

Sangoma SBCs – Keeping Your VoIP Network Secure

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- Portfolio of SBCs
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- Summary

Who are Sangoma?

- Industry pioneer with over 25 years of experience in communications hardware and software
- Publicly traded company since 2000
 - TSXV: STC
- One of the most financially healthy companies in our industry
 - Growing, Profitable, Cash on the Balance Sheet, No Debt
- Mid-market sized firm with around 70 staff in all global territories
 - Offices in Canada (Toronto), US, EU (UK), APAC (India), CALA (Miami)
- World Wide Customer base

Broad Line of Great Products

- Voice Telephony Boards
 - Analog/digital/hybrid, WAN, ADSL
- Session Border Controllers
- Microsoft Lync
- VoIP Gateways
 - Net Border Carrier Gateways
 - SS7, PRI, R2
 - Vega Enterprise Gateways
 - PRI, PR2, Analog, BRI
- Call Center Software
 - NetBorder Express
 - Call Progress Analyzer
- Transcoding (boards/appliances)
- Fiber connectivity (STM1)
- Wireless products



SIP TRUNKING & SBC MARKET

SIP Trunking Introduction

- Replace physical PSTN trunk with IP based connection
 - Lower cost
 - UC services
 - Channel flexibility
 - Disaster recovery

SIP Trunking is driving SBC uptake

UK SIP Market

- SIP market growing fast:
 - End 2013 1.1M SIP trunks. Up 200K in last 6 months *
 - Hosted VoIP 1.3M users *
- ISDN market shrinking
 - ISDN channels 3.6M 2011 to 3.3M 2012 ^

Growing SIP market is driving SBC uptake

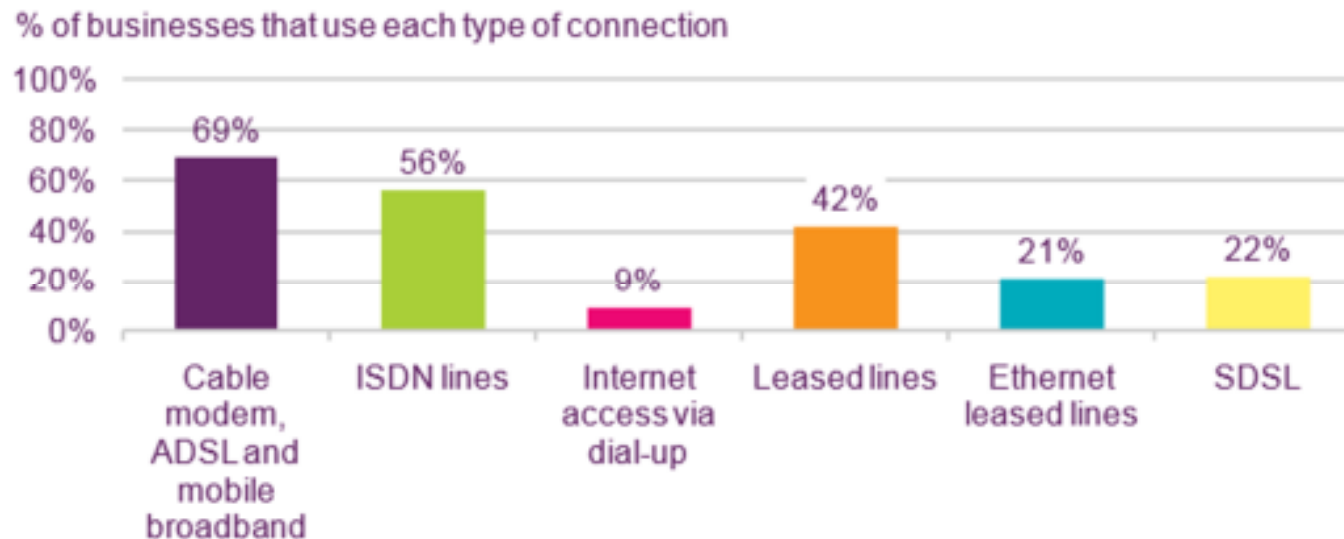
* source: Illume Consulting

^ source: Ofcom

UK SIP Market

- SIP growth facilitated by availability and reducing costs of connectivity
 - Growth ethernet big affect

