Sonus SBC 5100™ Session Border Controller

For years, the world's largest service providers and enterprises have relied on Sonus session border controllers (SBCs) for secure SIP-based communications. The SBC 5100 delivers many of the industry-leading capabilities of the Sonus SBC 5200—robust security, flexible SIP session routing & policy management, media transcoding—at a more attractive price/performance point for Tier 2/3 service providers and medium-to-large enterprises (250 to 10,000 concurrent sessions). With high-end features you won't find in other "mid-sized" SBCs, the SBC 5100 allows regional service providers and medium-to-large enterprises to deliver a world-class communications experience designed for their world. The SBC 5100 Series is available in two form factors: modular (SBC 5110) and fixed (SBC 5100). The SBC 5100 Series delivers true multimedia SBC support for audio, video and collaboration with advanced security, priority, identity and service quality capabilities.

System Capabilities

- Sessions
  - 10,000 sessions (SIP and/or H.323)
  - 10,000 calls
  - 10,000 transcoded sessions (based upon codec type)
  - RTCP sessions scale 1:1 with RTP sessions
- Call Set-Up
  - Maximum call setup rate: 150 cps
- Registrations
  - Maximum new registrations/sec: 400
  - Maximum refreshes/sec: 1,700 per second
  - Total registered end point support: 100,000; up to 10,000 NAT'd end points
- Encryption
  - Maximum number of TLS sessions: 10,000
  - TLS set-up rate: 50 cps w/o mutual authentication
  - Maximum # of IPsec tunnels: 2,048 (4,096 IPsec SAs)
  - IPsec (IKE) setup rate: 50 cps
  - Maximum # SRTP sessions: 10,000

Media Services

- Transcoding up to 10,000 concurrent calls: G.711, G.726, G.728, G.729A/B, G.723, iLBC, G.722, G.722.1, AMR-NB, AMR-WB, EVRCB0, EVRC0
- Wireline, wireless, wideband and clear channel 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
- Supported video codecs: H.264 AVC, H.264 SVC, H.263+; H.263, H.261, VP8

Redundancy

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

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/V3 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)

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
- Binary floor control protocol (BFCP) Far-end camera control (FECC)

Protocol Support

- IPv4, IPv6, IPv4/IPv6 interworking
- SSH; sFTP
- SNMP; NETCONF; NTP
- HTTP/HTTPS
- RTP/RTCP
- UDP, TCP
- DNS, ENUM

Routing/Policy

- Embedded policy/routing engine
- Optional centralized policy/routing via Sonus Centralized Policy Server (PSX 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

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

Quality of Service (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

Hardware Specifications

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
  - Two 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
- Locator LED
- Alarm port with DB15 connector
- Single serial craft DB9 port

Memory

- 12 GB of RAM

DSP Expansion

- Model 5110: Modular DSP slots
- Model 5100: Fixed DSP cards

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

Chassis Mounting Options:

- 19" or 23" Adjustable Brackets

Storage

- SBC 5100: 80 GB of Solid State Disk (SSD) storage
- SBC 5110: 128 GB of SSD storage

AC Power Option

- RMS Input Voltage
  - Minimum 90 VAC
  - Nominal 100-240 VAC
  - Maximum 264 VAC
- RMS Current
  - Low Line: 7.1A
  - High Line: 3.4A
- Input Frequency
  - Minimum: 47 Hz
  - Nominal: 50/60 Hz
  - Maximum: 63 Hz

DC Power Option

- SBC 5100
  - Peak Consumption: 14.5A
  - Number of power supplies, standard: 1
  - (Redundant dual power supply optional)
- SBC 5110
  - Peak Consumption: 16.8A
  - Number of power supplies, standard: 1

(Redundant dual power supply optional)

Operating Altitude

- 6,000 ft. (1,800 m.)

Heat Dissipation

- Fully-Populated Maximum:
  - 633 Watts
  - 2159 BTU per Hour
- Replaceable Filter

Weight Maximum Fully Populated

- 50 lbs. (22.68 kg)

Environmental

- 5 to 40° C Operating
- -5 to 55° C Short Term
- 5 to 90% Non-Condensing Operating Humidity

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

Table 1. Estimated Power Consumption (power estimates with fans running at high speed)

	AC Low Line (W)		AC High Line (W)		DC Input (W)	
	Minimum: 90 Vrms Nominal: 100-120 Vrms Maximum: 140 Vrms		Minimum: 180 Vrms Nominal: 200-240 Vrms Maximum: 264 Vrms		Minimum: 40 Vdc Nominal: 48 Vdc Maximum: 60 Vdc	
Configuration	**Amps**	**Watts**	**Amps**	**Watts**	**Amps**	**Watts**
SBC 5110	4.5	408	2.3	407	9.8	390
SBC 5110 +1 DSP25	5.2	472	2.6	465	11.4	454
SBC 5110 +2 DSP25	5.9	530	2.9	525	12.8	512
SBC 5110 +3 DSP25	6.6	597	3.3	591	15.1	604
SBC 5110 +4 DSP25	7.4	667	3.6	654	16.8	673

			AC Low Line		AC High Line		DC	
			Minimum: 90 Vrms Nominal: 100-120 Vrms Maximum: 140 Vrms		Minimum: 180 Vrms Nominal: 200-240 Vrms Maximum: 264 Vrms		Minimum: 40 Vdc Nominal: 48 Vdc Maximum: 60 Vdc	
	SPS100	**SPS100DB**	**Amps**	**Watts**	**Amps**	**Watts**	**Amps**	**Watts**
SBC 5100	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

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