Sonus SBC 5200™ Session Border Controller
The Next Generation of SIP Session Management

The shift to multimedia/multidevice communication requires a new generation of Session Border Controller (SBC): one that looks beyond simple border mediation to a broader world of seamless, service-rich interoperability. The Sonus SBC 5200 is the first SBC that addresses the next-generation needs of SIP communications by delivering embedded media transcoding, robust security and advanced call routing in a high-performance, small form-factor device.

The Sonus SBC 5200 enables service providers and enterprises to quickly and securely enhance their network by implementing new services like SIP trunking, secure Unified Communications and Voice over IP (VoIP). The SBC 5200 provides a reliable, scalable platform for IP interconnect that delivers the longstanding strengths of the Sonus SBC 9000™ Session Border Controller−security, session control, bandwidth management, advanced media services and integrated billing/reporting tools−in an SBC appliance. For pure IP-to-IP interconnect, the SBC 5200 delivers a network edge like no other:

- Unique design with embedded transcoding/encryption processing for unbeatable real-world performance and scalability;

- Advanced policy and routing intelligence via an embedded PSX™ engine or centralized PSX policy server;

- New IP-based multimedia services beyond VoIP (IM, presence, Web 2.0);

- Superior protection against network attacks, overload and outages while preserving stateful call handling;

- A proven SIP trunking solution with support for multiple SIP variants from IP-PBX vendors;

- Built-in media transcoding featuring custom-built DSP firmware

Sonus SBC 5200: More Features for a More Demanding Future

[The **SONUS EDGE** indicates a feature unique to the Sonus solution]

What the Future Requires...	The Sonus SBC 5200 Has Today...	
Robust security	Multi-layer encryption (SRTP, TLS, IPsec), session-aware firewall, DoS/DDoS and Rogue RTP protection	SONUS EDGE
Purpose-built media transcoding	Built-in multimedia transcoding: G.711, G.723, G.726, G.729a/b, G.722.2/AMR-WB (HD voice), AMR-NB, EVRC, EVRCB0, iLBC	
IPv4-IPv6 interworking	IPv4-IPv6 dual-stack protocol support	
Rapid deployment	SBC 5200 can be deployed in 2 days with Sonus SBC 5200 Implementation Services	
Flexible routing & policy management	SBC 5200 supports centralized (via PSX server) or distributed (via an embedded PSX) routing & policy management	SONUS EDGE
High performance during overload/attack	Unique multiprocessor design demonstrates high performance during overload/attack conditions - 4x better than the leading SBC	SONUS EDGE
Strong SIP interoperability	Standards-compliant (SIPconnect 1.1, etc.); dynamic and static SIP normalization	
High availability/disaster recovery	99.999% system availability (no single point of failure); rapid recovery after power outages−8x faster than the leading competitor	SONUS EDGE

For pure IP-to-IP interconnect, the SBC 5200 delivers a network edge like no other:

A Networked Solution

The SBC 5200, when deployed in conjunction with the Sonus PSX Centralized Policy Server, results in a networked solution that delivers end-to-end SIP session control and a networkwide view of SIP traffic and policy management. This approach has distinct advantages over a disaggregated, point-product deployment model, enabling service providers and enterprises to centrally manage network dial plans and policies across all of their network borders for increased routing efficiencies and better SIP session control.

Big Features, Small Footprint

The SBC 5200 combines network security, media transcoding, signaling interworking and robust session management in a small, powerful footprint. The unique architecture of the SBC 5200 delivers independent performance scalability across any of three dimensions— general processing, security and media transcoding—without impacting the performance of the other dimensions.

Real-World High Performance

No other SBC is built like the SBC 5200 and it shows: in a recent performance study, independent analysts Miercom found that the SBC 5200 performed 400% better than the leading competitor during overload conditions. The unique design of the Sonus SBC 5200 features built-in encryption hardware and embedded digital signal processors for transcoding, so as your SBC works harder your SIP session performance doesn't grow weaker—even during a Denial of Service attack.

Robust SIP Interoperability and IPv4-IPv6 Interworking

The Sonus SBC 5200 undergoes rigorous testing with the industry's leading IP-PBXs, SIP-based Integrated Access Devices (IADs) and other VoIP devices to ensure robust SIP interoperability in heterogeneous networks. The SBC 5200 also supports standards-based SIP trunking through SIPconnect compliance. In addition, all Sonus products support IPv4 and IPv6, with Sonus SBCs serving dual-stack IPv4/IPv6 communications for seamless interworking between new and legacy IP devices.