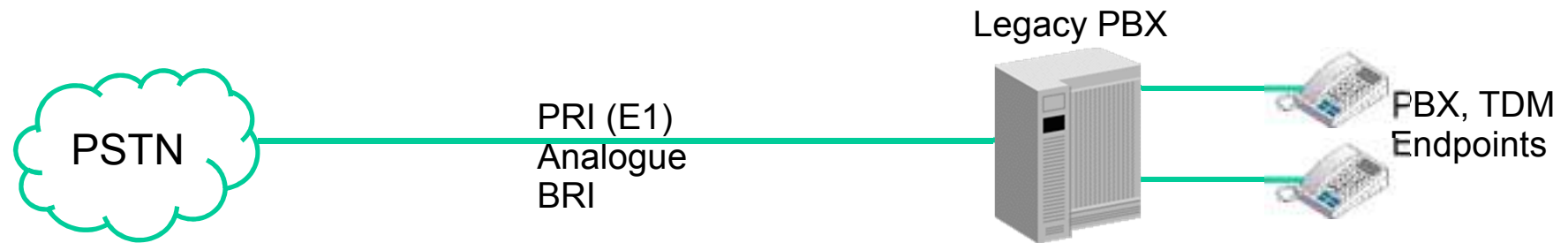
Figure 5.46 Type of wide-area network connectivity used by businesses



Source: Ofcom Business Connectivity Services Review

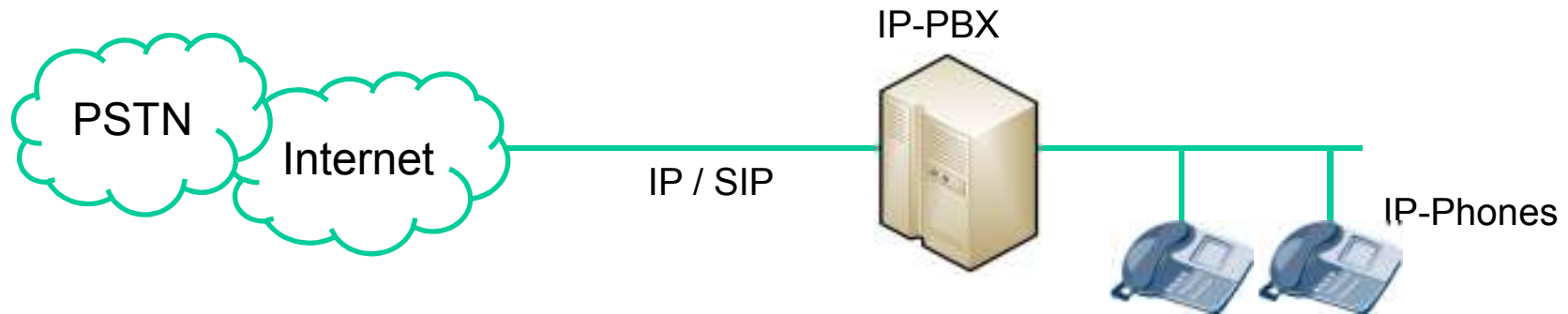
SBCS DEMYSTIFIED

Legacy TDM Connections



- TDM based phone calls take place on approved equipment connected to private networks run by the telco
- Nothing else connected
- Fixed protocol

Why VoIP Brings More Risk



- VoIP often carried across public networks
- Calls can be placed and terminated on many devices – IP-Phones, smart phones, desktops, etc.
- Threat level more like that of any internet device
 - Would you access the internet without a firewall?

SBC Is The Front Door To Networks

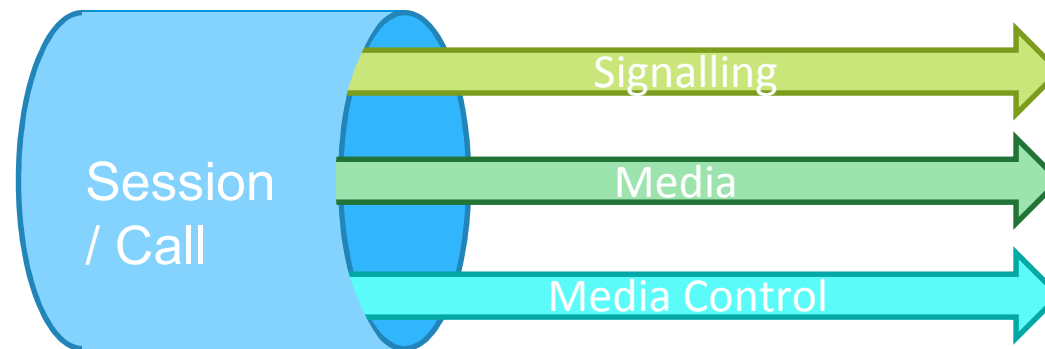
- SBC controls entry (or not) to a network
- Directs communication between end devices
 - This communication is called a session
- SBC can do this because it sits at the border between two networks



