

Sonus Network Border Switch

JOIN THE EVOLUTION TO THE EDGE

fixededge



A SONUS NETWORKS PRODUCT

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The Sonus NBS is
 the only IP interconnect
 solution that integrates
 security, call control,
 quality of service,
 advanced media services
 and switching on
 a scalable, cost-effective,
 carrier-class platform.

Network Security in an IP World

Carriers around the world have made direct IP-to-IP interconnect the preferred method for both IP-voice peering and access. Faster and more flexible than TDM interconnect, IP interconnect reduces operating costs and enables a new generation of high-bandwidth multimedia services.

However, IP interconnect also presents carriers with a fresh set of security, control and Service Level Agreement (SLA) challenges. Only the Sonus Network Border Switch (NBS) addresses all of these challenges with a complete, integrated, carrier-class solution. Building on Sonus' years of experience designing, deploying and supporting many of the world's largest carrier IP-voice networks, the Sonus NBS is the industry's most advanced security and session border control solution.

AN INTEGRATED APPROACH TO THE EDGE / Based on the market-leading Sonus GSX Open Services Switch, the Sonus NBS is the industry's only complete border switching solution. Rather than deploy and manage multiple types of edge devices, network operators can satisfy all of their security, border control and media services requirements with an integrated, easily managed NBS system. Moreover, coexistence with the Sonus GSX9000™ switch performing the media gateway function on the same platform provides carriers with a simple, cost-effective migration path from TDM to IP interconnect.

The NBS is an integral component of the Sonus IP Multimedia Subsystem (IMS) architecture as defined by 3GPP and TISPAN—the leading standards for next-generation fixed and mobile service provider networks. In conjunction with the Sonus PSX™ routing server, the NBS allows carriers to expand their market coverage and optimize network operations while protecting their infrastructure.

THE REWARDS AND RISKS OF IP INTERCONNECT / For voice network operators, IP interconnect offers a host of benefits:

- > **IP peering** for efficient carrier-to-carrier voice and multimedia interconnection
- > **Enterprise access** for delivering managed services to business customers
- > **End user access** for consumer Voice over Broadband (VoBB) and multimedia services
- > **Application service provider access** for specialized consumer and business services

Yet IP interconnect also exposes voice networks to Denial of Service (DoS) attacks, bandwidth theft, toll fraud and intrusions from both external and internal sources. To protect their network borders, carriers have deployed Network Address Translation (NAT) devices, access control lists in edge router/switches, firewalls and other systems that block exploits against lower-level protocols. In addition, Session Border Controllers (SBCs) have been installed at the core network edge to

resolve NAT/firewall traversal issues, provide basic rate limiting and bandwidth monitoring and enable H.323/SIP interworking. However, installing, integrating and managing so many different border control devices drives up both capital and operating expenses. Carriers need a more cost-effective way to extend and protect their network borders and core network elements: the Sonus NBS.

A CARRIER-CLASS SOLUTION / Based on the GSX Open Services Switch, the Sonus NBS is the only IP interconnect solution that integrates security, call control, Quality of Service (QoS), advanced media services and switching on a scalable, cost-effective, carrier-class platform. With the Sonus NBS solution, users experience simplified sparing, maintenance and provisioning, while carriers can leverage their existing investment in GSX operations support, training and procedures.

COMPREHENSIVE SECURITY / The Sonus NBS provides robust security features: bandwidth and QoS theft protection; traffic policing (white lists, black lists, gray lists); Denial of Service (DoS) and Distributed DoS (D-DoS) attack detection and blocking; Rogue RTP protection; Secure RTP media authentication and confidentiality; TLS signaling authentication and confidentiality. To protect carrier networks against outside attacks, the NBS creates a “split DMZ” that uses either separate Ethernet links or 802.1Q virtual LANs (VLANs) to segregate trusted from untrusted traffic. The NBS translates between external and internal network addresses, acts as a firewall, filters out malformed or suspicious traffic and hides the network topologies from one another.

CONSISTENT CALL CONTROL / IP Trunk Groups (IPTG), an innovative feature of the Sonus NBS, allow network operators to manage IP sessions in the same way they manage PSTN trunk groups. Consistent with the PSTN call control features of the Sonus GSX, the NBS helps network operators transition easily from TDM to IP interconnect. Other NBS call control and QoS features include SIP back-to-back user agent; extensive signaling interworking options, including SIP, SIP-I and H.323; Call Admission Control (CAC) and per-flow resource allocation; GR-477 traffic control; call rate and registration rate limiting; QoS packet marking; lawful intercept; standard CDRs.

COST-EFFECTIVE CONNECTIVITY / Support for 802.1Q VLANs greatly reduces the cost of IP interconnect by letting multiple external networks share physical ports on the NBS. Other NBS features that help carriers reach more subscribers include far-end NAT traversal and signaling protocol translation: SIP to SIP-I and SIP to H.323.

ADVANCED MEDIA SERVICES / GSX-based media services yield further savings by eliminating the need to install and manage separate media servers. Integrated media services include: media transcoding; recorded announcements; DTMF relay and interworking; support for data (modem) calls and fax interworking.

Join the evolution of border security:

- > Deployment flexibility across multiple platforms and multiple peering connections
- > Reduce capex with an integrated security, call control, media services and switching solution
- > Reduce opex with a solution that uses less space and less energy
- > Simplify network operations and provisioning with a unified border solution for TDM and IP connections
- > Expand revenue opportunities through advanced media transcoding, enhanced IP services and a broader subscriber base
- > Prepare for the future now with a solution that provides a seamless migration to the IMS/TISIPAN standards of tomorrow

POLICY-BASED ROUTING / In combination with the Sonus PSX routing server, the NBS leverages the same policy-based packet switching features of the GSX Open Services Switch that drive Sonus IP-based voice networks around the world.

HIGH AVAILABILITY AND SCALABILITY / The modular, NEBS-compliant GSX9000 platform scales to support hundreds of thousands of subscribers. Fully redundant interface and management cards, automatic protection switching on optical interfaces and live software upgrades ensure 99.999% or better availability. The fixed-configuration NEBS-compliant GSX4000™ platform provides a medium-port-density solution with the same high availability as the GSX9000 model.

INDUSTRY-STANDARD NETWORK ARCHITECTURE / The 3GPP's IMS architecture was originally designed for wireless networks, while ETSI TISPAN focused on broadband wireline networks. Now, the two are merging to create a unified model for next-generation networks. For example, within this new combined model, the Border Gateway Function (BGF) has become the primary border control element for media. The Sonus NBS can be deployed as a C-BGF between access networks and the IMS/TISPAN cores of the same or different carriers. While acting as a standard BGF, the NBS also provides the rich security, session border control and media services already described.

ABOUT SONUS NETWORKS / Network operators around the world count on Sonus Networks to bring them into the future. We've brought IP to the core since 1997, and today we're a global leader in IP-voice, with over half of the world's top 10 telecommunications providers as our customers.

To learn more about our fixedEdge solutions, contact your Sonus sales representative or visit us online at www.sonusnetworks.com.



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