Labs' proven test expertise and Ixia's BreakingPoint security test suite into Test Packs that give enterprises the ability to find network issues and failures in their own labs prior to deployment, saving time and costs.

In the 3.5.1 release we are releasing the Network Intrusion Prevention System (IPS) Test Methodology v7.2 and Next-Generation Firewall Test Methodology v5.4 both designed to validate the security effectiveness, performance and stability of the security device.

Improved Routing Robot UI Scalability

This enhancement is designed to reduce the configuration complexity of Routing Robot on the PerfectStorm 40G & 100G. Now with a single Routing Robot component and with single network neighborhood range/tag per 40G & 100G interface you can generate line-rate stateless traffic

Application and Threat Intelligence (ATI) – 2015 Key Highlights

The Application and Threat Intelligence (ATI) program provides comprehensive and current application protocols and attacks. This year, the ATI program enabled customers with an active ATI subscription to have timely access to:

- 42 new applications
- 143 new superflows
- 549 new exploit strikes
- 250 new botnet strikes
- 450 live malware strikes
- Monthly updates for "Evergreen Applications"

BreakingPoint 3.5.1 Release provides access to:

- 36895 strikes (malware and exploits)
- 3409 predefined, application superflows
- 295 applications

The Ixia BreakingPoint Application and Threat Intelligence (ATI) program provides bi-weekly updates of the latest application protocols and attacks for use with Ixia platforms. Leverage ATI subscription service to stay ahead of attacks and use the latest application definitions.

ATI: BreakingPoint 3.5.1 Security Highlights

- 13 new applications
- 34 new superflows
- 407 new strikes (107 new exploit strikes, 150 live malware strikes, 150 botnet strikes)
- NTP Mode 7 Reflection Distributed Denial of Service Attack (version 2)

ATI: BreakingPoint 3.5.1 Application Support

- SCADA (OPC UA, Ethernet/IP)
- Office 365 Online (Word, Outlook People, Excel, PowerPoint, OneNote, Sway)
- Apache Cassandra
- Doodle
- Seamless
- MQTT
- Blogger

ATI: New Predefined Superflows

The ATI selection included with this release note is a subset of all the features and enhancements published through our ATI program on a bi-weekly basis. For a complete list, please review the individual release notes for each ATI update posted to https://strikecenter.ixiacom.com/

Key Highlights

- OPC UA Binary Open Secure Channel
- OPC UA OPC UA Binary Secure - Get Endpoints Response
- OPC UA Binary with Error Message
- Ethernet/IP Connected
- Ethernet/IP Unconnected
- Office 365 Word Jul 15
- Office 365 Outlook People Jul 15
- Office 365 Outlook People Jul 15 Create and Delete a Contact
- Office 365 Outlook People Jul 15 Search for a Contact
- Office 365 Excel Jul 15
- Office 365 Excel Jul 15 Create Workbook
- Office 365 Excel Jul 15 Open Workbook
- Office 365 OneNote Jul 15
- Office 365 Sway Jul 15
- Office 365 Sway Jul 15 Configure
- Office 365 Sway Jul 15 Create Presentation
- Office 365 Sway Jul 15 Edit Presentation
- Office 365 Sway Jul 15 Preview Presentation
- Apache Cassandra DB
- Apache Cassandra DB Start Up
- Apache Cassandra DB Start Up and Registration
- Doodle July 2015 Create poll
- Doodle July 2015 Invite poll participants
- Doodle July 2015 Participate in poll
- Seamless
- Seamless Login/Logout
- Diameter Rx
- Diameter S9a
- SIP RTP Voice call w ENUM
- Diameter Rx
- Diameter S9a
- Blogspot Aug 15
- Blogspot Aug 15 Create and Publish a new Blog
- Blogspot Aug 15 Delete Blog

Software Compatibility

BreakingPoint 3.5.1 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	Flix OS Software
Firestorm chassis (Storm, Firestorm, Firestorm20)	BreakingPoint 3.5.1	Not applicable	
Firestorm ONE appliance	BreakingPoint 3.5.1		
XGS12-HS chassis (PerfectStorm Load Modules)	BreakingPoint 3.5.1	IxOS 6.90 EA	Flix OS 2015.1.0.66
PerfectStorm ONE Fusion appliances	BreakingPoint 3.5.1	IxOS 6.90 EA	Flix OS 2015.1.0.66
BreakingPoint Virtual	BreakingPoint 3.5.1	Not Applicable	

Hardware Compatibility

The BreakingPoint 3.5.1 Release is supported on all hardware platforms and BreakingPoint VE.

3-slot Firestorm Chassis and Firestorm ONE appliance

Part Number	Description
981-0001	BreakingPoint Firestorm, 3-slot chassis
981-0058	BreakingPoint Firestorm ONE, 4-port 10/1 GigE SFP+ appliance
982-0001	BreakingPoint Firestorm 4-port 10/1GigE SFP+ blade
982-0021	BreakingPoint System Controller
982-0037	BreakingPoint Storm, 1 GigE 4-port blade
982-0026	BreakingPoint Storm, 1 GigE 8-port blade
982-0027	BreakingPoint Storm, 10 GigE 4-port blade
982-0040	BreakingPoint Firestorm 20, 20-port 10/1GigE SFP+ blade

12-slot XGS12 chassis and PerfectStorm Fusion Load Modules

Part Number	Description
940-0006	XGS12-HS 12-slot, Chassis Bundle
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 PerfectStorm platform, please refer to the Product Compatibility Matrix available on Ixia's website. An Ixia website account is required before accessing.

Browser Compatibility

Firmware Release 3.5.1 continues Ixia's transition to an HTML5-based architecture for the Ixia BreakingPoint user interface. Mac users with OS 10.8.2 can use Firefox or Google Chrome as their browser. Safari, Internet Explorer, Opera and beta versions of HTML browsers are not supported.

Browser	Recommendation for Windows	Recommendation for MAC
Google Chrome	45 & 46	45 & 46
Firefox	38.01 & 39.03	38.01 & 39.03
Safari	Not supported	Not supported
Internet Explorer	Not supported	Not supported

Note: In BPS 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).

Upgrading to Release 3.5.1

Before you upgrade to a new firmware release, please create a backup of your current system.

General Notes

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

Backing Up the Ixia BreakingPoint to a NFS Server

This example uses an Ubuntu Linux computer and the Ixia BreakingPoint system.

Starting from the Linux computer:

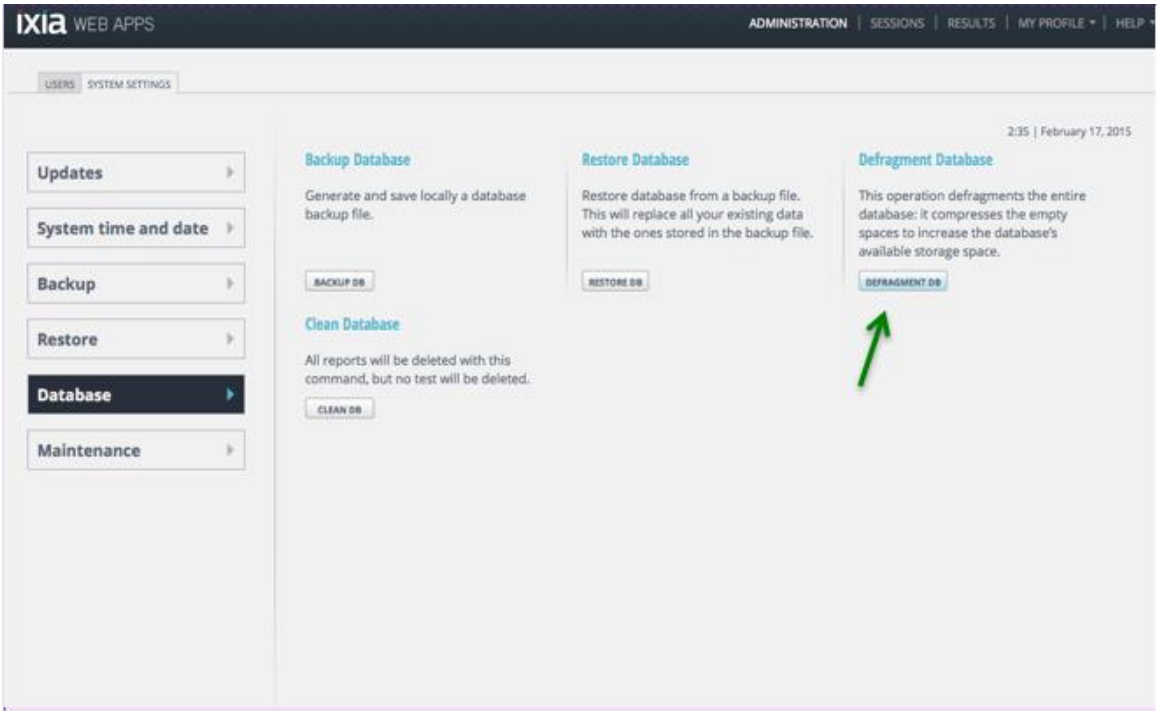
1. Download the required software
    a. sudo apt-get install nfs-kernel-server portmap
    b. sudo /etc/init.d/nfs-kernel-server start
2. Export the shared directory
    a. sudo mkdir /var/nfs/
    b. sudo chown nobody:nogroup /var/nfs
    c. sudo chmod 777 /var/nfs
3. Allow Directory Exporting

