Is Your Cloud Infrastructure Resilient Against Cyber Attack and High-Stress Application Traffic?

The Promise of Cloud Computing

Cloud computing enables easy access to shared, elastically allocated computing resources, while freeing organizations from the capital outlays associated with owning their own network infrastructures. Cloud computing definitions and architectures may vary, but three common elements pose significant challenges to the network- and security-managers tasked with keeping cloud networks performing reliably in the face of today’s chaotic conditions:

• Massive shared network and application infrastructures
• A highly variable, and often unpredictable, number of users
• Dynamic resource allocation and a virtualized environment

These conditions apply whether referring to Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS), Infrastructure-as-a-Service (IaaS), or any other common use of “cloud.”

The Perils of the Cloud

The dream of cloud computing sounds great, and cloud services are expanding at an incredible rate across the business landscape. But how do you know your cloud infrastructure will be resilient against increasingly dangerous cyber attacks and increasingly high-volume user and application load? If you rely on cloud computing for vital business operations, you must ensure that these services will perform optimally and securely while handling your unique business application traffic, peak user load, and security attacks. For the health of your business, you must harden resiliency by finding the optimal balance of performance, security, and stability of the cloud services that are crucial to your business operations.

The Cloud Resiliency Imperative: Rethink Legacy Testing Approaches

Understanding how to find that balance requires precise insight into the performance of every element of your infrastructure under your own mix of conditions. In an attempt to gather this insight, cloud vendors have relied on legacy tools — many originally designed for traditional LAN-based environments — across hundreds of servers in cloud environments. The net result is an amalgamation of tools and workarounds that is costly, brittle, and does not scale to address the task at hand. At the same time, organizations are using “cloud load testing” solutions with the promise of stress-testing the cloud. These tools are not sending real-world application traffic and have no ability to assess the impact of security attacks. Without the ability to integrate the mix of conditions present on the cloud, you are left guessing about the true resiliency of your cloud environment. But guessing is not enough – you have to know.

The Advantages of Cyber Tomography and Ixia BreakingPoint

Ixia BreakingPoint enables you to use your own customized mix of user traffic, applications, and live security strikes to pinpoint hidden stress fractures and weaknesses within even the largest cloud environments. With it, you can ensure that your cloud network is operating at the highest performance levels and with optimal security before, during, and after any change — infrastructure upgrades, configuration updates, traffic profile changes, or new attacks discovered. Plus, its infinite scalability means that you can easily assess capacity demands for today and in the future, ensure that defense-in-depth measures are protecting the sensitive data in the cloud, confirm that a distributed denial of service (DoS) attack will never take down services, and pinpoint the weaknesses in cloud infrastructures of any scale.

Ixia BreakingPoint leverages the science of Cyber Tomography to produce the conditions you find in your own cloud network. BreakingPoint enables you to measure — with precision — how networks and the devices that support them will perform when faced with increasing user traffic, dynamic applications, and sophisticated attacks. BreakingPoint’s patented design unlocks the power of network processor technology to produce always-current, application-rich traffic on a scale never before seen in a product of its size. Under these extreme but very real conditions, you can quickly and cost-effectively harden security, network, and application infrastructures while optimizing delivery of services for customers.
BreakingPoint’s capabilities have been honed in the performance labs of Global 2000 companies, government agencies, and the defense industrial base. The largest enterprises with the most at stake rely on BreakingPoint to ensure the ongoing resiliency of all elements of their networks. Our customers includes major network equipment manufacturers (NEMs) that produce the building blocks for the cloud, service providers who operate the most massive networks in the world, and major vendors of cloud services. At Ixia, we understand complex networks and the complex interactions within them. These are a few of the many advantages provided by BreakingPoint:

- **Performance and Scalability** – BreakingPoint scales to assaults your cloud infrastructure with 4Gbps to 960Gbps of stateful application traffic and up to 720 million concurrent TCP sessions, replicating the load and behavior of millions of users.
- **Dynamic, Real-World Application Traffic** – BreakingPoint provides more than 260 application protocols—complete with thorough protocol fuzzing and fault injection, allowing you to produce a custom mix of traffic and measure its impact.
- **Security** – A library of 35,000+ current, comprehensive, and global security attacks ensures that your network is not only secure, but secure under the most realistic cyber attacks and extreme load.
- **Easy to Use and Easy to Purchase** – BreakingPoint’s intuitive interface, extensive automation, and all-inclusive product-and-service package provides a solution that is not only easy to use by staff at all skill levels, but easy to purchase and maintain.
- **Comprehensive** – BreakingPoint is the only solution that provides comprehensive and integrated capabilities to measure the resiliency of network, application, and security devices and systems.
- **Customizable** – The BreakingPoint Application and Threat Intelligence (ATI) subscription service supplies you with an ever-growing library of application protocols and security attacks, along with custom toolkits for simulating proprietary applications and attacks.
- **Futureproof** – Our patented network processor architecture drives unprecedented performance and agility, allowing our dedicated team of network and security researchers to update your BreakingPoint solutions consistently with the most up-to-date security attacks and application protocols, every 2 weeks.

### Ixia’s BreakingPoint Hardware Platform Options

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<tr>
<th>Hardware</th>
<th>Image</th>
<th>Description</th>
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<tr>
<td><strong>PerfectStorm</strong></td>
<td><img src="image" alt="PerfectStorm" /></td>
<td>4Gbps to 80Gbps of application throughput per appliance with 8-port 1GE/10GE SFP+ interfaces. Throughput and hardware variants are software-license upgradable. Fan-out mode provides 80Gbps of application throughput per appliance with interfaces and support for 8-port 10GE SFP+.</td>
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<tr>
<td><strong>PerfectStorm</strong></td>
<td><img src="image" alt="PerfectStorm" /></td>
<td>The industry’s highest port density test system for Ethernet, provides the power and performance necessary for massive-scale layer 4-7 testing. Generates up to 80Gbps of application throughput per blade and 960Gbps per XGS12 chassis, for 10GE and 40GE wired and wireless networks.</td>
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<td><strong>FireStorm</strong></td>
<td><img src="image" alt="FireStorm" /></td>
<td>Delivers up to 40Gbps of blended wired and wireless application traffic per blade and 120Gbps per 4u rack-mountable chassis. Chassis supports up to three FireStorm load modules with 4 universal 1GE/10GE SFP+ ports.</td>
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