Built-In, Customized Media Transcoding

Sonus takes a much different approach than other SBC vendors with our media transcoding. We start by integrating commoditized "building block" components from third parties such as codecs, tone generation and detection. Then we enhance and add value to those building blocks by developing in-house modules for features such as jitter buffers, ECAN control, DTMF interworking and other improvements. Finally, we incorporate the media transcoding solution into the SBC 5200 box itself through a series of digital signal processors. The result is media transcoding that is highly scalable, highly efficient and highly customizable.

Accelerate Deployment with Sonus Global Services

Sonus SBC 5200 Implementation Service include configuration, verification and optional database design services to provide rapid SBC deployment in the real world of complex SIP session management. Sonus also offers SBC migration services for customers migrating from first-generation SBCs to the next-generation SBC 5200.

About Sonus Networks

Sonus Networks Inc. provides network transformation through IP communications. Sonus solutions and services enable fixed, mobile and cable operators to add more value to their subscribers through new session awareness and multimedia capabilities. Sonus' standards-based solutions extend the investments made in traditional networks by enabling operators to seamlessly migrate to next-generation technology and deliver the secure, reliable, scalable and cost-effective network needed to grow their business. For more information visit www. sonusnet.com.

Technical Specifications

System Capabilities

- Up to 64,000 Simultaneous P2P VoIP Calls with media
- Up to 256,000 subscribers

Media Services

- Transcoding G.711, G.726, G.729A/B, G.723, iLBC, G.722, AMR-NB, AMR-WB, EVRCB0
- Wireline, wireless, wideband and clearchannel codec pass through
- T.38 compliant fax relay or fall back to G.711
- VAD, Silence Suppression, Dynamic Jitter Buffer, Fax/ Modem Detection, DTMF/Tone Relay/RFC2833/ RFC4733 interworking
- NAT/NAPT on media
- DTMF Trigger Detection and Notification
- Generic audio codec relay
- Tones & Announcements
- Local Ring Back Tone (LRBT) support with centralized PSX Policy Server
- RTP inactivity monitoring
- Video codec relay

Management Capabilities

- Graphical based wizards for ease of configuration
- Secure embedded web-based management GUI
- Sonus CLI, SSH
- Centralized support by Sonus Insight EMS
- SNMP V2 status and statistics
- Local logging of events, alarms, and traps; Call trace
- Sonus DSI Level 0 support for storing CDRs; RADIUS accounting records
- Live Software Update (LSWU)

Routing/Policy

- Embedded policy/ routing engine
- Centralized support by Sonus PSX Policy/Route Server using DIAMETER+
- Screening, blocking, routing, presentation, call type filters
- Route prioritization
- Leading digit routing; International routing; URI based routing
- Digit/parameter manipulation
- E911 support; Priority Call handling

Signaling

- Back to Back User Agent (B2BUA)
- SIP, SIP-I/ SIP-T, SIP/H.323; Sonus Gateway to Gateway Signaling
- SIP protocol normalization/ protocol repair; SIP message manipulation
- NAT/NAPT on signaling

Protocol Support

- IPV4, IPV6, IPV4/IPV6 interworking
- SSH; sFTP
- SNMP; NETCONF; NTP
- HTTP/HTTPS
- RTP/RTCP
- UDP, TCP
- DNS, ENUM

Security

- Session aware firewall; Topology Hiding
- Line rate DoS/ DDoS, and Rogue RTP protection
- Line rate malformed packet protection
- TLS, IPSec (IKEV1) for signaling encryption
- Secure RTP/RTCP for media encryption

QoS

- Bandwidth management
- Call admission control (CAC) per trunk group, per zone
- Per call statistics
- TOS/ COS packet marking

Packet Network Time Source

- Network Time Protocol (NTP) per RFC-1708

Redundancy

- 1:1 Redundant Systems for Service Availability
- 1:1 Redundant Management/Control Ports

Hardware Specifications

Chassis

- 2U, rack mount
- Inches: 17.5" Wide x 3.5" High x 21" Deep
- Centimeters: 44.5 Wide x 8.8 High x 53.3 Deep
- Optional mounting brackets for 19" or 23" rack

Memory

- 24 Gbytes

Storage

- 256 Gbytes of Solid State Disk (SSD) storage

Front Panel

- Status Indicators Front Panel LEDs:
  - Status
  - Critical
  - Major
  - Minor
  - User
  - Location
- Single USB V2.0 interface