a. sudo vi /etc/exports

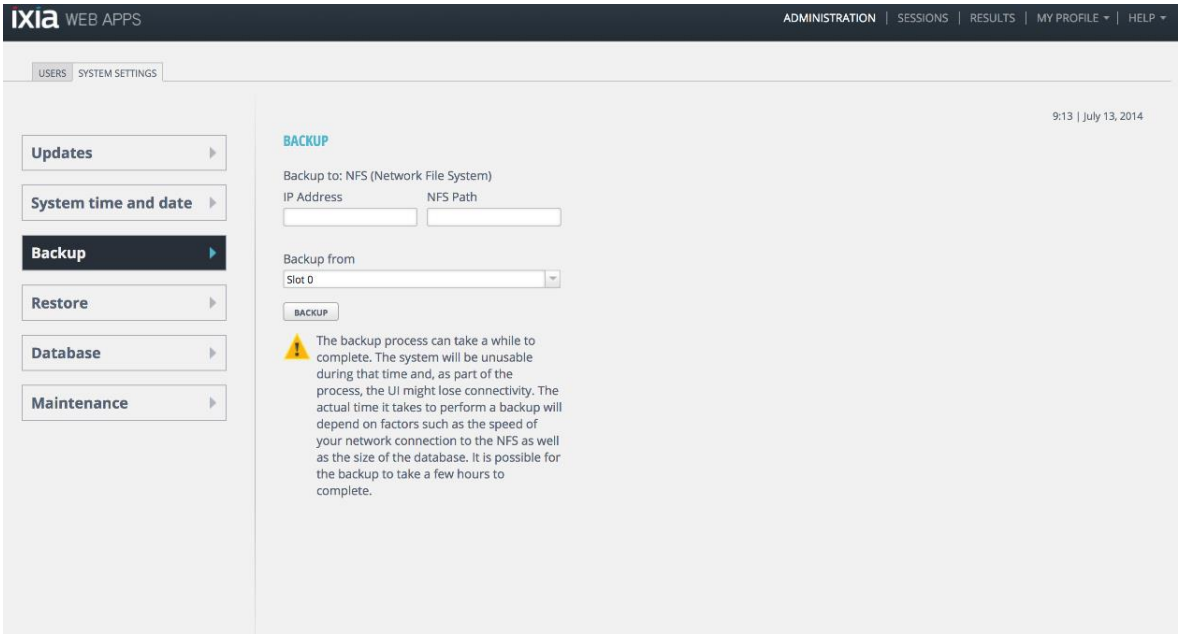
4. Add the Following Line to /etc/exports
    a. /var/nfs 12.33.44.555(rw,sync,no_subtree_check)
5. Export the Shared Directory
    a. sudo exportfs -a

Setup NFS Backup on the Ixia BreakingPoint System

1. Log in to the Ixia BreakingPoint and navigate to **Database** within the Ixia Web Apps (Administration > System Settings).
2. Run the **Defragment Database** option (this may take some time to complete).

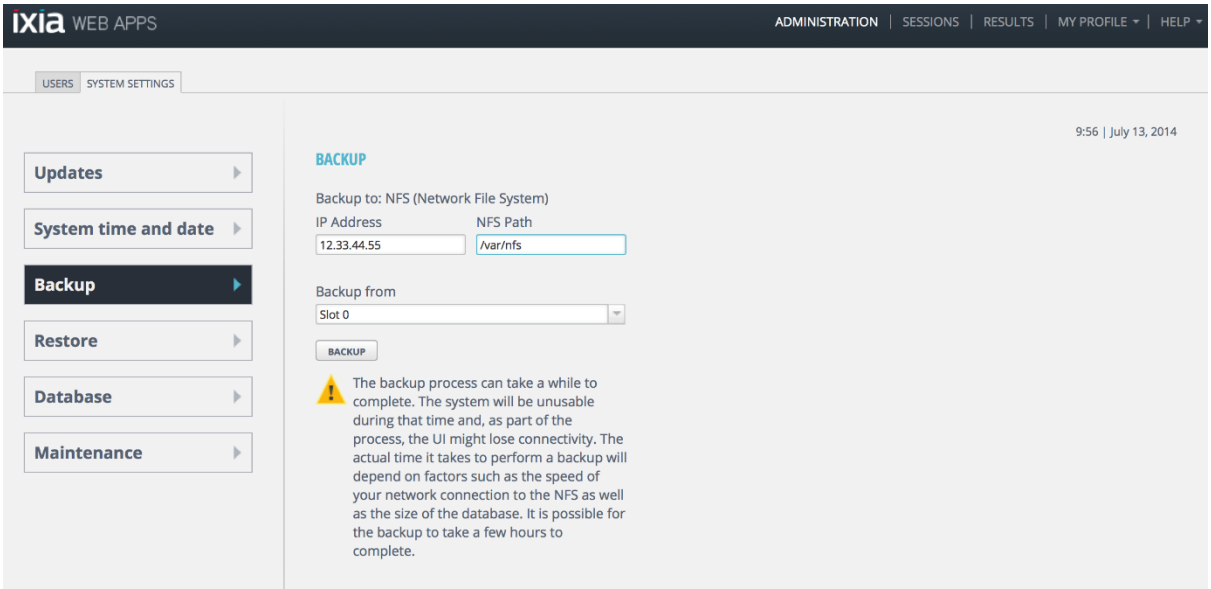


3. Log in to the Ixia BreakingPoint and navigate to **Backup** within the Ixia Web Apps:



4. Enter the IP address of the NFS Server and the Location of the Shared Directory:

    a. (example) IP Address: 12.33.44.55
    b. (example) NFS Path: /var/nfs
    c. (example) Backup From: Slot 0



Installation on BreakingPoint FireStorm

Ixia strongly recommends that you create backups of your system before upgrading to the 3.5.1 Firmware release *and* after upgrading to the 3.5.1 Firmware release.

Note: After upgrading to 3.4.1 and above, Backup and Restore to USB is supported on Firestorm and Firestorm ONE.

The table below describes the steps that are required to upgrade to 3.5.1 from earlier BPS Firmware releases.

Current BPS Firmware	Upgrade Path to BPS 3.5.1 Firmware
3.4.2	-> 3.5.1
3.4.1	-> 3.5.1
3.4	-> 3.5.1
3.3.1	-> 3.5.1
3.3	-> 3.5.1
3.2	-> 3.3 (or higher version) -> 3.5.1
3.1	-> 3.3 (or higher version) -> 3.5.1
3.0.1	-> 3.3 (or higher version) -> 3.5.1
3.0	-> 3.3 (or higher version) -> 3.5.1

Note: During an update from 3.0, the user may encounter the following system error: "Nov 21 16:03:54 localhost [dbchecker] database connection not functional, restarting". This is a normal occurrence. Ignore the message and continue with the upgrade.

After upgrading the FireStorm system to version 3.5.1, you must restart the system in order for all of the subsystems to initialize.

Upgrading multi-blade FireStorm systems to Release 3.5.1, requires installation of the new firmware to all Firestorm blades. For example, if the Ixia BreakingPoint software needs to upgrade a Firestorm in slots 0, 1, and 2, all blades must be checked before upgrading. The FireStorm in slot 0 will upgrade at a relatively shorter time than the Firestorms in slots 1 and 2.

Installation on XGS12-HS Chassis and PerfectStorm ONE Fusion Appliances

To install BreakingPoint 3.5.1, you must perform the following steps:

1. Upgrade the FLIX OS to version 2015.1.0.66.
2. Upgrade the IxOS version 6.90 EA.
3. Upgrade BreakingPoint software to firmware 3.5.1.
4. After the BreakingPoint software upgrade has completed, we recommend that you perform a backup.

Upgrading FLIX OS

In order to install BreakingPoint 3.5.1 on a XGS12-HS chassis the operating system running the chassis controller must be updated to FLIX OS 2015.1.0.66. The update procedure is described in a document named, "FlixOS-2015.1.0.66 Upgrade Guide", which is available on the StrikeCenter BPS OS Updates site.

Note: New PerfectStorm and PerfectStorm ONE systems currently shipped to customers do not require a FLIX OS update. The systems ship with the latest FLIX OS version. Customers who currently use the PerfectStorm system must upgrade the FLIX OS.

Upgrading IxOS 6.90 EA

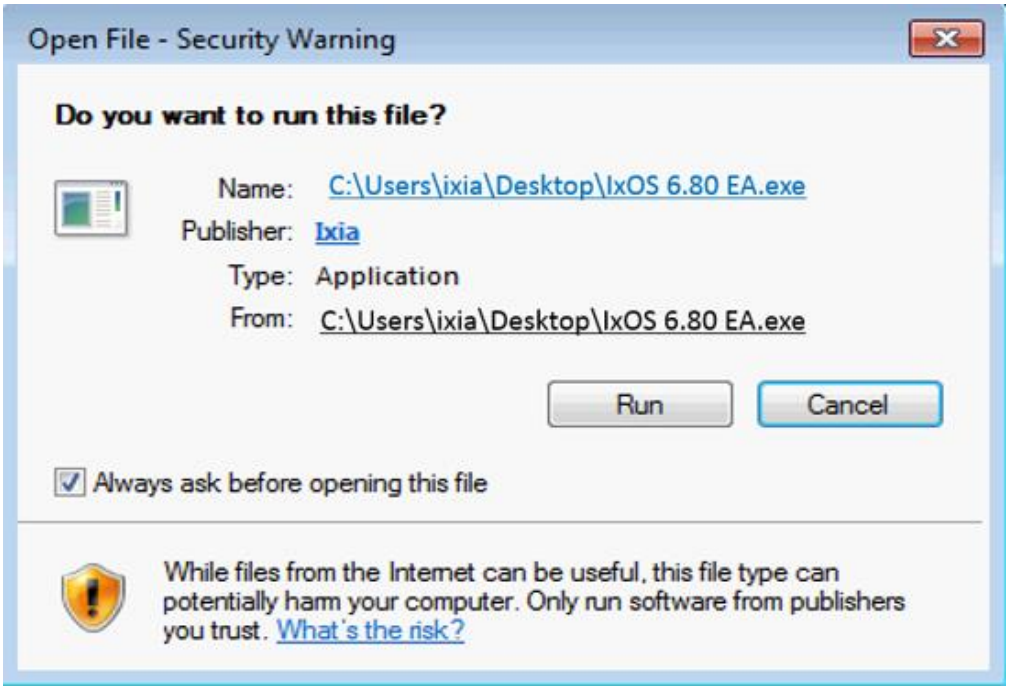
Software and Installation Instructions are located at the following location: http://www.ixiacom.com/support-overview/product-support/downloads-updates/versions/21

Note: The version numbers displayed in the images below may differ from the version numbers that are displayed when you upgrade IxOS 6.90 EA.

