The Sonus SBC 1000™ Gateway

The Sonus SBC 1000 Gateway provides small and medium-sized enterprises with legacy voice infrastructure a secure, reliable path to VoIP connectivity with a full range of SIP service provider environments. The SBC 1000 Gateway is a complementary offering to the standard SBC 1000 offering for primarily TDM-SIP use cases, with growth for IP-IP call flows when needed. The SBC 1000 Gateway supports any-to-any connectivity between FXS, FXO, BRI, PRI, and SIP endpoints or devices, enabling rapid migration to SIP-based networks while retaining existing PBXs or analog devices. The Sonus SBC 1000 Gateway helps 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 Gateway is designed for ease of deployment and growth, and advanced features can be remotely enabled via a simple license, eliminating the need for a truck-roll and an on-site technician. The Sonus SBC 1000 Gateway also features a wide range of I/O and call capacities as well as built-in survivability for TDM, FXx, and SIP devices, so calls go through even if the wide area network (WAN) goes down.

The Sonus SBC 1000 Gateway

System Capabilities

- Sessions
  - Maximum number of TDM/FXx-to-SIP calls: 128
  - Maximum number of total concurrent calls: 192

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

- Encryption
  - Maximum number of TLS sessions: 192
  - Maximum number of SRTP sessions: 128

- Business Continuity
  - Bypass relays (PRI-PRI, FXS-FXO) for emergency calls (e.g., 911)
  - Site survivability for SIP clients through built-in SIP registrar
  - PSTN fallback when WAN is down
  - Multiple SIP trunking service provider support for redundancy
  - 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 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
- 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)
  - RADIUS

Media Services

- G.711, G.722, G.722.2 (AMR-WB), G.723.1 (5.3 kbps, 6.3 kbps), G.726 (32 kbps), G.729A/B (8 kbps), T.38

- 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 and media bypass

- 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 CAS/PRI/BRI/FXS/FXO
- CAS/PRI/BRI/FXS/FXO to/from CAS/PRI/BRI/FXS/FXO
- FXS long loop support (up to 3km)

Protocol Support

- SNMPv2c
- NTP
- HTTPS
- RTP/RTCP, SRTP/SRTCP
- SIP over UDP, TCP, TLS
- DNS
- IPv4, IPv6, and IPv4/IPv6 interworking
- RIPv2, 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
- 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)
- One number fax support (single DID for voice and fax)
- 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
- 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)
- NAT/NAPT and port forwarding, NAT traversal

Quality of Service (QoS)

- 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

Microsoft® Skype® for Business Support

- Qualified as an Enhanced Gateway for Lync 2013, Lync 2010 & Skype for Business deployments
- Skype for Business, Lync 2013, and Lync 2010 qualified for SBC and E-911 ELIN Gateway
- Microsoft Office 365® Exchange Unified Messaging qualified
- Microsoft SCOM support

Additional Hardware Specifications

Front Panel

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

- Additional dual USB 2.0 ports for ASM (optional)

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

- Physical PSTN Interfaces
  - Up to 2 T1/E1 CAS/PRI digital ports

Rear Panel

- Physical PSTN Interfaces
  - Up to 2 T1/E1 CAS/PRI digital ports
  - Up to 4 BRI digital ports
  - Up to 24 FXS (Foreign eXchange Station) analog ports
  - Up to 4 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

Available Feature Options

- SIP - SIP signaling and media services, including transcoding, IPsec, and video passthrough / SIP Registrations

- Voice quality reporting

- Call forking

- Active Directory® Integration

- Routing protocols

- Microsoft© Skype for Business -related Quality of Experience (QoE) feature

- BroadSoft® BroadWorks® local survivability

SBC 1000 Gateway Model	Description
SBC-1K-R-2P-FXSFXO-GW	SBC 1000 Gateway with 1 PRI, 4 FXO & 4 FXS. Licensable growth to 2 PRI
SBC-1K-R-4P-FXSFXO-GW	SBC 1000 Gateway with 2 PRI, 4 FXO & 4 FXS. Licensable growth to 4 PRI
SBC-1K-R-BRI-GW	SBC 1000 Gateway with 4 BRI
SBC-1K-R-FXS-GW	SBC 1000 Gateway with 24 FXS
SBC-1K-R-2P-20FSFO-GW	SBC 1000 Gateway with 1 PRI, 4 FXO and 12 FXS. Licensable growth to 2 PRI, and 20 FXS

About Sonus Networks

Sonus brings the next generation of Cloud-based SIP and 4G/VoLTE solutions to its customers by securing mission-critical traffic for VoIP, video, IM, and online collaboration. With Sonus, enterprises can secure and prioritize real-time communications, while service providers can deliver reliable, secure real-time services for mobile, UC, and social applications. Sonus offers an award-winning portfolio of hardware-based and virtualized Session Border Controllers (SBCs), Diameter Signaling Controllers (DSCs), Policy/Routing servers, and media/signaling gateways. Visit www.sonus.net or call 1-855-GO-SONUS. Follow Sonus on Twitter, Facebook, LinkedIn, YouTube and Instagram.

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