Radware's Inflight Proactive Monitoring Solution

Inflight is an out-of-path, network-based pervasive monitoring appliance that captures all user transactions from 'in-flight' network traffic and delivers real-time events for business applications. Inflight enables organizations to leverage these valuable insights to identify business events or security threats embedded in web transactions and respond instantaneously.

Inflight extracts critical business events with detailed user transactions, performed over the web, showing user actions such as money transfers, login events made, or attempted items purchased or viewed. In addition, Inflight can further enrich the information to enable full compliance as well as correlate inter-session events to create valuable business information outputs such as security threats or site performance drops alarms. This vital information is delivered in to the relevant processing unit, such as event analytics applications or to other network appliances – for networking based proactive actions.

Key Business Benefits

- **Add new security layer to online presence**
  Identify security breach including fraud, content theft or any other threat by analyzing traffic content and patterns

- **Enabling real time marketing**
  Extract actionable insights and marketing intelligence – for real time marketing campaigns, otherwise not available through the web application

- **Maintain high QoE**
  Monitor site performance and provide QoE statistics detailed down to the user level– by monitoring actual user traffic, and if needed, initiate a corrective action in real time

- **Simplify and centralize logging tasks**
  required for regulatory compliance, while enriching the logs produced
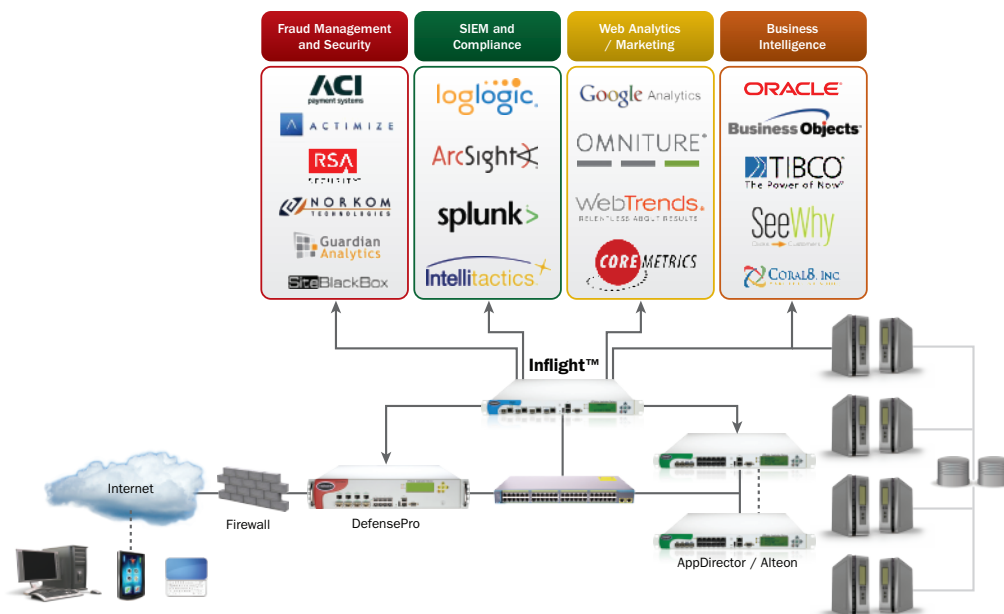
Figure 1 – Inflight monitoring solution architecture

Unique Architecture Enabling Agile Monitoring Solution with Fast TTM

- Independent, out-of-path monitoring solution

- Separating the (evolving) monitoring function from the development of the Web application

- Requiring no integration with production application

- Requiring shorter staging and testing cycles and no site downtime for any upgrade or change

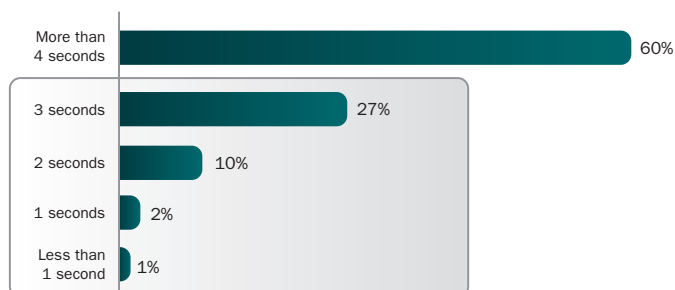## Real Time, Real Life Site Performance Monitoring

The Challenge

A crucial parameter affecting customer satisfaction in the online business environment is site performance – an important factor on the perceived customer's QoE. Identifying site performance drops in real time, is crucial for fast and effective problem resolution, before end user's QoE drops and for maintaining business reputation.