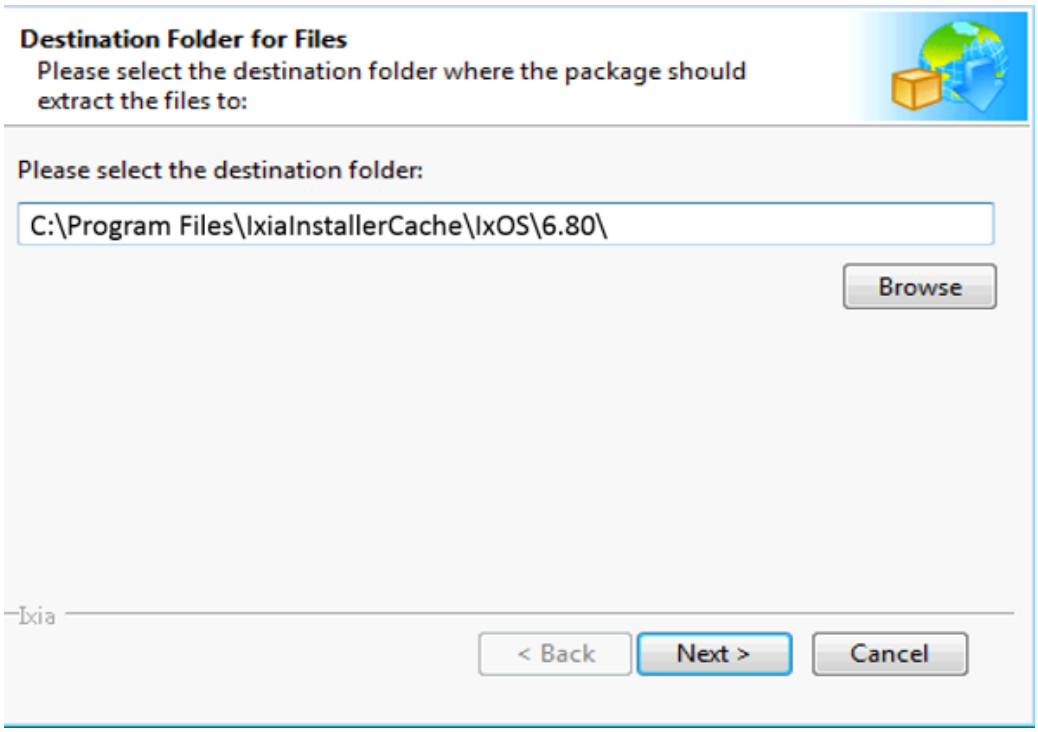
Note: BUG1354074: A Stop Error (Blue Screen) may occur while upgrading IxOS due to a Microsoft Windows issue. A Microsoft hotfix is available to resolve this issue, see Windows Update kb2675806.

Starting From the Windows VM:

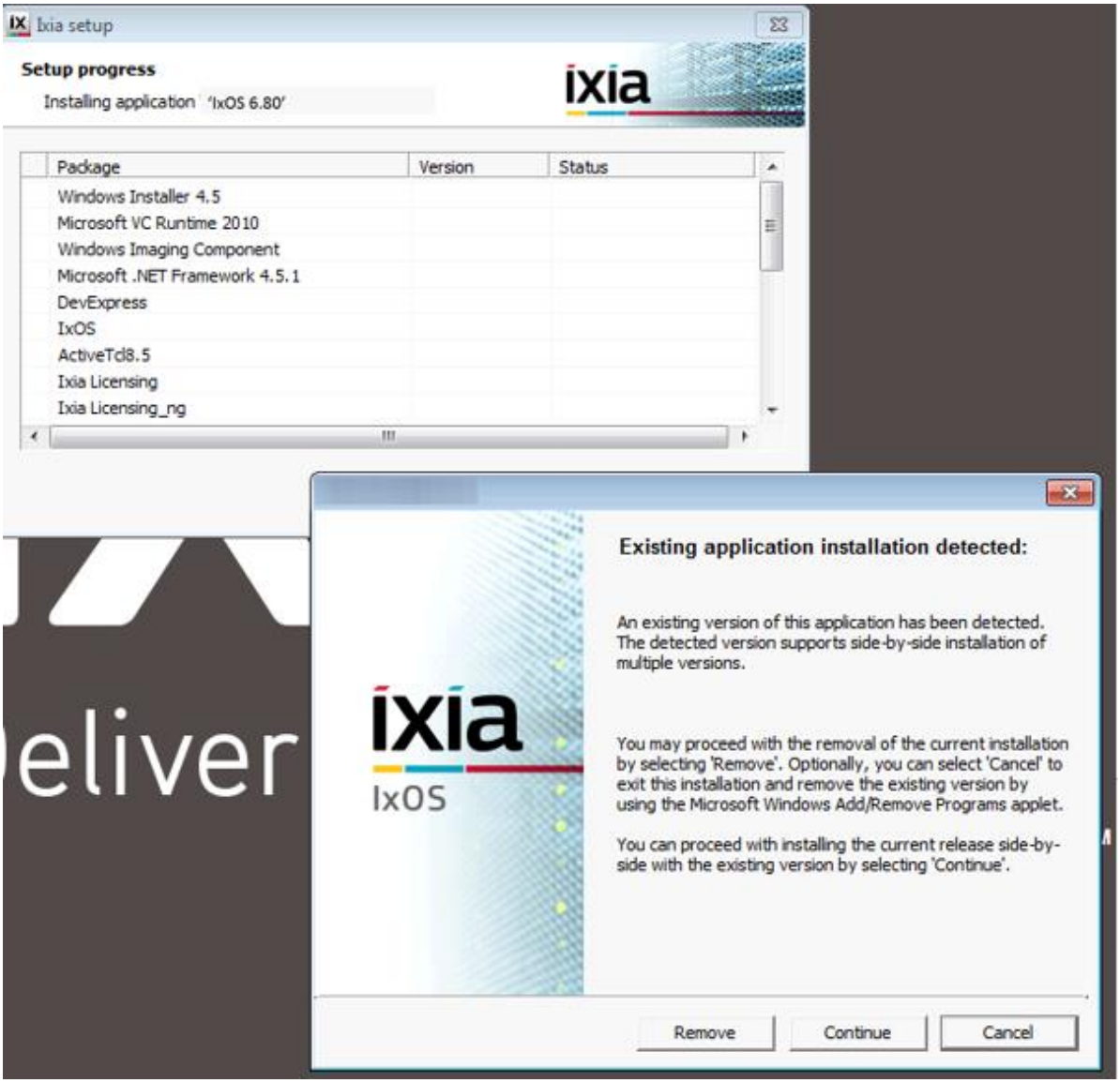
1. Open Remote Desktop and Login to the Ixia Windows VM.
2. Copy the IxOS executable to the Desktop.
    a. You may need to copy the *.exe file onto the Ixia Windows VM.
    b. The file can be directly downloaded on the VM using the link above.
    c. If no direct network access to ixiacom exists, then a shared file system with the Ixia Windows VM is needed to gain access to the VM.
3. Stop IxExplorer and IxServer.
    a. Use a graceful shutdown, File -> Exit
4. Run *.exe.