Rear Panel

- Management Ports:
  - Two (single active, single passive) 10/100/1000 Ethernet RJ-45 ports
- Media Ports:
  - Four 1 Gbps Ethernet fiber or copper via SFP
- High Availability Ports:
  - Two 1 Gbps Ethernet multimode fiber via SFP
- Single Field Service port with RJ45 connector
- Alarm port with DB15 connector
- Locator LED
- RJ-45 connectors
- Single serial craft DB9 port

Heat Dissipation

- Fully-Populated Maximum:
  - 1000 Watts
  - 3410 BTU per Hour
- Replaceable Filter

Chassis Mounting Options:

- 19" or 23" Adjustable Brackets

Weight Maximum Fully Populated:

- 50 lbs.

Operating Altitude:

- 6,000 Feet
- 1,800 Meters

DC Power Option:

- Input: -40 to -72 VDC Redundant Inputs
- Peak Consumption: 18.8A
- Hardware Specifications (cont.)

AC Power Option:

- RMS Input Voltage
  - Minimum 90 VAC
  - Nominal 100-240 VAC
  - Maximum 264 VAC
- RMS Current
- 5.6A
- Input Frequency
- Minimum 47 Hz
- Nominal 50/60 Hz
- Maximum 63 Hz
- Regulatory Compliance

Central Office Standards:
- DC Systems – SR-3580 NEBS Level 3
  - GR-1089-CORE
  - GR-63-CORE
- AC Systems – SR-3580 NEBS Level 3
  - GR-1089-CORE
  - GR-63-CORE

Safety:
- UL 60950-1 – United States
- CAN/CSA-C22.2 NO. 60950-1-03 – Canada
- IEC/ EN 60950-1 – European Union
- AS/NZS 60950:2000 – Australia & New Zealand
- NOM 019 – Mexico
- IEC 60950; IECEE CB Scheme – International

EMI/EMC:
- CFR47 Part 15 Class A – United States
- ICES-03 – Canada
- CISPR22 Class A – International Standard
- VCCI Class A – Japan
- AS/NZ 3548 Class A – Australia & New Zealand
- CNS 13438; Taiwan (BSMI)
- ETSI EN 300 386 Electromagnetic Compatibility (EMC) requirements – Europe

- ETSI EN 300 386-2 Electromagnetic Compatibility (EMC) requirements
- EN 55022 Class A emissions
- EN 55024
- EN 6100-4-2; ESD Immunity
- EN 6100-4-3; Radiated immunity
- EN 6100-4-4; EFT/B Immunity
- EN 6100-4-5; Surges
- EN 6100-4-6; Conducted Immunity
- EN 6100-4-11; Voltage Dips and Interruptions
- EN 6100-3-3; Flicker
- EN 6100-6-2; Harmonics

Environmental:
- 5 to 40º C Operating
- -5 to 55º C Short Term
- 5 to 90% Non-Condensing Operating Humidity

European Environmental Standards:
- ETSI EN 300 019-1-0 Part 1-0: Classification of environmental conditions, Introduction
- ETSI EN 300 019-1-1 Class 1.2 Part 1-1: Classification of environmental tests; Storage
- ETSI EN 300 019-2-1 Storage Class 1.2
- ETSI EN 300 019-1-2 Class 2.3 Part 1-2: Classification of environmental conditions; Transportation
- ETSI EN 300 019-2-2 V2.1.2 Transportation Class 2.2
- ETSI EN 300 019-1-3 V2.1.1 Class 3.2 Part 2-3: Classification of environmental conditions; Stationary Use at weather protected locations
- ETSI EN 300 019-2-3 V2.2.2 Stationary Use at weather protected locations Class 3.1E

Table 1. Estimated Power Consumption (all power measurements taken with fans running high)

| | SPS100 | SPS100DB | AC Low Line Minimum: 90 Vrms Nominal: 100-120 Vrms Maximum: 140 Vrms | | AC High Line Minimum: 180 Vrms Nominal: 200-240 Vrms Maximum: 264 Vrms | | DC Minimum: 40 Vdc Nominal: 48 Vdc Maximum: 60 Vdc | |
			Amps	Watts	Amps	Watts	Amps	Watts
SBC 5200	0	0	5.8	515	2.8	502	12.4	519
	1	0	6.7	604	3.3	595	14.8	589
	1	1	7.6	676	3.7	656	16.8	672
	1	2	8.5	755	4.1	731	18.8	751

To learn more, call your Sonus sales representative or visit us online at www.sonus.net