The Solution

Inflight provides what's really needed to maintain end user QoE – real time and real life performance monitoring at the user level. Unlike existing alternatives, the Inflight solution is automated, relies on real-time and user experience and traffic (vs. manually and synthetically defined traffic patterns) enabling detection of network bottlenecks and error resolution, per user, as the user experiences it. Addressing site performance drops in real time at the user level enables personal reaction, ensuring user satisfaction even in case of momentary drop in QoE.

Typically, how long are you willing to wait for a single web page to load before leaving the website?

More than 4 seconds	60%
3 seconds	27%
2 seconds	10%
1 seconds	2%
Less than 1 second	1%

Base: 1,048 US online consumers
Source: A commissioned study conducted by Forrester Consulting on behalf of Akamai Technologies, July 2009

According to a Forrester Consulting 40% of online users will abandon site if page load time will be above 3 seconds.

Inflight Capabilities	Benefits
Real time, real life performance monitoring – with full visibility on response times, user and web application errors, customer load and other user defined flexible metrics, enable tailored site monitoring with minimal effort on end user's QoE.	**Proactive performance monitoring** – fast and accurate resolution of site and user performance issues, maximizing QoE at all times.
Simple site performance analysis – no need to pre configure or reconfigure site parameters as it evolves to gain relevant visibility on application and general site bottlenecks. Inflight automatically provides statistics correlated per web application, page or user, automatically enriching information with user's geo location, as opposed to other synthetic, non real time or real life site performance monitoring solutions.	**Cost effective performance monitoring solution lowering OPEX** – doesn't require maintenance of the site performance monitoring tool in order to keep providing most relevant results, even after the site's functions and structure change.

Inflight for E-Commerce Sites

The Challenge

E-commerce competitiveness relies on the defense of core business information assets. Any e-commerce site, whether it is aware of it or not, is potentially under constant attacks of automated bots and site scrapers, which are trying to automatically replicate its core business information assets – the same information which is publicly open to its customers. Besides the direct negative business impact such data theft may have, those automated bots also overload the site's web application servers as well as utilize a high percentage of its costly internet connection.

The Solution

Inflight can improve e-commerce site competitiveness by enabling real time protection of publicly available data, from bots and scrapers serving competitors. By preventing knowledge leak and core business information loss – customers can ensure full extraction of the monetary benefit from your investments. In addition, protecting IT assets from being replicated or stolen enables e-commerce sites to sell data extracted from their core business databases – which can provide additional sales revenues from the protected IT assets.

Inflight Capabilities	Benefits
Real time monitoring of all inbound and outbound traffic – such as traffic content and pattern analysis, enabling detection of automated bots and scrapers activity stilling valuable web site content.	**Prevent knowledge leaks and core business information loss** – ensuring full extraction of the monetary benefit from your investments.
Actionable feeds – to external analytical engines and other network devices, this powerful detection is natively converted into real time active protection.	**Increase the value of your publicly available data** – preventing data scrapping to enable legitimate sales and revenues from the protected data (as databases), for non-competing purposes.

Inflight for Online Finance Environments

The Challenge

Financial institutions that operate online services strongly rely on their ability to protect themselves and their customers from evolving fraudulent activity. Detecting fraudulent transactions in real-time requires monitoring of all traffic coming in and out of the business's web site. Furthermore, anti fraud solutions must provide agility and fast integration with existing systems and fast time to market, in order to address the constantly changing security threats.

The Solution

The Inflight monitoring solution provides real time web traffic mediation and business event extraction, optimized for fraud activity detection, enabling on time prevention. This minimizes loss and damages to online business, through rich, real time logs, smart multistep transaction correlation and actionable event feed generation.

Inflight provides an agile protection solution – through an independent off-production-path monitoring solution, enabling fast deployment and full separation between production application and security monitoring.