5. Click the **Run** button.

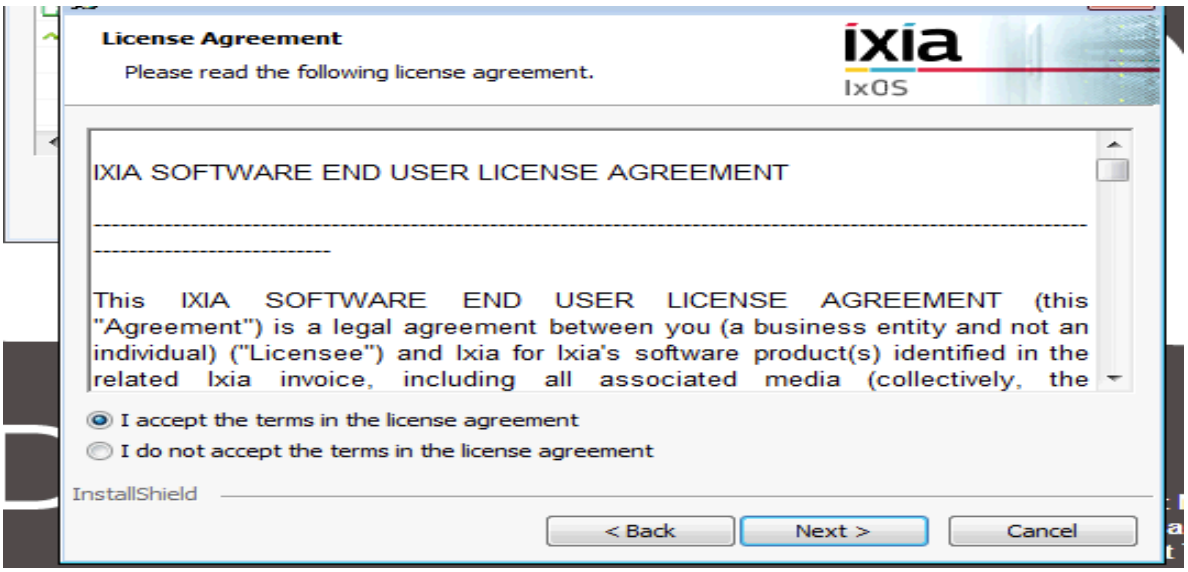


6. Accept the Default Destination Folder for the Installation. Click **Next**.

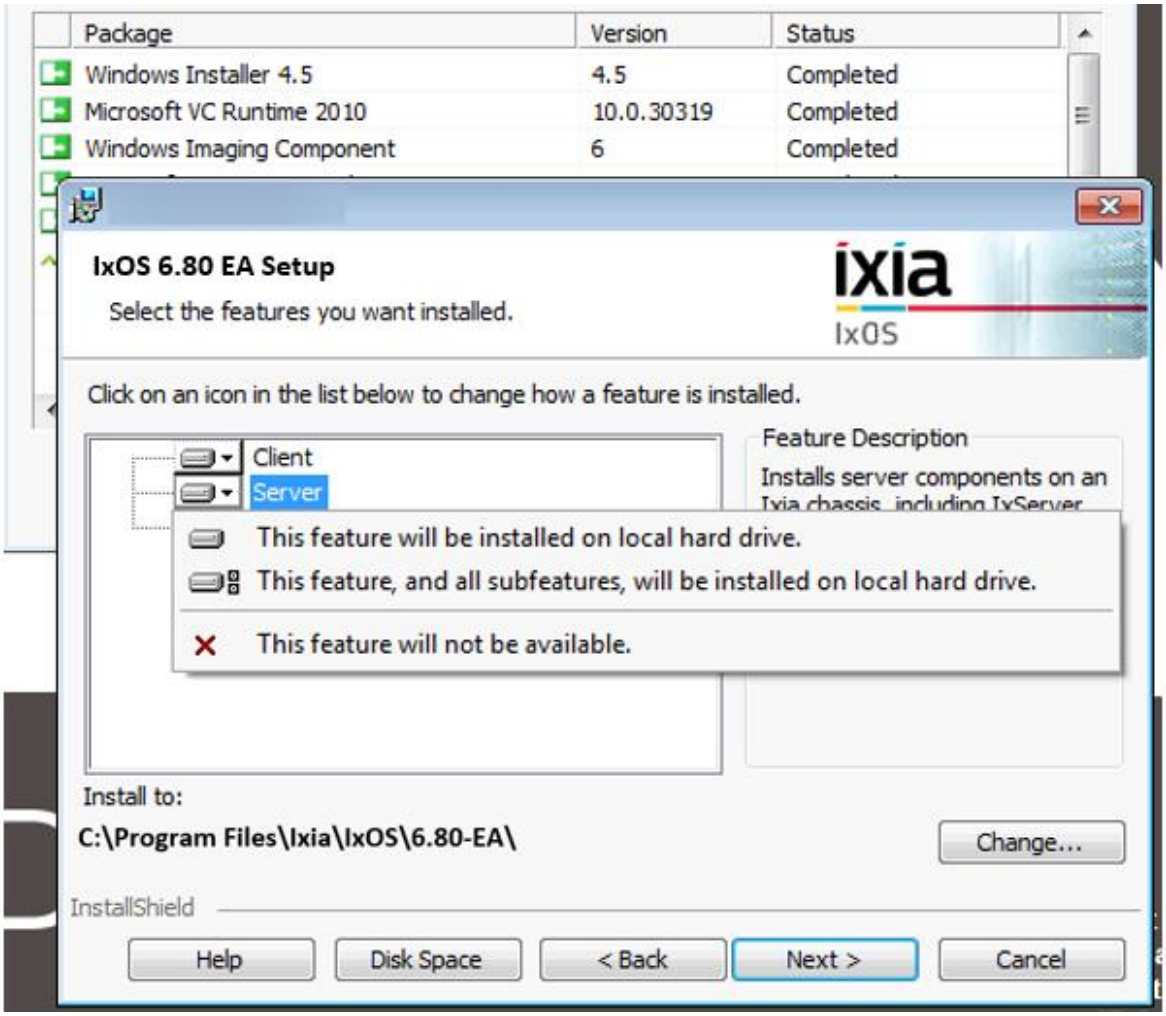


a. Select **Continue** on the "**Existing application Installation detected**:" window.

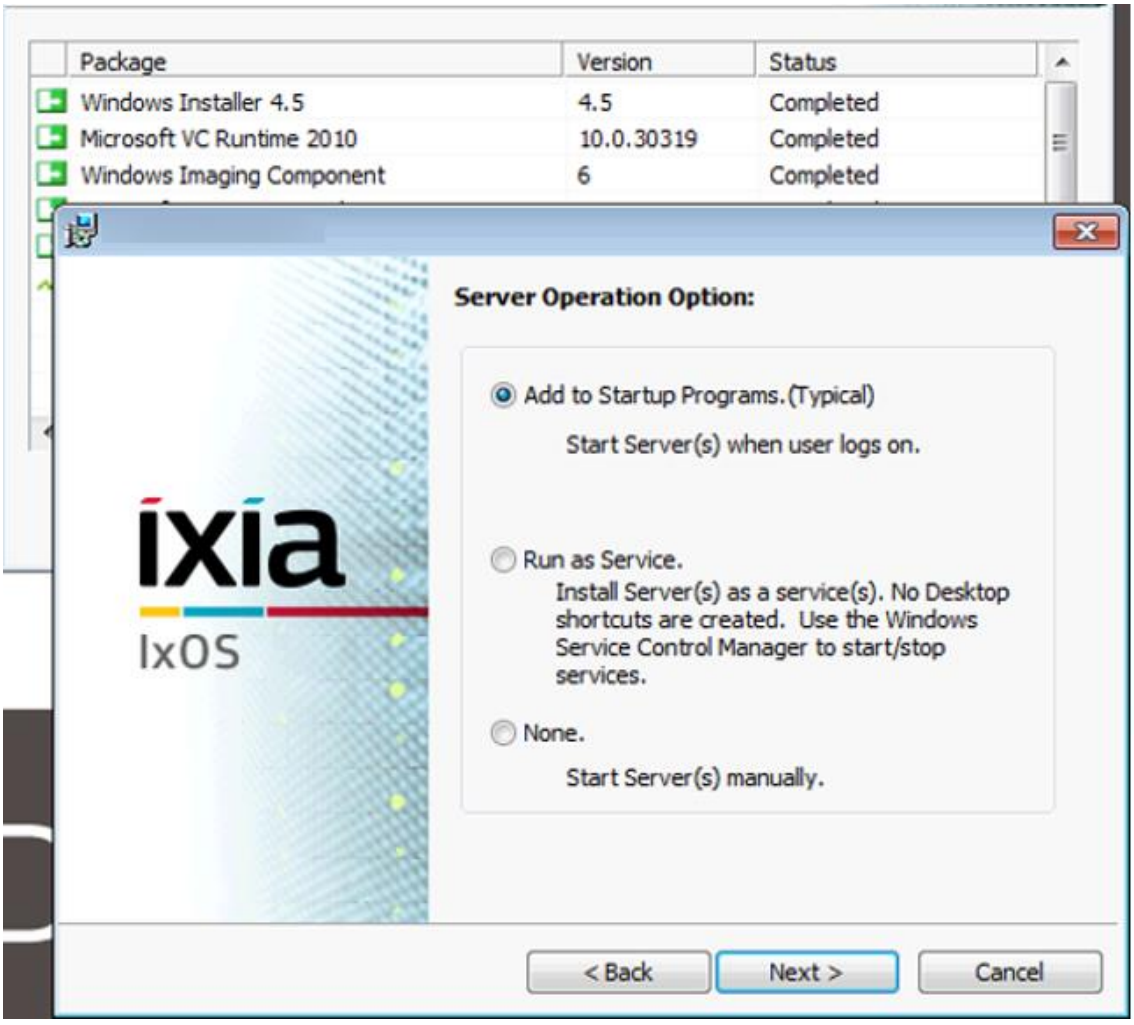
7. Click **Next** on the "**Welcome to the Setup for IxOS 6.80..”** window.



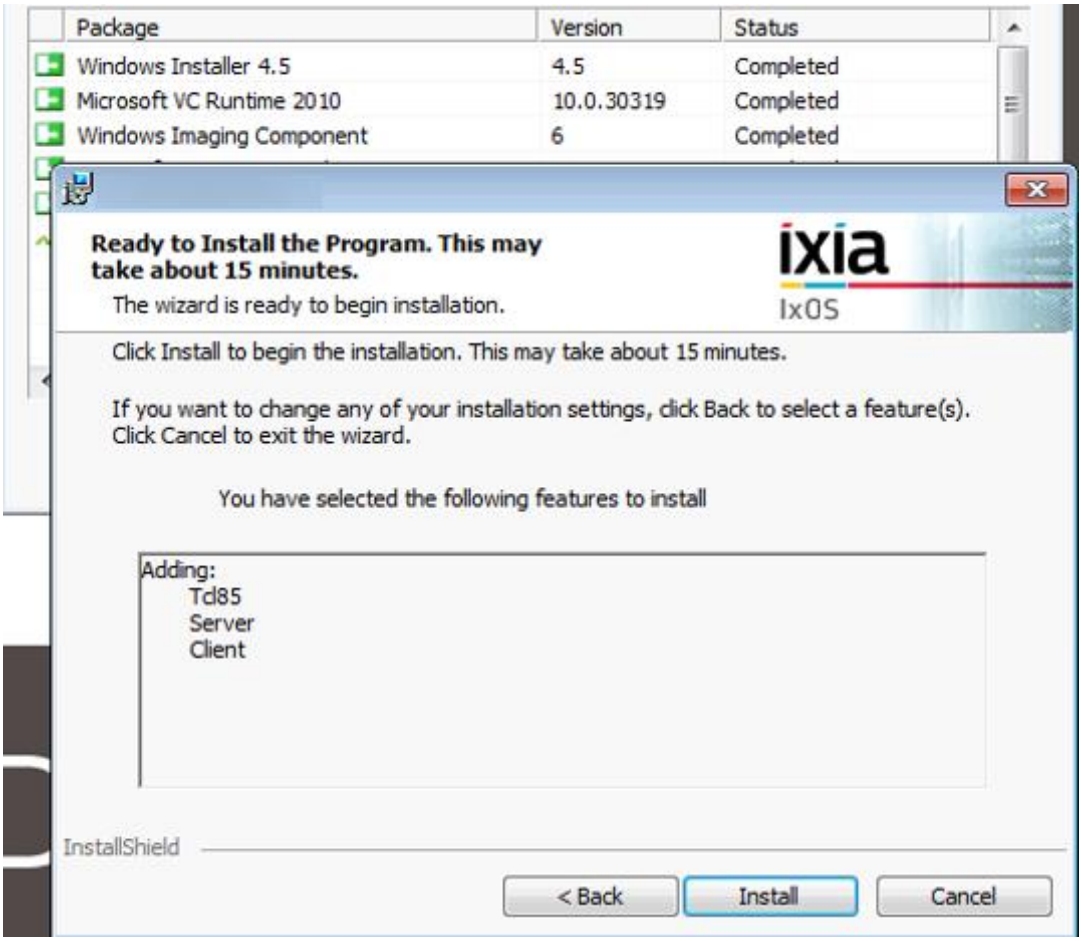
8. Accept the License Agreement, then select **Next**.



