

## Media Services

- Transcoding up to 600 concurrent calls: G.711 (64 kbps – A-law, Mu-law), G.723.1 (5.3 kbps, 6.3 kbps), G.726, G.729A/B (8 kbps)
- T.38 with CNG tone detection
- DTMF/RFC2833; Inband DTMF
- Voice Activity Detection (VAD)
- G.168 Echo Cancellation with standard 128 ms tail length
- Private-side NAT traversal
- Comfort Noise Generation (RFC 3389)
- 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)

## 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 header manipulation
- Private-side NAT traversal

## Packet Network Time Source

- Network Time Protocol (NTP) per RFC1708

## Redundancy

- Redundant power supply

## Routing/Policy

- Maximum number of call route entries: 15,000
- 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)
- Detects proxy failure and route to alternate paths
- Re-route on failure based on full Cause Code rerouting on T1/E1 trunks
- Lync E911 support; SIP/PIDF-LO passthrough and ELIN Gateway

## Protocol Support

- SNMP
- NTP
- UDP, TCP, TLS
- Https
- DNS
- RTP/RTCP, SRTP/SRTCP
- DHCP server
- RIP, OSPF as dynamic IP routing protocols

## Q-KON SA Overview

Q-KON South Africa was formed in 2005 to focus on the deregulating South African telecommunication market. Today we develop, market, & implement VSAT, microwave, and VoIP products and value added services for the telecommunication, service provider, mining, banking, and rural connectivity markets.

Q-KON SA (2005), and Q-KON (1989) has been the distributor for Sonus, (previously NET and Quintum), VoIP products since 2002. In 2011 Q-KON SA was awarded the Gold Distributor Award by NET at their Partner Summit Awards; as acknowledgement of sales volume, level of technical support and continuous value-add for its distribution of the Tenor, VX and UX VoIP product ranges.

## Our Value Add

As a distributor of niche products, we have an unwavering believe in our responsibility to provide Value Adds to our customers:

- Special programs (some developed in-house) to support our product offering - e.g. Lync Recording Solution or Central Management System for SBA's or SBC's
- Wide stock holding - 60 day usage
- Free proof-of-concept programs
- Convenient local equipment repair process
- Country-wide equipment supply, installation, & support
- 8 Years of certified training to the industry - Tenor, UX, SBC & VX product series
- Pre-sales support, post-sales support, maintenance units, and custom SLA's

## Our Experience

Q-KON's experience with VoIP started with the networks we deployed in Africa, long before VoIP was deregulated in South Africa in 2005. This ensured that we could quickly take the lead with VoIP engineering capabilities, deployments, and support.

Some recent confirmation of our experiences includes:

- QKON SA awarded Quintum's fastest growing distributor in EMEA in 2006
- In 2010 NET launched their UX product series to the African market, from the Q-KON SA stand, at Microsoft TechEd 2010
- In November of the same year Q-KON SA installed the first UX in Africa
- April 2011: Q-KON SA was invited to NET HQ in SF USA, and presented with the NET Gold Distributor award
- November 2011: NET joins Q-KON SA again at TechEd 2011
- January 2012: NET ships the first UX1000 products outside of the UK and USA – to Q-KON SA
- April 2012: Q-KON SA is the first distributor outside the UK and USA to qualify for the NET Assembly Distributor program
- May 2012: Q-KON SA becomes the first distributor outside of the UK and USA who has a certified trainer that can provide local UX training certifications
- April 2013: Sonus introduces the high-end SBC5x00 series to the South African market, from the Q-KON SA stand, at Microsoft TechEd 2013



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## The Sonus SBC 2000™ Session Border Controller

Communications devices are growing smaller and smarter, so we made a session border controller (SBC) that was smaller and smarter too. The Sonus SBC 2000 (formerly NET UX 2000) is an advanced SBC designed to help mediumsized enterprise networks (i.e., 50 to 5000 employees) safely and cost-effectively embrace the new world of SIP-based communications such as Voice over IP (VoIP). The SBC 2000 delivers all of the features you would expect from the Sonus family of SBCs, including robust security, high availability and proven interoperability with leading business solutions like Microsoft Lync Server. The Sonus SBC 2000 also does something you wouldn't expect: it allows calls to go through even when your WAN goes down through its unique Survivable Branch Appliance functionality.



Sonus SBC 2000

### System Capabilities

- **Sessions**
  - Maximum number of TDM-to-SIP calls: 480
  - Maximum number of SIP-to-SIP calls: 600
  - Maximum number of transcoded sessions (based upon codec type): 600
  - RTCP sessions scale 1:1 with RTP sessions
- **Call Set-Up**
  - Maximum call setup rate: 4 cps
- **Registrations**
  - Maximum number of registered users: 1,000
- **Encryption**
  - Maximum number of TLS sessions: 600
  - Maximum number of SRTP sessions: 600
- **Business Continuity**
  - PSTN fallback when WAN is down
  - Survivable Branch Appliance (SBA) for Lync
  - Multiple SIP trunking service provider support for redundancy
  - Site survivability through built-in SIP registrar