Inflight Capabilities	Benefits
• **Real time, full visibility of all inbound and outbound traffic** – with the ability to extract information, using complex and resource intensive regular expressions.	• **Maximal fraud mitigation** – enabling anti fraud solutions to provide better protection than any other mediation alternative, minimizing loss and damages to the online finance business environment.
• **Inter session information correlation** – enables logs enrichment with traffic pattern information and additional parameters such as user geo-location.	• **Lower OPEX and CAPEX** – of the security solution, while maintaining high QoE, with no performance penalty to the web application servers.
• **Off-production-path solution architecture** – passive and none intrusive to the production environment. • **Enables full separation** – between the web application server and the security solution deployment.	• **Fastest TTM** – from decision to production • **Maximize agility** – to minimize time period between threat detection and protection deployment, with minimal risk to production environment. • **Reduced losses** – caused by fraudulent activity.

Inflight for Online Gambling Sites

The Challenge

Increasing revenues per gambler requires real time business intelligence on game patterns of each specific gambler. Extracting this information from existing gambling applications is often complex, risking production environment stability, while offering little to no future agility on business intelligence being extracted.

The Solution

Radware's Inflight monitoring solution extracts information at the user/transaction level and provides real time feeds of rich business events, enabling marketing analytics engines to create real time, personalized effective promotions.

Inflight's unique solution architecture provides easy adjustments to optimize effectiveness of such real time promotions, with minimal risk to the production gambling web application.

Inflight Capabilities	Benefits
• **Extract real-time monetary transaction information** – at the user level, taking place on the gambling site. • **Real time actionable user balance tracking** – enabling real time promotions based on user actual status, combined with historic user gambling patterns.	• **Increased average revenue per user** – by enabling effective and personalized real time promotion. • **Optimized gambler spending** – through real time money transfers between different games balances and different gambling applications.

Technical Specifications

Processor	2 AMD Opteron dual-core 2.2 GHz	
Memory	6 GB	
Gigabit/GBIC Ports	4 Gigabit Ethernet Ports (Copper or Fiber)	
1000Base-SX/LX/ZX Ports	All Gigabit Fiber ports deliver SX/LX/ZX interfaces depending on GBIC	
Monitored Protocols	HTTP, HTTPS	
Publishing Interfaces	Streaming via TCP/IP, JMS database via SQL HTTP	Log file transfer via NFS/SMB Direct Alert via SNMP Web Services
1000Base-SX (850 nm) Operating Distance	62.5 micron MM fiber .2 m to 275 m	50 micron MM fiber .2 m to 550 m
1000Base-LX/ZX Operating Distance	LX: Up to 10 km (6.2 mi)	ZX: Up to 80 km (49.7 mi)
USB Port	On front panel	
LCD Screen	On front panel	
RS-232C Console	DB -9 serial connection	Female DCE interface for out-of-band management
Dimensions	1U: Width: 424 mm (17 in.) Depth: 600 mm (24 in.) Height: 44 mm (1.7 in.) EIA rack or standalone: 482 mm (19 in.)	2U: Width: 424 mm (17 in.) Depth: 600 mm (24 in.) Height: 88 mm (3.4 in.)
Weight	1U: 9.5 kg (20 lbs)	2U: 10.9 kg (23 lbs)
Environmental	Operating temperature: 0°C to 40°C (32°F to 104°F) Humidity: 5% to 95% non-condensing	
Power	Auto-range supply: AC: 100-240V 50-60Hz Frequency: 47Hz - 63Hz Heat dissipation: 511.5 BTU/h	DC: -42~-72V Power consumption: 150 W Dual power supply (AC/DC) in 2U form
Certifications	Safety: EN, UL, CSA, IEC #60950-1 EMC: EN 55022, EN 55024, FCC Part 15B Class A CE, FCC, VCCI, CB, TUV, UL/cUL, CCC, C-Tick, RoHS	

Flexible Deployment Models

Inflight is delivered as an out-of-path appliance that is easy to deploy in less than an hour, and requires no integration with the application. It is completely transparent to the user and the application.

For sites that handle significant volumes of Secure Socket Layer (SSL) transactions, Inflight includes options for both software and hardware-based SSL decryption. This allows greater deployment flexibility and delivers Inflight intelligence where application traffic is encrypted using SSL.

Radware offers various versions and configurations of Inflight to fit the vast majority of user and system requirements and integrates with their Application Delivery offerings to create the Business-Smart Network.

Learn More

To learn more about how Radware's integrated application delivery solutions can enable you to get the most of your business and IT investments, email us at info@radware.com or go to www.radware.com.