9. Set Client and Server to install and "**This feature, and all sub features, will be installed on local hard drive**", then select **Next**.
    a. Note: TCL server install is optional.



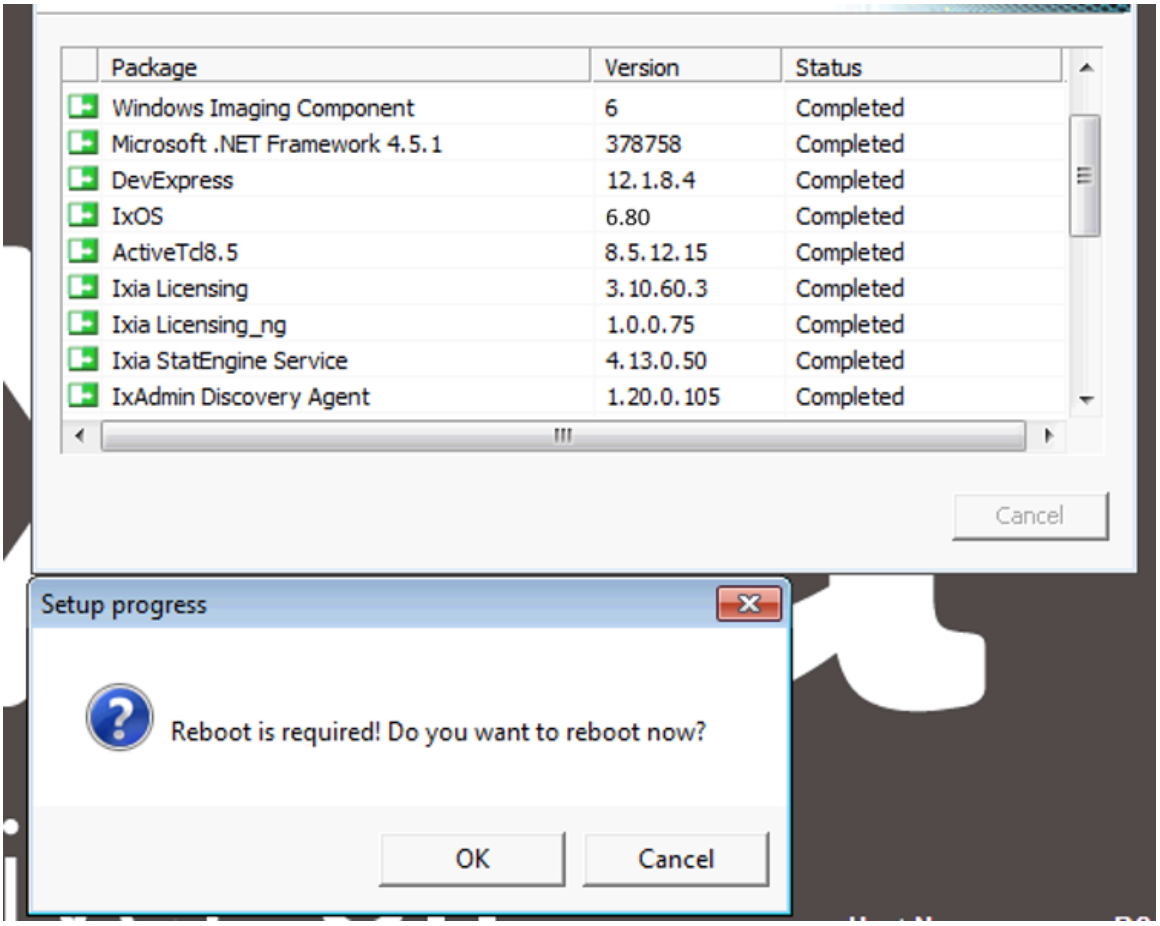
10. Select the following option: "**Add to Startup Programs.(Typical)",** then click **Next**.



11. After some essential components complete installation, the IxOS server will be ready to install, select **Install**.

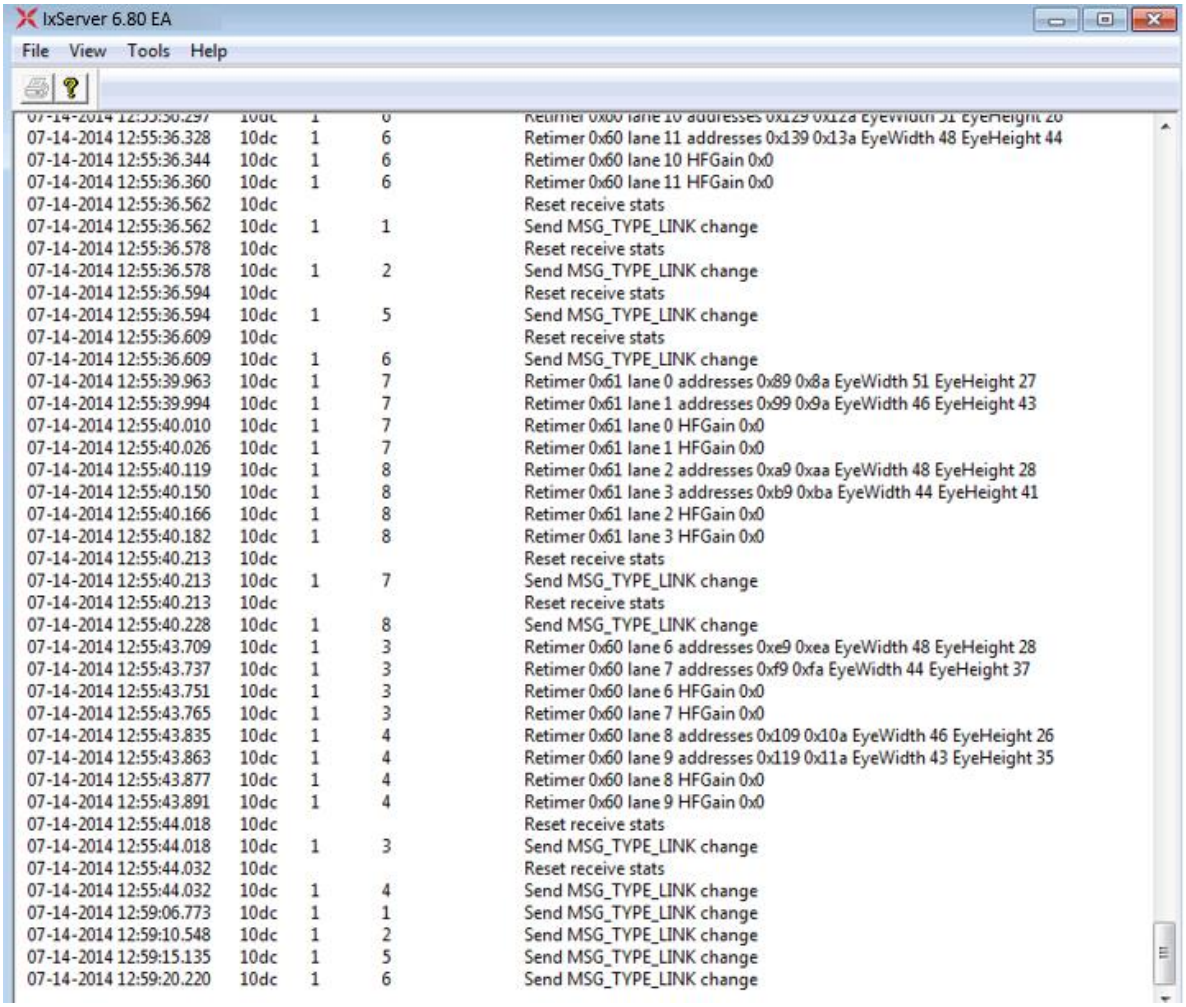
12. After several minutes of installation, new IxOS application links will be copied to the desktop.

13.After the installation has completed, click **Finish**.