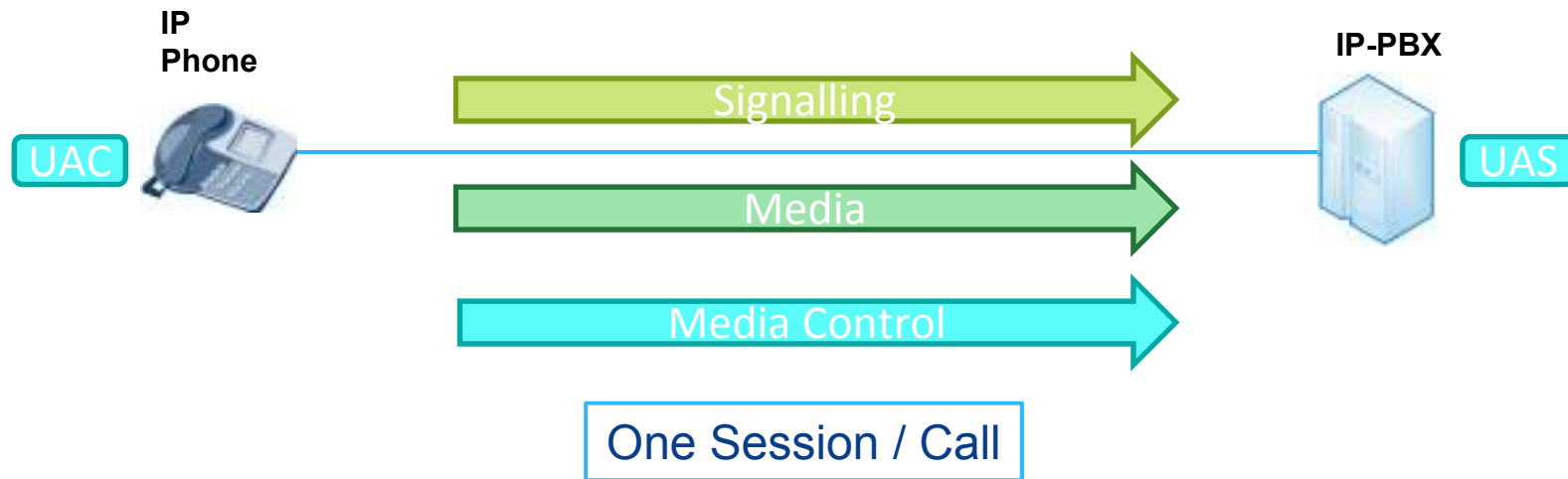
Session	Communication between two SIP devices
Border	SBCs work at the border of networks
Controller	SBCs control the sessions

SIP Session

- Signalling: Sets call path up, negotiates codec to be used
- Media: Transports the voice or video
- Media Control: Collect information on voice quality

