



# TAILORED

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SIP solutions bespoke for your business

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# SIP CONNECT

changing the way businesses communicate

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UK businesses have traditionally relied upon fixed-line voice technology for their voice communications infrastructure, facing the cost and time-consuming inconvenience of ISDN trunk provisioning each time new circuits are required as a result of business expansion or change.

In the last decade, Voice over Internet Protocol (VoIP) technology has matured to the point at which it has become a proven and trusted alternative to fixed-line communications. As a result, many forward-thinking businesses are turning to SIP (Session Initiation Protocol) trunks, a VoIP technology that delivers enterprise-quality voice communications along with a host of additional benefits and cost savings that fixed-line solutions can't offer.

Spectrum Telecoms' 'SIP Migration Simplified' gives you the facts about SIP: what it is, how it works, the migration process for businesses and the benefits that SIP trunks offer.

At Spectrum we've built a sound and enviable reputation for our technical experience and expertise and unrivalled commitment to customer service. As your telecoms partner we'll take the time to listen to your needs and gain a thorough understanding of your business, enabling us to provide a tailor-made SIP solution that will deliver the benefits you need today and the evolution path you need to meet the challenges of tomorrow.

the future of business communications

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Spectrum Telecoms' SIP Connect seamlessly integrates with your existing voice and data infrastructure, replacing traditional fixed-line voice communications with enterprise-class IP connectivity. With SIP Connect you retain the option to connect to and route voice traffic over the Public Switched Telephone Network (PSTN) if necessary, otherwise your voice traffic is delivered securely via the resilient, high-speed and state-of-the-art Gamma network, safely shielded from the public internet.

SIP Connect is a fully inclusive solution; Spectrum takes care of every aspect of the migration for you and there's no requirement to change your existing DDI ranges – unless you want to. We'll meticulously plan, design and implement a resilient, secure SIP solution that's perfect for your business, ensuring that the integration of SIP trunks with your existing comms infrastructure is problem-free, and largely unnoticeable by end-users who will continue to make and receive calls just as they always have.

Spectrum's SIP Connect delivers a proven, viable and cost-effective alternative to traditional fixed-line voice services. SIP Connect is quick to provision, feature-rich and is backed by stringent SLAs. The service can be delivered over a range of connectivity options and where sufficient bandwidth is provided, allows migration to a fully converged network – a key component to any Unified Communications strategy.

# SIP EXPLAINED

## The Key Benefits

### Guaranteed Resilience, Security & Quality Of Service

Spectrum Telecoms' SIP Connect solution uses Gamma highly acclaimed SIP Core and offers a range of delivery and resilience options, most deliveries are entirely discrete from the public internet network using your own existing Wide Area Network connectivity or JANET connection. For single site deployments back-up failover routing is provided, and for the ultimate 'belt and braces' resilience our dual delivery service allows for multiple delivery points either as a load balanced or as a secondary back up route..

### Network Convergence

SIP fully integrates with existing data networks allowing a business to unify and simplify its voice and data infrastructure, securely delivering time-critical applications such as voice and video alongside other business data with no loss of quality or integrity.

### Total Control Of Your Voice Infrastructure

SIP trunks provide the perfect opportunity to rationalise the number of voice circuits across your business and to remove unnecessary PBX (Private Branch eXchange) equipment, reducing line rental and equipment maintenance costs whilst leaving you fully in control of the number ranges used by your business and any associated call features or routing.

### Business Flexibility 'On Tap'

SIP is as flexible as your business. You can change, retain or add to your existing DDI ranges with no problem. Numbering schemes are truly geographically independent; if your business relocates from London to Birmingham you can retain the existing 'London' numbers without incurring call-forwarding charges or stationery re-printing costs. SIP channels can be provisioned or ceased in a fraction of the lead-time associated with traditional voice circuits.

### Effortless Business Continuity

Inbound calls across multiple sites, SIP allows calls to be automatically or manually re-routed at a moment's notice in the event of a site failure using a process that is invisible to your customers.

### Significant Cost Reduction

The ongoing rental costs of SIP trunks is significantly lower than that of traditional ISDN2 and ISDN30 trunks, and calls between geographically diverse SIP-enabled sites are free – handy for businesses with sites spread nationwide or even internationally.

# ENSURING SIP IS THE RIGHT CHOICE

for your business

Spectrum Telecoms are experts when it comes to ensuring that SIP is the right choice for your business. We'll conduct a comprehensive site survey, assessing your existing communications infrastructure and examining in detail the three main areas which determine how beneficial SIP migration will be for your business.