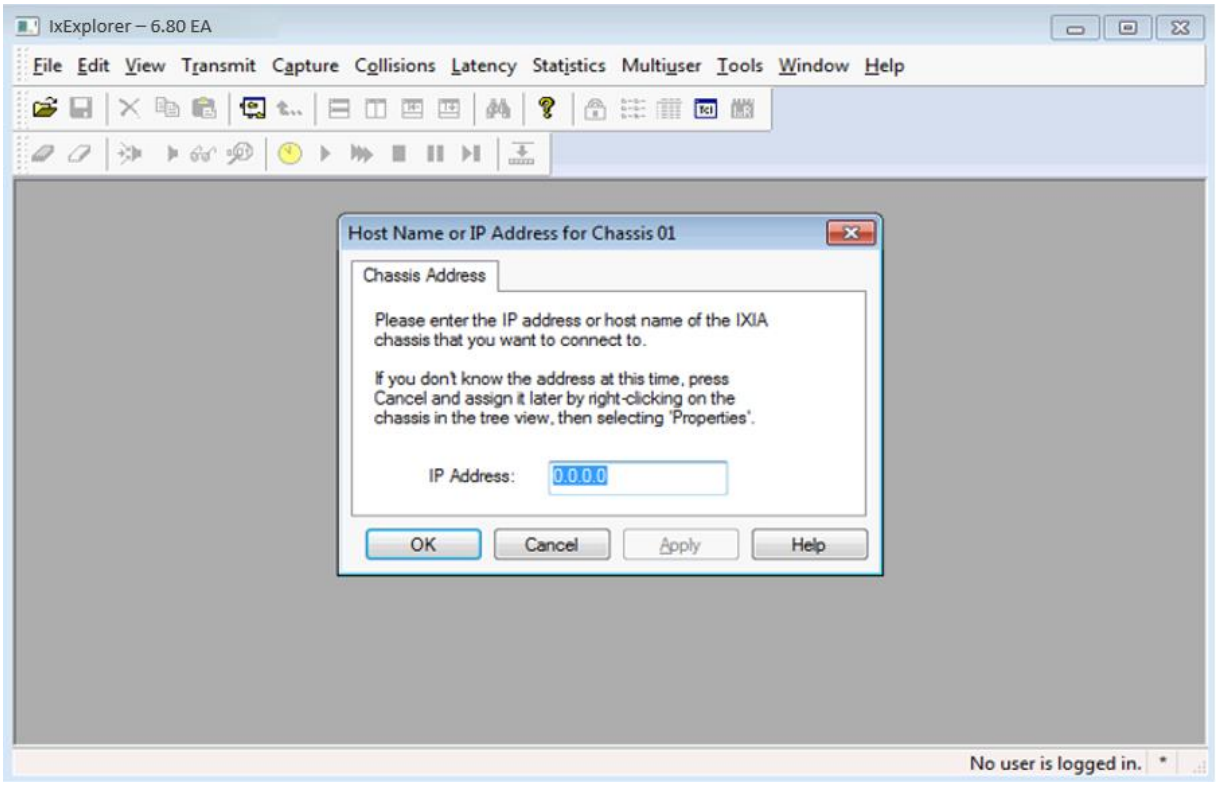


14. The system will ask the user to reboot the Windows VM.
15. After the Windows VM reboots IxServer will start automatically and will continue setting up the system hardware.

    a. Note: Starting IxServer the first time after installation will be slower and may take more than 10 minutes for each slot to be prepared to run with the new IxOS version.

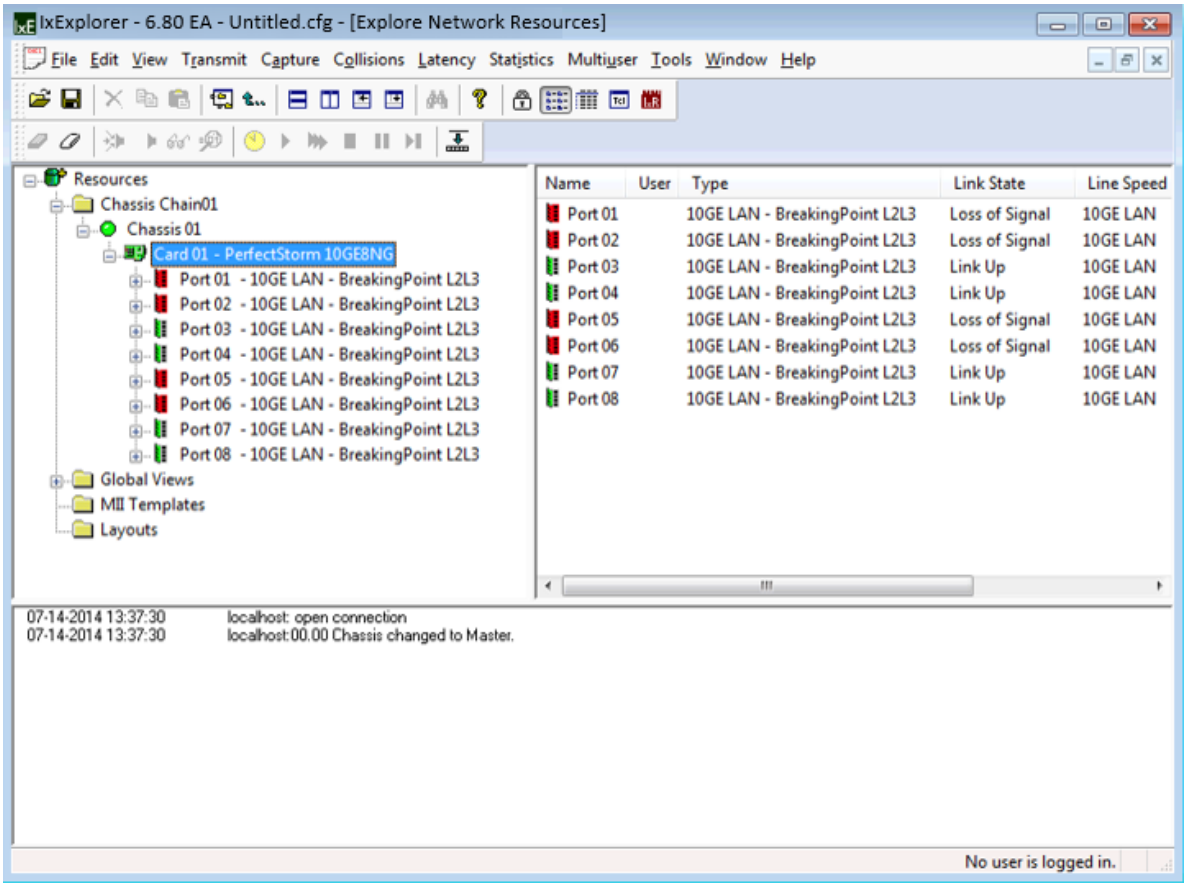


16. The image above shows an example of an IxServer that has completed initialization.



17. Then open IxExplorer and make sure that it is the same version as IxServer.
    a. In the **IP Address** field, type: `localhost`
    b. **Click OK.**

    Saving the configuration for a later time is optional, we selected **No** for this example.



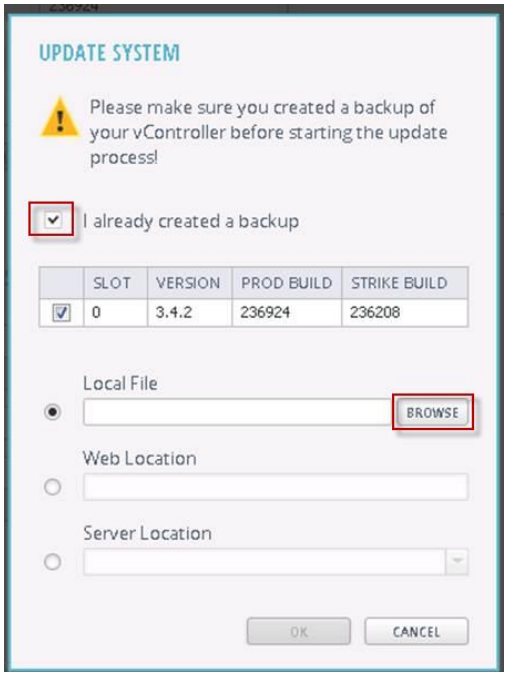
18. IxExplorer will show the status of the blades connected to the chassis along with the mode they are running in.

    a. Seeing a green status indicator for Chassis indicates the blade is communicating with IxServer.
    b. Green Ports indicate Link Up status.
    c. Red Ports indicate Link Down status.

Upgrading BreakingPoint Virtual Edition

Note: You must have BPS-VE controller version 3.4.2 or higher to perform this upgrade.

1. Download the BreakingPoint Virtual Edition VM update file.
2. Log in to the Ixia BreakingPoint VE System.
3. Navigate to **ADMINISTRATION -> SYSTEM SETTINGS -> UPDATES**.
4. Select **UPDATE SYSTEM** and then see the image below.
    a. After you have created a backup of your vController, select the, **I already created a backup,** option.
    b. **Browse** to the location of the BPS VE update file and select **OK** to start the update.



5. The BPS VE update will take 10-15 minutes to complete.
6. To verify that the update has been installed, see the version information in the **Installed Applications** section of the **UPDATES** tab.

Upgrading the BreakingPoint System

To update the Ixia BreakingPoint System.

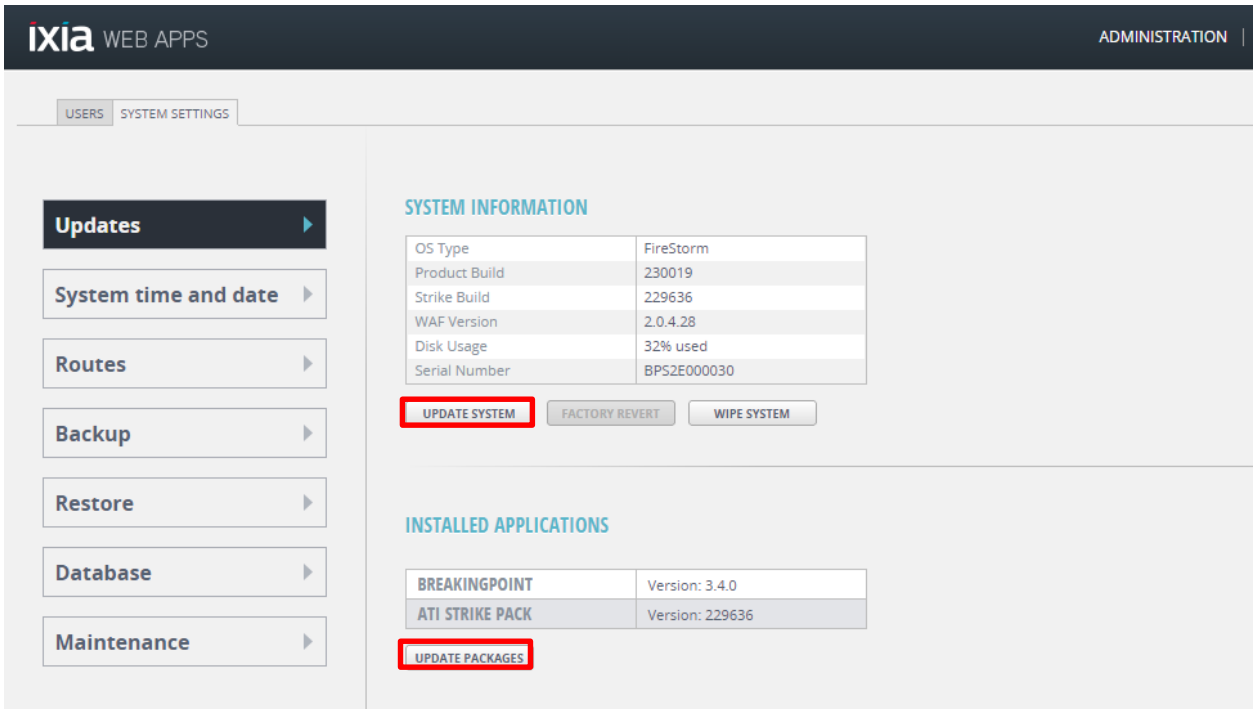
1. Download the required Ixia BreakingPoint image.
2. Log in to the Ixia BreakingPoint System.
3. Navigate to **ADMINISTRATION -> SYSTEM SETTINGS -> UPDATES**.
4. Select **UPDATE SYSTEM** (see **figure 1** below).
5. Browse to the location of the BPS update file and select **OK**.
6. The BPS update will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