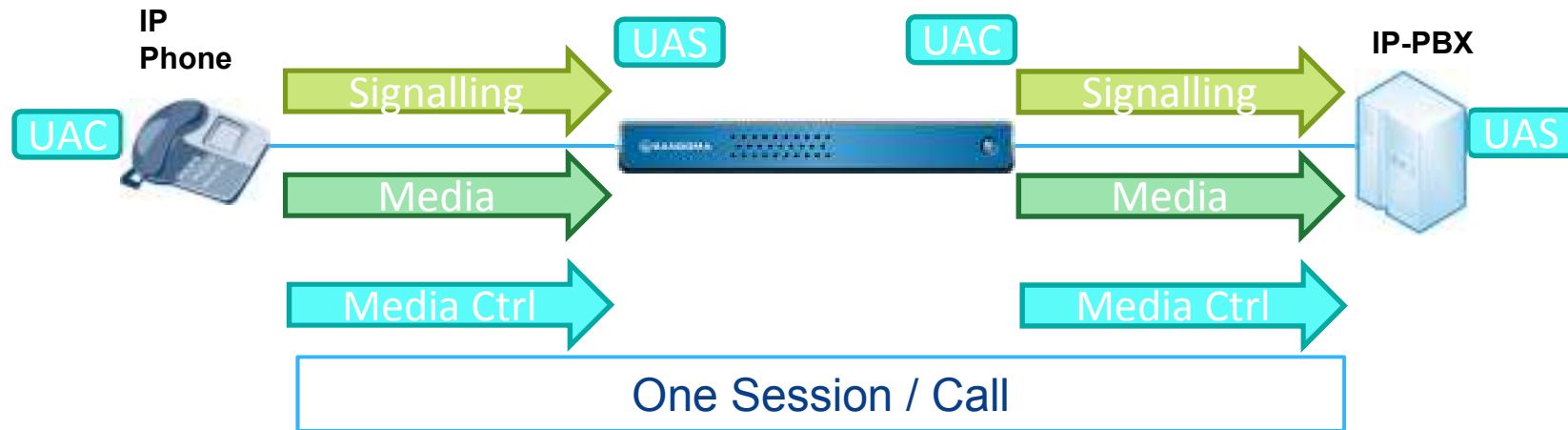


Regular Call (No SBC)



- All three elements of a session are direct between endpoints

SBC is a B2BUA



- SBC is a Back-to-Back User Agent
 - B2BUAs terminate sessions and re-initiates a new session on the other side
 - SBC is in the path for all calls
 - SBC controls all the elements of the session

THE ROLE OF THE SBC

SBCs Protect the Enterprise Network

Three ways that SBCs protect the network:

1. DoS Protection. Prevent Denial-of Service (DoS) attacks from affecting network performance.
2. Topology Hiding. Hide the topology of the network. This makes it much harder for hackers to access the system.
3. Encryption. Encrypt the communications, both signalling (SIP) and media (RTP).

SBCs Provide Call Access Control

Three ways that SBCs allow secure deployment:

1. BYOD. Users within an enterprise now expect to be able to make calls on many different devices. Malicious apps on those devices can facilitate toll fraud.
2. Toll Fraud Detection. Only allow authorised users.
3. Call Policies. Manage policies that define what devices and users are allowed to make certain call types.

SBCs Allow Easy Interop

Three ways that SBCs allow simple deployment:

1. SIP Normalisation. Different vendors have different SIP implementations. SBCs can translate between these SIP variations.
2. Transcoding. Converting between different codecs for the media stream.
3. Enable SIP Trunking. SIP trunking saves money and brings flexibility.



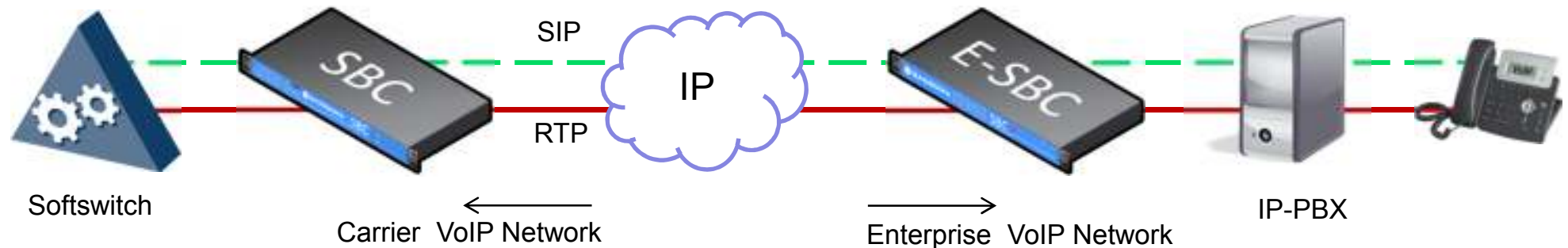
Firewall Is Not Enough

- Traditional firewalls cannot
 - Prevent SIP-specific overload/SIP DoS
 - Open/Close RTP media ports in sync with SIP signaling
 - Track session state and provide uninterrupted service
 - Perform internetworking or security on encrypted sessions
 - Solve multi-vendor SIP interoperability
 - Topology Hiding
- SBCs do all of the above

BEST PRACTICES

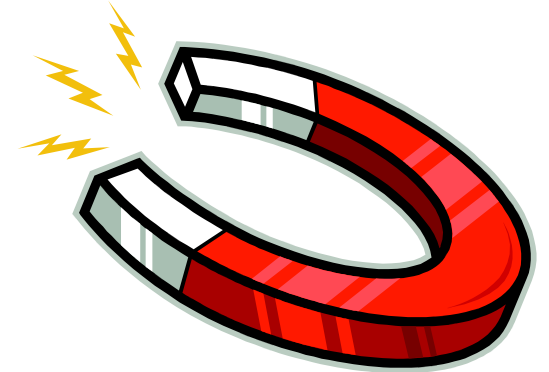
Best Practices

- Everywhere a VoIP Network needs to interface to another VoIP Network, you need an SBC
- Same rule with IP Network and Firewalls really
- SBC are required in both Carriers and Enterprise Networks



