The Sonus SBC 1000™ Session Border Controller

Sonus Session Border Controllers (SBCs) help the world's leading enterprises reduce communications costs, enable Unified Communications (UC) and protect their networks against Internet Protocol (IP)-based attacks. Now small businesses and branch offices can enjoy the same industry-leading SBC technology in a right-sized appliance designed specifically for their networks.

The SBC 1000 Session Border Controller is an advanced SBC built for smaller enterprise networks, delivering robust security and proven interoperability with leading business

The Sonus SBC 1000

solutions. The Sonus SBC 1000 also features built-in survivability for Microsoft Lync and BroadSoft BroadWorks, so calls go through even if the wide area network (WAN) goes down. The SBC 1000 configurations are designed for ease of deployment and growth. Both session and port expansion can be remotely enabled via a simple license, eliminating the need for a truck-roll and on-site technician.

System Capabilities

- Sessions
  - Maximum number of SIP-to-SIP calls: 160
  - Maximum number of TDM-to-SIP calls: 84
  - Maximum number of total concurrent calls: 160
  - Maximum number of transcoded sessions (based upon codec type): 120

- Call Set-Up
  - Maximum call set-up rate: 4 cps

- Registrations
  - Maximum number of registered users: 600

- Encryption
  - Maximum number of TLS sessions: 160
  - Maximum number of SRTP sessions: 160

- Business Continuity
  - Bypass relays (PRI-PRI, FXS-FXO) for emergency calls (e.g., 911)
  - PSTN fallback when WAN is down
  - Survivable Branch Appliance (SBA) for Lync
  - Resilient Branch Appliance for Lync survivability over 3G/4G or secondary IP connection such as DSL
  - Local survivability with BroadWorks
  - Multiple SIP trunking service provider support for redundancy
  - Site survivability through built-in SIP registrar
  - ITSP E911 Support
  - Redundant Ethernet ports and multiple spanning trees

Management Capabilities

- Operations, Administration and Management
  - Single, secure, web-based GUI with real-time monitoring
  - REST-based programmatic interface to remotely manage multiple SBC 1000s
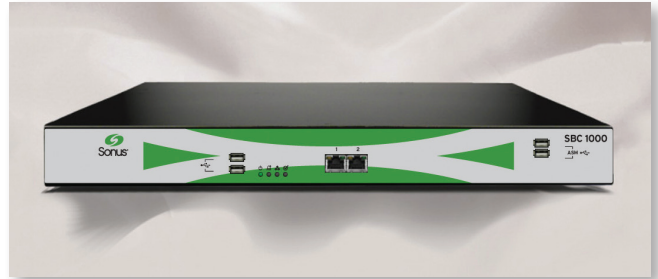
- SNMP v2/v2c for comprehensive network management using third-party management systems
- Configuration backup and restore; Configuration upload from one site to another; Partial configuration import/export through REST
- CDR reporting
- Microsoft SCOM support
- Syslogs for troubleshooting, with support for free Sonus LX syslog server and log parser tool
- Historical Stats and TCAs

- Authentication
  - Local user (User name/password)
  - Active Directory
  - RADIUS

Media Services

- G.722, G.722.2 (AMR-WB), T.38, G.723.1 (5.3 kbps, 6.3 kbps), G.726 (32 kbps), G.729A/B (8 kbps)

- Transcoding

- Video

- T.38 with CNG tone detection

- DTMF/RFC4733; Inband DTMF; SIP INFO/RFC-2833

- Voice Activity Detection (VAD)

- G.168 Echo Cancellation with standard 128 ms tail length

- Comfort noise generation and packet loss concealment

- Automatic call type detection – voice, fax or modem

- Music on-Hold

- Generate call progress tones – ringback, busy, re-order

- RTP inactivity monitoring (dead call detection)

- RTP pass-through

- RTCP/RTCP-XR

- Caller ID support

Signaling

- Maximum number of signaling groups: 100
- TDM Signaling (ISDN): AT&T 4ESS/5ESS, Nortel DMS-100, Euro ISDN (ETSI 300-102), QSIG, NTT InsNet (Japan), ANSI National ISDN-2 (NI-2)
- TDM Signaling (CAS): T1 CAS (E&M, Loop start); E1 CAS (R2)
- Back-to-Back User Agent (B2BUA)
- SIP (UDP/TCP/TLS) to/from SIP (UDP/TCP/TLS)
- SIP (UDP/TCP/TLS) to/from CAS/PRI/BRI/FXS/FXO
- CAS/PRI/BRI/FXS/FXO to/from CAS/PRI/BRI/FXS/FXO
- SIP Message Manipulation (SMM)

Protocol Support

- SNMP
- NTP
- Https
- RTP/RTCP, SRTP/SRTCP
- SIP over UDP, TCP, TLS
- DNS
- RIP, OSPF as dynamic IP routing protocols
- DHCP server
- DHCP client
- Asynchronous DNS for SIP
- NAT
- Support for Reason Header