Update Packages

The Application and Threat Intelligence (ATI) program provides updates every 2 weeks ensuring delivery of the industry's most up to date application and threat intelligence.

We recommend that customers install the latest ATI update since some BPS issues are resolved by installing ATI updates (see **Update Packages** in **figure 1** below). ATI Update Packages are obtained from the ATI Strike Center at: https://strikecenter.ixiacom.com/bps/strikepacks.

Figure 1: Ixia WEB APPS Start Page



Switching to BreakingPoint Mode

All PerfectStorm Fusion load modules (blades) are capable of operating in IxLoad or BreakingPoint mode. When booting up, all PerfectStorm Fusion load modules default to IxLoad mode.

Note: Load modules retain the mode they were in prior to being rebooted.

On PerfectStorm (XGS12-HS), a red square in the upper right corner of the load module on the Device Status screen indicates that the module is in IxLoad mode. A green square indicates that the module is in BreakingPoint mode. On PerfectStorm ONE, the text "IxLoad Mode" at the bottom left side of the chassis on the Device Status screen indicates that the unit is in IxLoad mode. The text "Settings" indicates that the PerfectStorm ONE unit is in BreakingPoint mode.

To Transition from IxLoad Mode to BreakingPoint Mode:

1. Click a port on the load module to begin the transition process. The **Reboot Slot** window will display.
2. Change the Slot Option setting to **Mode**. Select **BreakingPoint Mode** or **BreakingPoint L2/L3 Mode**.
3. Click **Apply** and wait for the mode change to complete.

Note: The transition from IxLoad mode to BreakingPoint mode takes approximately three minutes for each load module.

Note: To transition multiple load modules to BreakingPoint mode on PerfectStorm, each load module must be allowed to completely transition before the mode change process for the next load module can begin. Transitioning multiple modules simultaneously is prohibited.

Resolved Defects 3.5.1 Release

The following tables list 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 or call them at 1-818 595-2599.

SR #	Description
660997	Resolved the issue where a 40G test run on a PerfectStorm XGS-12 chassis reset a network processor and caused a test to fail.
669493	The Resume Max Reuse parameter now accepts the value "0" in order to disable session resumption.
671911	Fixed the issue where the reported Capture duration was greater than the Test duration.
675615	Fixed the issue where test reports displayed data samples intervals that were different from the configured intervals.
668966	Resolved the issue that produced incorrect Real Time Statistics when the **Follow** button was deselected and the user jumped to a specific time in a test.
671313	Fixed the issue that caused tests to produce incorrect packet sizes due to the configured MSS (Maximum Segment Size) and MTU (Maximum Transmission Unit) parameters.
675616	Fixed the issue where the BPS GUI allowed the user to set the **Polling Interval** to less than 1 second (or less than 100%).
674995	Resolved the issue where IP tunnels were not initiated and frames were not transmitted if a test was run on the same blade where an IPSEC test was currently running.
677342	Fixed the issue where strikes were not allowed or blocked because a virtual router was not using the MAC addresses that were configured in the network neighborhood.
674128	Resolved the issue where exported test results were limited to 20,000 records in a CSV file.

Known Defects

The following section details the known defects of Firmware Release 3.5.1. 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 or call them at 1-818 595 2599.

Defect #	Description
BUG1368838	A single Routing Robot component will not transmit more than 10 Gbps of traffic on 40G ports when the Data Rate is set to Mbps and the Size Distribution Type is set to Mix.
BUG1363304	A single Routing Robot component will not transmit more than 10 Gbps of traffic on 40G ports when the Data Rate is set to Frames per Second. Ixia recommends using Mbps as the Data Rate Unit in this scenario – note that the Size Distribution Type should not be set to Mix as described in **BUG1368838**.
BUG1368525	Blank spaces in the vBlade name in a KVM deployment will cause issues when deploying the vBlade. **Workaround:** To work around this issue, rename vBlades and remove blank spaces in the name.
BUG1367814	In a MultiBox Test scenario, a single Routing Robot component cannot support more than 10Gbps of Bandwidth.
BUG1367795	Routing Robot and Bit Blaster tests may not achieve line rate in 40G and 100G modes for some frame sizes (lower than 66 bytes and higher than 9000 bytes).
BUG1366685	Some strikes in a Security test may not display the strike status (Allowed or Blocked) on the Real Time Statistics Attack tab. **Workaround:** To work around this issue, reference the test report to view the status of all Security test strikes.
BUG1361307	When a new Network Neighborhood is created based on the canned Network Neighborhood (by using Save As), the new Network Neighborhood incorrectly assigns MAC addresses to IP Ranges. For example, the 1st IP range will be given the MAC addresses that correspond to the 2nd IP range, and the 2nd IP range will be given the MAC addresses that correspond to the 3rd IP range, etc.

Multiple Platforms

Defect #	Description
BUG1355011	At this time, Tcl does not provide the Data Rate parameter for Session Sender that is available in the GUI.
BUG1352786	Internet Explorer is not a supported browser in BPS 3.5 and above. Attempts to log in to BPS 3.5 using IE will not be successful. Please refer to the Browser Compatibility section of the Release Notes for information on supported HTML browsers.
BUG1352253	After multiple searches, the Add/Remove Super Flows window can show no results when there should be results displayed. **Workaround:** Please close and re-open the window.
BUG1348300	Using the Restart Test button will cause a report to use the title and iteration count from the previous test.
BUG1347074	Based upon the BPS DHCP server and client implementation, if the DHCP server stops responding to the renew/rebind requests, the client will not move into a Discovery state.
BUG1346954	The last row in the report for a RFC2544 test may show a very large erroneous value that can be ignored. This issue was observed in the Frame Rate 64 / Frame Bytes section of the report.
BUG1345457	Strikes for a security NP test can be blocked in a scenario where interfaces are waiting to receive IP addresses from the DHCP server but strikes have started executing regardless of the interface's IP status.
BUG1344122	Due to a large number of similar entries for certain statistics, test reports may not show statistic values (ex. Attempted Frame Rate) in the exact sequence they occurred in.
BUG1336202	If the packet size in a Session Sender component test is configured to be greater than the MTU size, a FIN-ACK is sent before all packets have arrived. Normally, a FIN-ACK would only be sent after all packets have arrived. This issue can result in a large number of concurrent flows at the start of a test and a closed rate that is much higher than the attempt rate. **Workaround:** Configure the packet size to be less than the payload size.
BUG1352309	Statistics reported for concurrent Super Flows during a one-arm test are not accurate at this time.

BreakingPoint Virtual Edition

Defect #	Description
BUG1348533	The DHCP client only supports a single netmask for DHCP Discover requests from a DHCP server. Failed DHCP Discover requests will occur if the number of IP addresses requested exceeds the number that can be supported by a single netmask.
BUG1349287	After deploying a vBlade or just after rebooting a vBlade, a period of approximately 3 minutes is required for the vBlade to reach a ready state for test execution.
BUG1355164	When running the RFC2544 test for a long duration (>5 hours), the reported values for frame size and throughput may be incorrect (although the test produces the correct Pass/Fail results).
BUG1353929	In a scenario where a VLAN is enabled in the TX path of your test configuration, the Ethernet summary statistics may indicate more RX bytes/frames than TX bytes/frames when the values should be equal. This occurs because the VM driver strips the VLAN header from the RX packets and then adds 4 additional bytes to the packet.
BUG1353550	Long duration tests (> 7 hours) may report RX and TX statistic values that are not equal when the values should be equal.
BUG1353358	Distributed vSwitches are not supported on BPS-VE.
BUG1353074	The Security, Session Sender, and Appsim test components are not using the client and server start MAC addresses that have been configured for a test. The addresses that are used are slightly different than the defined addresses.
BUG1352827	In BPS-VE, consistent performance numbers may not be achievable in repeated runs of the RFC2544 test.
BUG1352601	Due to resource constraints, only two Routing Robot Test Components are supported simultaneously. Running more than two Routing Robots will cause packets to drop.
BUG1352019	BPS-VE discards IPv6 packets that contain VLAN tags because the bytes after the VLAN tag are random and cannot be recognized as valid IP packets.
BUG1351370	Strikes may be blocked for tests that contain multiple components due to resource constraints.
BUG1351141	To avoid a large number of blocked strikes (due to packets being sent from the wrong security component), run only one security component per vBlade and configure all required strike lists within the security component.
BUG1350776	In some scenarios, due to low resources, a high packet rate may fill the system buffers and cause packets to drop. **Workaround:** Increase the ring buffer size.
BUG1349941	SCTP support is not available on BPS-VE.