As part of this consultative process, Spectrum will review with you:

## The Suitability Of Your Existing Voice Infrastructure

Spectrum will assess the compatibility of your PBX systems with IP connectivity and therefore SIP trunks. Many modern PBXs are already 'IP ready', but even legacy PBX systems may be utilised via the addition of an IP/TDM gateway. Once Spectrum has confirmed that your existing voice infrastructure conforms to the standards required for successful SIP migration we'll provide you all the relevant information and costs as regards volume licensing, Session Border Controller (SBC) requirements and the technical work necessary to prepare your business for SIP migration.

## The Ability Of Your Network Connectivity To Handle Sip

We will review your WAN's current bandwidth and connectivity to ensure that SIP trunks can be incorporated to cope with your current and predicted call traffic, We can also advise the most appropriate set up to ensure that time-critical voice call data is prioritised, guaranteeing enterprise-class call quality.

## Your Current And Projected Future Voice Requirements

Analysing your business's current simultaneous call traffic and business number usage along with your expectations as to how these are likely to change in accordance with future business requirements will allow Spectrum to provide as accurate a proposal as possible regarding the likely cost and effort required to implement a beneficial SIP migration.

# THE SIP MIGRATION PROCESS

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## How Spectrum Makes SIP Migration Simple

Spectrum Telecoms take the risk out of SIP migration. When you choose Spectrum to realise the benefits of SIP for your business, you're choosing a team of experienced and expert technical specialists who are committed to ensuring that the migration process is entirely transparent and has no negative impact on the running of your business

Your SIP migration will be meticulously planned, and responsibility for the smooth and successful implementation will rest with your own dedicated Project Manager. Every aspect of the SIP Connect solutions we supply is of the highest quality and has been tested and proven in real-world scenarios.

Nevertheless, once you have engaged Spectrum Telecoms to manage your SIP migration we are able to provide a comprehensive 'proof-of-concept' trial of the new technology to ensure that it lives up to your expectations and fully meets the requirements of your business.

At Spectrum Telecoms we're committed to providing our clients with innovative, flexible and cost-effective telecoms solutions that will meet their needs now and into the future. We're here to ensure that your SIP migration delivers the benefits and cost savings of world-class IP telephony with the minimum of fuss, backed up by our unrivalled commitment to customer support for your total peace of mind.

# UC ENTERPRISE GATEWAYS

THE SONUS SBC - ALL-IN-ONE BRANCH OFFICE NETWORKING APPLIANCE



Now you can cost effectively deploy SIP and integrated UC solutions such as Lync without the cost of upgrading your PBX.

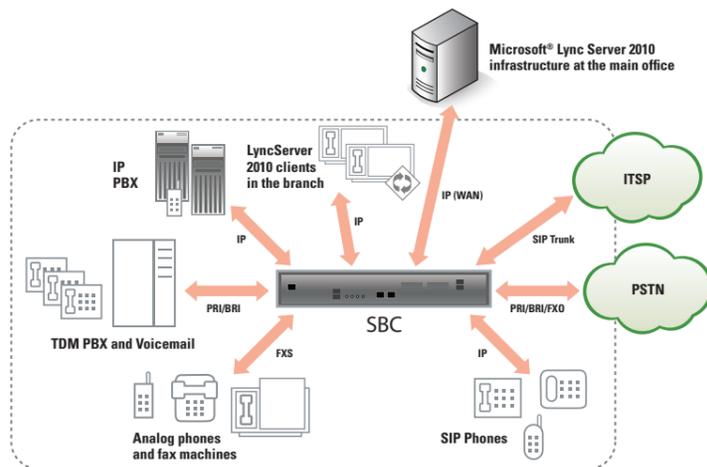
## UNIFIED COMMUNICATIONS AND VOICE-GATEWAY SERVICES

The Sonus SBC appliance offers extraordinary service integration of Unified communications to any size branch office. Businesses can enjoy the benefit of deploying a single device for all networking and communication needs and save both capital and operational expenses.

By supporting a variety of protocols, advanced security, codec transcoding, and data services, the Sonus SBC 2000 enables a distributed enterprise to cost-effectively implement SIP and Unified communications across the enterprise.

routing protocols, GigE switching, T1/E1, WAN and LAN ports, Firewall with traffic inspection, Session Border Controller (SBC), media processing through advanced high-density Digital Signal Processors (DSPs), PSTN gateway, and an Application Solutions Module (ASM) for hosting third party applications.

