



Introducing Radware Carrier Solutions

Intelligent IP Service Delivery



Smart Network. Smart Business.

Radware Intelligent IP Service Delivery

Radware transforms wireline and mobile carrier networks into intelligent networks delivering the user-service-content awareness needed to effectively manage IP services. Radware's IP service delivery solutions let operators gain visibility, intelligence and control over network traffic to support IP service operations, network transformation and convergence.

With Radware carriers gain:

- **Visibility** through Deep Packet/Flow Inspection (DPI/DFI)
- **Intelligence** and full awareness of user-service-content across layers 2-7
- **Control** to effectively manage IP-based service delivery and security

Radware Intelligent Service Delivery lets carriers effectively respond to IP service fault conditions, guarantee IP service availability and reliability. By optimizing IP service operations and extending advanced global resource virtualization, Radware drives IP service performance, translating into heightened quality of service while enabling network simplification and tuned resource utilization for reduced IP service CapEx/OpEx. In addition, Radware Intelligent IP service delivery supports new carrier Internet-based service models, for profitable business evolution and ARPU growth.



User Awareness



Service Awareness



Content Awareness

Radware Carrier Business Benefits:

- Enable new carrier revenue growth and monetize investments based on user, service and content awareness.
- Drive IP Service Delivery performance for improved network quality of service and high end-user quality of experience.
- Reduce CapEx/OpEX by optimizing utilization of network elements, infrastructure simplification and consolidation across multiple services and sites.

Service Availability, Performance, Integrity - **Assured.**

Network Virtualization, Consolidation, Convergence - **Optimized.**

Premium Internet and Service Factory - **Enabled.**

IP SERVICE DELIVERY CHALLENGE

Despite massive investments in data networking infrastructure, swelling volumes of IP traffic and growing numbers of subscribers, carrier networks lack awareness of users, services and content. The lack of traffic visibility across carrier data and control planes make it impossible for operators to control the quality and reliability of IP-based services, differentiate and effectively support new Internet-based business models.

RADWARE CARRIER-GRADE PERFORMANCE & FAULT TOLERANCE

Radware carrier solutions enhance the network's ability to identify, classify and optimize IP service operations across the most demanding networking environments. Radware carrier solutions are built on-top of carrier-grade, NEBS compliant, Radware APsolute application and security switches.

The system is designed for 99.999% uptime, wire-speed throughput, high performance, with 48DC power supplies and support of fully redundant configurations for fault tolerance and immediate disaster recovery.

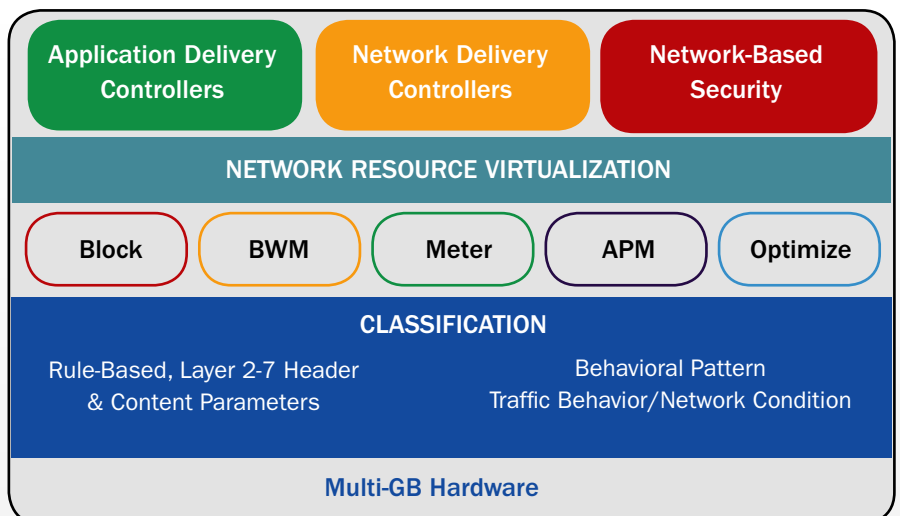
Radware Carrier Solutions

Radware Intelligent IP Service Delivery Solutions include:

1. Application Delivery Controllers enabling IP service delivery across all servers and service protocols including: HTTP, SIP, RTSP, SOAP and OSS/BSS. Radware Intelligent Application Delivery Controllers afford a unified IP service optimization framework letting carriers gain control over service availability, scalability, security and virtualization to support service consolidation, network and service transformation and convergence processes.