BUG1349939	The VM deployment notifications panel indicates "Application encountered an internal server error" and similar errors when using the Safari HTML browser.
BUG1349899	The BPS-VE Routing Robot does not support bi-directional traffic.
BUG1348664	The DHCP client will continue to send DHCP Discover messages even after a test has completed.
BUG1348653	The VMware vSwitch will reject an IPv6 packet if any portion of the IPv6 header is corrupted, however, this behavior does not occur when the virt-i0 driver is used.
BUG1347932	If there is a change in the mapping of the vSwitch of a BPS-VE vBlade, a reboot of the BPS-VE vController is required to reflect that change.
BUG1347792	The number of test results can exceed the number of items that can be displayed on the page of a report.
BUG1347726	The following Advanced Options of the Routing Robot Test Component are not supported on BPS-VE: IPv4, IPv6 and UPD. The Bi-directional option for UDP is not supported on BPS-VE.
BUG1347550	Based upon resource utilization, port instabilities may be observed while running a multicast test with Security – NP.
BUG1347284	Test scenarios that utilize a vmxnet3 driver, a double VLAN and a 64 byte frame size, has been shown to drop packets. **Workaround:** To work around this issue, configure the frame size to 68 bytes or higher.
BUG1346409	Due to limited resources, received packets do not conform to the join-leave-delay pattern that has been configured for a test. For example, during a Multi-cast Lab test consisting of 3 sources and 2 subscribers, it was observed that the received packet rate remained at approx. 1 Gbps instead of the expected join-leave-delay pattern.
BUG1346167	Due to insufficient Ramp Down time, DHCP ACK packets sent from the server side at the end of a test are not received at the client side. This scenario resulted in the DHCP ACK Packets Sent/Received statistics being unequal when they should be equal. **Workaround:** Increase the Ramp Down time.
BUG1345061	When setting up the RFC2544 lab, the smallest RFC 2544 ICMP frame size displayed in the GUI (and generated) is 64 bytes, when the minimum legal ICMP frame size is 66. **Workaround:** Configure the smallest frame size at 66 bytes to run the test without error.
BUG1344961	In a scenario where there is high rate of packets and low resources, DHCP packets may be dropped due to low buffer memory. The corresponding interface may also throw an exception indicating that it is unable to send traffic.
BUG1344348	In a scenario where there is high rate of packets and low resources, DHCP packets may be dropped due to low buffer memory. Increasing the buffer allocation (rx queue length) on the VE platform can help to reduce packet drop, but changing this setting may adversely affect other tests.

BUG1344136	After deleting and re-adding a virtual blade (NP) several times, the name displayed in the vSphere client may be incorrect.
BUG1343788	L2/L3 features (such as Routing Robot, Bit Blaster, RFC2544 Test, etc.) are not supported on DHCP interfaces.
BUG1342115	If promiscuous mode is enabled in the vSwitch, a large number of unwanted packets will arrive at the vBlade (NP) which will lead to exception errors.
BUG1341883	Network Configuration interfaces are not available when attempting to deploy a BreakingPoint VE vBlade on a KVM on CentOS. **Workaround:** The brctl command must be made available on the hypervisor in order for the available interfaces to be listed during vBlade deployment.
BUG1339594	On a KVM deployment, Reports do not display values for some Stack Scrambler statistics
BUG1338895	The initial attempt to get an IP address during vBlade deployment fails on a KVM. **Workaround:** Retry deployment. An IP address can be acquired upon retry.
BUG1346292	On a KVM deployment, tests that are configured with interfaces that have disabled MAC addresses or promiscuous mode disabled, can pass traffic when they should not be able to pass traffic.
BUG1343686	On a KVM deployment, after deleting a vBlade from the Administration menu in the BPS User Interface (UI), the option to "Remove virtual blades from selected slots" should not be available.
BUG1335470	The Security test component does not support IPv6 addresses starting with "0" in the first IP octet.
BUG1334581	An IPv6 Virtual Router is supported only in VMWare configurations that have the vSwitch configured with *promiscuous mode = accept.*
BUG1334131	A manual reboot of the virtual machines associated with the vBlades may be required immediately after deployment if the vChassis fails to display the newly deployed blades.
BUG1332358	While using certain pre-defined application superflows (e.g., BreakingPoint Bandwidth Netflix) the user may notice "Router Discard" messages (see the Router Summary section of the BreakingPoint test report). These messages are due to a limitation of fragmented packet handling on the raw socket on the VMXNET3 driver.
BUG1332330	In some scenarios, the Administration tab will "gray out" when the user switches between the view of a currently running test and the Administration tab. **Workaround**: The user can access the Administration tab from the main menu or re-launch the BreakingPoint user interface.
BUG1333017	"ICMP Host Unreachable" errors are reported for a test that contains a security test component along with other test components. **Workaround**: Configure all test components to share the same virtual blade.

BUG1332493	No traffic is generated when the "Duplicate MAC Address" setting is disabled for interfaces configured to use a VLAN. **Workaround**: Enable the "Duplicate MAC Address" setting for interfaces that use a VLAN.
BUG1331590	Given the same test configuration, some tests may result in longer start and stop times while using the BreakingPoint VE platform compared to the BreakingPoint hardware platforms.
BUG1328837	Errors that can be disregarded may be reported while loading a test configuration with features and test components that are not supported on the BreakingPoint VE platform.
BUG1325399	In situations where the vSwitch detects a "link down" event triggered by an external device, BreakingPoint reports, `"Packet receive for Unconfirmed Address". This condition is due to the vSwitch being configured to send notifications when links goes down."` **Workaround**: These errors can be eliminated by configuring the vSwitch connecting the BreakingPoint vPorts to suppress the notification for link down. To change the setting, using vSphere set the Notify Switches property to No (vSwitch Properties->NIC Teaming -> Notify Switches To "No").
BUG1321176	Setting the vSwitch "Promiscuous Mode" option to "Accept" can result in situations where the reported TX bandwidth is much lower than RX bandwidth, while the test reports large number of TCP resets sent and received. This condition is triggered by the IP packets being broadcasted by the vSwitch to all interfaces. **Workaround**: This condition can be avoided by configuring the vSwitch with the "Promiscuous Mode" set to "Reject" and by configuring the BreakingPoint Network Neighborhood to use the "Duplicate MAC Address" option.
BUG1318949	While using the Stack Scrambler component configured to generate IP packets with a corrupted *IPv4 header length* field, the VM kernel drops IP packets for situations where the *IP header length* value is higher than the actual header data present in the buffer. For this situation, BreakingPoint cannot increment the *routerBadIPHeaderLength* statistic. In case of IPv4 header length corruption, there are 3 ways the header can be corrupted, and this condition is seen only in case 3 shown below: 1. IP header length is less than the RFC specified minimum IP header value 2. IP header length is more than the RFC specified maximum IP header value 3. IP header length is more than the actual header data present in the buffer.
BUG1135467	In reference to the RTP "Stream" actions in Application Manager process, the transaction flags can be described as:

	• Start - The transaction flag is applied to the first RTP packet in the stream. • End - The transaction flag is applied to the last RTP packet in the stream. • StartEnd - The Start transaction flag is assigned to the first RTP packet in the stream while the End transaction flag is assigned to the last RTP packet in the stream. When continuous mode is enabled on any RTP stream action, transactions are affected such that any End transaction flag will not be counted unless the stream is interrupted by way of the shared Stop RTP action.
BUG1345198	Due to the vSwitch property, "Notify Switches", some extra L2/L3 packets are received by the vBlade. These additional packets will also be counted in the test statistics. To prevent the extra packets from being displayed in the statistics, disable the vSwitch Notify property.
BUG1344475	Due to the vSwitch configuration, additional packets may be received that were not defined within the test. The additional packets are counted and result in unequal transmit and receive packet statistics in the report.

PerfectStorm and PerfectStorm ONE Platforms

This section includes the list of known issues specific to PerfectStorm ONE Fusion appliances and XGS12-HS 12-slot chassis for PerfectStorm Load Modules.

Defect #	Description
BUG135716	The Resiliency Score Lab is not supported for 100G PerfectStorm in the Breaking Point 3.5.x release.
BUG1354074:	A Stop Error (Blue Screen) may occur while upgrading IxOS due to a Microsoft Windows issue. A Microsoft hotfix is available to resolve this issue, see Windows Update kb2675806.
BUG1355396	When generating L2/L3 traffic consisting of identical frames, there is a limitation in respect to the maximum achieved throughput for small frames. For frame sizes between 64B and 79B, the maximum achieved throughput will not exceed 155.42 Gbps. When traffic consists of a mix of frame sizes, the above limitation does not apply.
BUG1353413	On PerfectStorm, the SSL handshake that occurs during a test will fail if the server common name does not match the server certificate common name. The same scenario does not fail on FireStorm.
BUG1344040	For DHCPv6-PD Loopback scenarios, the IPv6 Router IP address must be specified as a Gateway IP Address in the IPv6 HOSTS element associated with the DHCPv6-PD Server.
BUG1346723	100G bi-directional testing is not supported on PerfectStorm.

	Workaround: To work around this limitation, configure individual components to achieve the desired bandwidth.
BUG1309762	When PerfectStorm is in L2/L3 mode, a single Network Processor is available to generate application traffic. Therefore, Max performance is expected to be lower for L4/L7 tests but L2/L3 tests will perform as usual.
BUG1350198	On PerfectStorm 100GE, when multiple components are configured for a test, resources for the egress traffic generators are not always optimally assigned. If the packet rates achieved during the test are lower than expected, flipping the component tags may yield better results.
BUG1332661	After changing the Internal Network from 10.0.x.x using IxExplorer, the user must restart the system using the BPS Web Interface Administration menu option available at: Administration -> System Settings -> Maintenance.