The Sonus SBC 2000 is fully managed using a Web-based management interface with remote management capability. It is an ideal solution for remote sites/branch offices that have minimal IT support. The modular architecture allows deployment flexibility for different size locations and can easily scale up for future expansion. It can be deployed for a variety of applications, for example next-generation VoIP and Unified Communications; SIP Trunking; Wideband (HD Voice) transcoding; Multi-service Business Gateway (MSBG); and for multi-service applications like Pseudo-wire.



## INTEGRATED ENTERPRISE SBC OFFERS OPTIMIZED SIP TRUNKING

With an integrated enterprise SBC (Session Border Controller), the Sonus SBC 2000 offers optimized SIP Trunking services for ITSP (Internet Telephony Service Provider) connectivity.

- Complete enterprise/ ITSP demarcation point services, such as network topology hiding, transcoding, IP transport conversion (TCP <-> UDP), and signaling/media encryption (TCP<->TLS/RTP <->SRTP)

- Multi-ITSP registration, with re-routing on excess cost or loss of service

- Built-in NAT1 (Network Address Translation) prevention of DDOS and DOS (Denial of Service) attacks, and CAC (Call Admission Control) to prevent unauthorized access and to maintain secure communications.

Furthermore, future enhanced enterprise Sonus SBC security and interoperability functions may be applied as a simple software upgrade.



## HIGHLY FLEXIBLE LOW TO MID-RANGE TDM AND LYNC DEPLOYMENT

The Sonus Unified Exchange 2000 Series (SBC 2000) is a modular multi-function, single box appliance that delivers cost savings, reduces management complexity, and increases reliability for branch office networking and communications needs. The core features include Layer 2 and Layer 3 based

<b>Physical PSTN Interfaces</b>	
Digital Modules	8 T1/E1 spans per module
<b>Applications Solutions Module</b>	
WAN and LAN Interfaces	<ul style="list-style-type: none"> <li>• 4 10/100/1000 BASE-T</li> <li>• Auto-MDIX</li> <li>• 1 10/100/1000 Base-T management port</li> </ul>
<b>Networking Interfaces</b>	
CPU	Intel® Core™ i7 @2.53GHz
Memory	4 GB DDR3 with ECC
Storage	160 GB SATA HDD Blade Server
<b>Software Features</b>	
Any-to-Any Switching	<ul style="list-style-type: none"> <li>• SIP (UDP, TCP, TLS)</li> <li>• PRI, Q.SIG</li> <li>• Media Encryption (TLS, SRTP)</li> </ul>
Call Routing	<ul style="list-style-type: none"> <li>• Active Directory/LDAP based call routing</li> <li>• Routing based on quality metrics</li> <li>• Least cost routing</li> <li>- Event based Action Set</li> </ul>
Supplementary Services	<ul style="list-style-type: none"> <li>• Call hold</li> <li>• Call Transfer – Blind and Assisted</li> <li>• Call Forward</li> </ul>
<b>Signaling</b>	
TDM Signaling	ISDN: AT&T 4ESS, AT&T 5ESS, Nortel DMS-100, Euro ISDN (ETSI 300-102), QSIG, NTT InsNet (Japan), and ANSI National ISDN-2 (NI-2)
<b>Voice Features</b>	
Codecs	<ul style="list-style-type: none"> <li>• G.711 (64 kbps – A-law, Mu-law)</li> <li>• G.723.1 (5.3 kbps, 6.3 kbps)</li> <li>• G.729 A&amp;B (8 kbps)</li> </ul>
Call Type Detection	Automatic call type detection – voice, fax, or modem
Call Progress Tones	Generate call progress tones – ring-back
Advanced voice quality features	<ul style="list-style-type: none"> <li>• G.168 Echo Cancellation up to 128 ms tail length</li> <li>• Voice Activity Detection (VAD)</li> <li>• Comfort Noise Generation</li> </ul>
Fax over IP	T.38 with CNG tone detection
Voice Quality Monitoring	Jitter, Delay, and Packet Loss
<b>Session Border Controller</b>	
Security	<ul style="list-style-type: none"> <li>• Encryption (TLS, SRTP)</li> <li>• Built-in VoIP firewall</li> <li>• Denial of Service mitigation</li> <li>• DNIS, CLID, call type pre-authentication</li> <li>• Topology Hiding</li> </ul>
Branch Survivability	Call Admission Control
<b>Management</b>	
OA&M	HTTP, HTTPS Syslog SNMP v2
Authentication	MD5 digest authentication Multilevel Access Control



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