2. Network Delivery Controllers based on granular DPI/DFI technologies utilizing configurable policy-based switching for full session/flow intelligence, by user, content and service awareness for service factory enablement. With Radware Network Delivery Controllers, operators can rapidly launch new customized and premium content-based services such as Over the Top (OTT) video, user generated content and advertisements for new revenue generation.

3. Network-Based Security affording hybrid signature and multi-layer behavioral network integrity solutions, extending network security beyond DDoS and Firewalls for dynamic attack filter creation and enablement of new network-based managed security services.



OSS/BSS APPLICATION DELIVERY OPERATION EFFICIENCY

Radware OSS/BSS Application Delivery Controller solutions afford a fully integrated authentication, authorization and accounting (AAA) solution suite, to ensure operational efficiency of emerging 'on-demand' services. With Radware, carriers can manage operations across all front and back-end 'high-touch' AAA/subscriber data management tier including DHCP, DNS, RADIUS, LDAP as well as next generation IMS/HSS DIAMETER and HLR/LDAP migration programs. By affording layer-7 protocol awareness, Radware lets operators gain control over mission critical AAA services enabling significant design simplification, CapEx/OpEx savings and on-demand AAA flash crowd load distribution. Going beyond the limitations of OSS layer-4 load balancing, Radware provides intelligent AAA Application Delivery Controllers for AAA high availability and operational efficiency.

IMS/SIP SERVICE DELIVERY

Radware SIP Director provides high availability, accelerated performance and security for SIP-based applications and services. Radware SIP Director is designed to operate with a wide range of applications across IMS service control, signaling and transport layers. SIP Director is also optimized for Pre-IMS networks including Soft-switches and Session Border Controllers (SBC). With Radware, operators can guarantee the continuity, scalability, carrier-grade performance and interoperability of VoIP/SIP-based services, essential to support highly trafficked SIP trunks and peering environments. Radware's support of IMS protocols (SIP, DIAMETER) across multiple transport environments enables seamless, optimized and scalable migration to IMS networks.

MANAGED SECURITY SERVICES

Radware Managed Security Solutions (MSS) let wireline operators deliver managed security as a value-added service to subscribers, for ARPU growth:

Radware Clean Business Broadband lets carriers extend network-based, high-performance, managed IPS and DoS/DDoS, for enterprise and online business customers. Employing advanced behavioral 'zero minute, zero-touch, zero-false positives' for dynamically generated attack

filters, Radware lets broadband operators introduce new security packages for service differentiation, ARPU growth and customer stickiness.

Radware Managed Content Security lets carriers extend, optimize and scale any best-of-breed managed content security inspection services to customers, including anti-virus, anti-spam, URL filtering, web application firewall (WAF) and parental control.

DPI/DFI FRAMEWORK SOLUTIONS

Radware DPI/DFI solutions deliver 'in the cloud' layer 2-7 visibility and policy-based session control to support new network-based services and avoid the disruption of business models:

DPI/DFI Carrier Service Factory Enablement: Radware DPI/DFI delivers the intelligence needed to extend a new generation of content services, differentiating, protecting and growing operator hybrid Internet/walled garden business models. Utilizing configurable policy-based switching technologies Radware supports an 'open service factory environment' at the network's edge, providing tiered bandwidth, security, redirection (including 'hair-pinning'), service routing and load distribution to support new business models, ensure operational efficiency and eliminate service congestions.