Routing/Policy

- Maximum number of call route entries: 1,000
- Active Directory/LDAP-based call routing
- Routing based on quality metrics
- Least cost routing
  - Event-based action set
- On-board call forking (up to eight end points)
- Supplementary services
  - Call hold
  - Call transfer (blind & assisted)
  - Call forward
- Embedded policy/routing engine
- Optional centralized policy/routing via Sonus Centralized Policy Server (PSX Server) using SIP
- Screening, blocking, routing, presentation, call type filters
- Route prioritization
- Leading digit routing; International routing; URI-based routing
- Digit manipulation (name/number manipulation using regular expression and Active Directory lookup)
- SIP routing
  - Based on source and destination IP address
  - Fully Qualified Domain Name (FQDN)
- Detect proxy failure and route to alternate paths
- Re-route on failure based on full Cause Code re-routing on T1/E1 trunks
- Lync E911 support; SIP/PIDF-LO passthrough and ELIN Gateway

Security

- TLS for signaling encryption
- Secure RTP (SRTP) for media encryption
- Built-in VoIP firewall
- Windows firewall for Application Solution Module to secure SBA function of Lync
- Topology hiding; User privacy
- Prevention of Denial-of-Service (DoS) and Distributed DoS (DDoS) attacks
- Dialed Number Identification Service (DNIS), Calling Line Identification (CLID), Call type pre-authentication
- Traffic separation (VLAN interface separation)
- Malformed packet protection
- Access Control Lists (ACLs)
- IPsec VPN tunnel
- NAT/NAPT and port forwarding

Quality of Service (QoS)

- Microsoft Lync quality of experience (QoE) monitoring
  - Round Trip Delay
  - Jitter (max, mean)
  - Packet Loss (max, mean)
  - Packet Loss Rate (max, mean)
  - Burst (density, gap density)
  - MOS-LQ, MOS-CQ
  - Signal/Noise Level
- Bandwidth management
- Call Admission Control (CAC) (deny excessive calls based on static configuration for bandwidth management)
- P-time mediation for rate limiting
- Per-call statistics
- Diffserv/DSCP marking

Packet Network Time Source

- Network Time Protocol (NTP) per RFC1708

Server Module

Memory

- 4 GB of DDR3 with ECC (Error-Correcting Code)

CPU

- Intel® Celeron™ P4505 1.8 GHz processor

Capabilities

- Certified as a Microsoft Lync 2010 and Lync 2013 Survivable Branch Appliance
- Certified as Microsoft Lync EGW, Microsoft Lync SBC, Microsoft Exchange UM

- Maximum number of concurrent calls deployed as Microsoft Lync 2010 and Lync 2013 Survivable Branch Appliance with Intel® Atom™ D525 processor: 40

- Maximum number of concurrent calls deployed as Microsoft Lync 2010 and Lync 2013 Survivable Branch Appliance with Intel® Celeron™ P4505 1.8 GHz processor: 100

- Validated as interoperable with BroadWorks Release 19.sp1 and compatible with BroadWorks Releases 18.0, 18.sp1, 19.0 SIP interface

Additional Hardware Specifications

Front Panel

- Status Indicators Front Panel LEDs
  - Power
  - Alarm
  - Peer Node
  - Ready

- Dual USB 2.0 interface for main SBC board

- Additional dual USB 2.0 ports for ASM (optional)

- WAN and LAN Interfaces
  - 2 x 10/100/1000 BASE-T Ethernet ports with VLAN support
  - Auto-MDIX

Rear Panel

- Physical PSTN Interfaces
  - Up to 2 T1/E1 CAS/PRI digital ports
  - Up to 12 BRI digital ports
  - Up to 24 FXS (Foreign eXchange Station) analog ports
  - Up to 24 globally compliant FXO (Foreign eXchange Office) analog ports

Chassis

- 1U, rack mount
- Inches: 17.5" wide x 1.75" high x 12" deep
- Centimeters: 44.4 wide x 4.4 high x 30.5 deep

Chassis Mounting Options

- EIA-standard 19" equipment rack with 2 or 4 posts

AC Power Option

- Input Voltage: 100-240 VAC nominal, auto-switching, 47-63 Hz
- AC Maximum Input Current: 1.25A at 115 VAC; 0.63A at 230 VAC
- AC Input Voltage Range (Nominal): 100-127 VAC and 200-240 VAC
- Max Power Consumption: 144 W

Cooling System

- Internal forced convection

Weight Maximum Fully Populated

- 12.5 lbs. (5.67 kg)

Environmental

- 5 to 40˚ C Operating
- -40 to 70˚ C Storage
- 5 to 85% Non-Condensing Operating Humidity

About Sonus Networks

Sonus Networks, Inc. is a leader in IP networking with proven expertise in delivering secure, reliable and scalable next-generation infrastructure and subscriber solutions. Sonus products include session border controllers, policy/routing servers, and media and signaling gateways. In 2012, Sonus launched its Partner Assure program to provide turnkey sales support and training to authorized resellers around the world. To date, more than 100 companies have joined the Partner Assure program. For more information, visit www.sonus.net.

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