### Management Capabilities

- **Operations, Administration & Management**
  - Single, secure web-based GUI
  - REST-based programmatic interface to remotely manage multiple SBC 2000s
  - 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 streaming through REST
  - CDR Reporting
  - Microsoft SCOM support
  - Syslogs and local logging for troubleshooting, with support for free Sonus LX syslog server and log parser tool
- **Authentication**
  - Local user (User name/password)
  - Active Directory
  - RADIUS

### 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)
- Line rate malformed packet protection
- Access Control Lists (ACLs)

### Quality of Service (QoS)

- Voice quality monitoring
  - Jitter
  - Delay
  - Packet Loss
- 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

### Server Module

#### Memory

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

#### CPU

- Intel® Core™ i7 2.53 GHz processor

#### Storage

- 160 GB Serial ATA (SATA) HDD server

#### Capabilities

- Maximum number of concurrent calls deployed as Microsoft OCS 2007 R2 Mediation Server: 240
- Maximum number of concurrent calls deployed as Microsoft Lync 2010 Survivable Branch Appliance: 240



### Additional Hardware Specifications

#### Front Panel

- Status Indicators Front Panel LEDs
  - Reset
  - Power
  - Alarm
  - Peer Node
  - Ready
- Dual USB 2.0 interface for main UX board
- Additional dual USB 2.0 ports for ASM (optional)
- WAN and LAN Interfaces
  - 4 x 10/100/1000 BASE-T Ethernet ports with VLAN support
  - Auto-MDIX
- Administration Port
  - 1 x 10/100/1000 BASE-T Ethernet port

#### Rear Panel

- Physical PSTN Interfaces
  - Up to 16 T1/E1 – 2 x Two, Four or Eight T1/E1 spans per digital module
  - Up to 48 FXS ports – 2 x 24 ports

#### Chassis

- 1U, rack mount
- Inches: 17.5" Wide x 1.75" High x 21" Deep
- Centimeters: 44.4cm Wide x 4.4cm High x 53.4cm Deep

#### Chassis Mounting Options

- EIA-standard 19-inch equipment rack with 2 or 4 posts (for 4-post racks: mounting equipment is provided with a depth of 24 or 30 inches)

#### AC Power Option

- Input Voltage: 100-240 VAC nominal, auto-switching, 47-63 Hz
- AC Maximum Input Current: 5.0A at 115 VAC; 2.5A at 230 VAC
- AC Input Voltage Range (Nominal): 100-127 VAC and 200-240 VAC
- Output: 300 W-AC: +5V/20A, +12V/24A, -12V/0.6A, +3.3V/20A, +5VSB/3A
- Max Power Consumption: 300W

#### Operating Altitude

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

#### Cooling System

- Internal forced convection

#### Weight Maximum Fully Populated

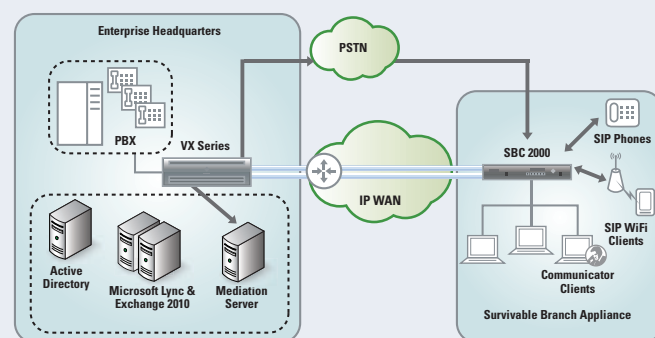
- 23 lbs. (10.43 kg)

#### Environmental

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

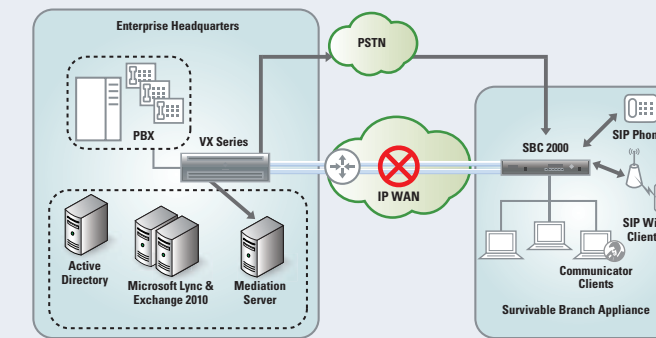
## COMMON APPLICATION SCENARIOS

### Enterprise Branch Office Connectivity and Survivability For Microsoft Lync Server 2010



#### Normal Mode

In the normal mode, the SBC 2000 appliance in the branch office is connected to the Microsoft Lync Server 2010 in the datacenter over a WAN network. IP phones are registered with the SBC 2000. Microsoft Lync Clients 2010 are registered with the integrated Microsoft Survivable Branch Appliance.



#### WAN Outage

The SBC 2000 Survivable Branch Appliance (SBA) provides basic voice services to branch office users during a WAN outage. During WAN outage, the SBA appliance manages the intrabranch voice calls and IM sessions as well as inter-branch communications and voice mail retrieval over PSTN.