DPI/DFI Network Integrity and Infrastructure Protection: Radware DPI/DFI utilizes advanced behavioral algorithms to mitigate even the most aggressive attacks including 'zero-minute' worms and service floods, for wire-speed security, affording dynamically generated 'coarse grain' along with 'fine grain' filters while enforcing traffic policies to meet SLAs.

Capacity Management for Carrier Transport Services:

Radware DPI/DFI enables aggregative bandwidth shaping and rate limiting across ingress traffic, including aggressive P2P applications, providing new tools to control in-net/off-net service levels. Coupling unique behavioral algorithms and signatures to control the ingress malware, Radware helps service providers maintain connectivity profit margins from international bandwidth and introduce new tiered bandwidth models, including service and usage-based plans for increased ARPU and profitability.

With Radware Mobile Internet Gateway solutions operators gain granular policy-based control over mobile Internet traffic, providing the tools to effectively 'open' mobile networks to the Internet for service growth and differentiation:

MOBILE SERVICE FACTORY ENABLEMENT

Radware service factory enablement lets mobile carriers manage and optimize mobile Internet and mobile broadband traffic by any user, service, or content criteria. With Radware, mobile carriers can take control, differentiate, accelerate and quickly introduce new content based services (OTT video, UGC, P2P), monetizing network investments for new revenue generation, as well as controlling RAN resource exploitation and effectively managing bandwidth for cost savings. Radware's configurable policy switch lets mobile operators extend premium, Internet/walled-garden services for ARPU growth and heightened service profitability, avoiding disruption of operators' flat rate revenue model.

ACCELERATED AND OPTIMIZED INTERNET SERVICE DELIVERY

Radware enables optimized Internet service delivery over the RAN. Coupling on-the-fly traffic classification with network Wireless TCP (W/TCP) optimization, content compression, acceleration and caching, Radware overcomes mobile RAN bandwidth and handset constraints, enabling adapted, reliable, high performance mobile Internet service delivery. Addressing IP service performance challenges across the RAN, Radware helps mobile operators drive widespread mobile Internet service adoption and growth in rich media content delivery across all mobile Internet devices.

INTELLIGENT SERVICE ROUTING & OFFLOADING

In absence of mobile Internet traffic visibility, mobile carriers currently transport all Internet traffic through content adaptation, caching and compression servers as well as WAP Gateways.

Radware's DPI/DFI configurable policy-switch, enables the intelligent routing of traffic flows directly to the

processing server, bypassing unnecessary processing, reducing the number of proxies in the processing path and improving end-user's quality of experience. Advanced 'hair-pinning' enables efficient service flows - by user, handset (UA) and content type (MIME).

MOBILE BROADBAND SECURITY

As mobile carriers move from controlled Internet access to open broadband connectivity, they are exposed to network and service security and integrity challenges. Radware multi-Gig network-based intrusion prevention and adaptive behavioral DoS/DDoS, clean mobile networks from high-speed Internet access (HSIA-Gi/Pi networks) attack traffic, preventing emergent Internet-to mobile and mobile-to-Internet security threats. Radware's advanced-behavioral IPS and DoS/DDoS security extend 'zero minute, zero touch, zero-false' management designed to identify 'mis-behaving customers', thwart worm propagation and secure the mobile carrier core against threats. In addition, Radware supports the implementation of multiple security strategies across Gi, Gn/Gp and across PDSN/FA and GGSN interfaces.

Why Radware?

Radware is the industry leader in intelligent application delivery solutions. Wireline and mobile carriers world-wide rely on Radware to optimize IP services, guaranteeing high-availability, maximum performance, service and network integrity and efficient infrastructure utilization.

With Radware, carriers are able to ensure the quality of IP-based services, reduce service delivery costs, introduce new services and Internet business models to grow revenues and improve profitability.

Let Radware make your network 'business-smart' to get the most value from current and future carrier IP services.



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