Integration at the Edge has its Advantages

- Because SBC 'sees' all traffic, they have evolved to be much more than interop/security devices
- Migration – Intelligent call routing for VoIP
- Lawful intercept – Call forking for recording devices
- Quality of Service reporting
- Billing
- Intrusion Management
- Session Border Controllers have become essential in VoIP networks

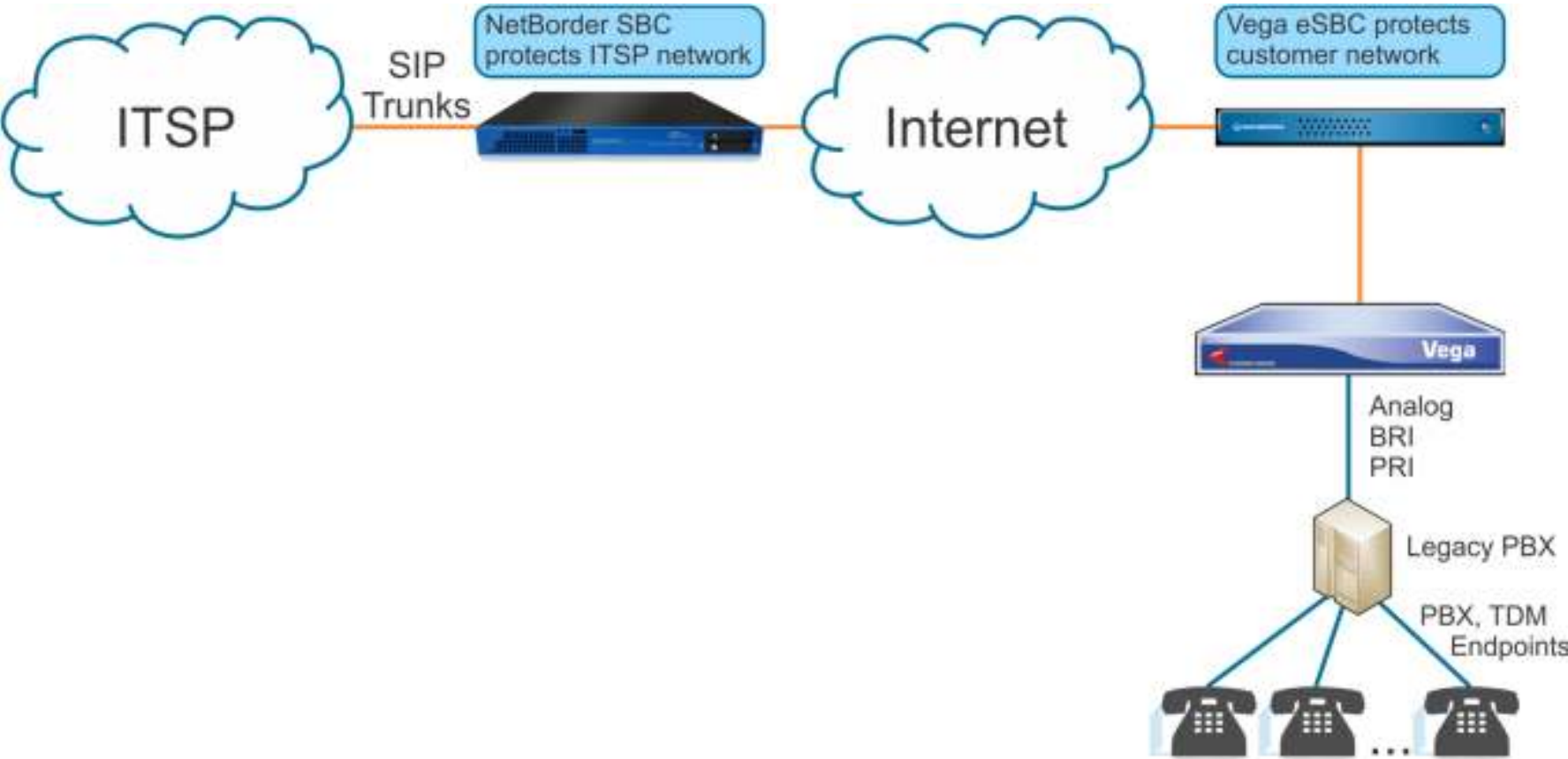


BUSINESS APPLICATIONS AND USE CASES

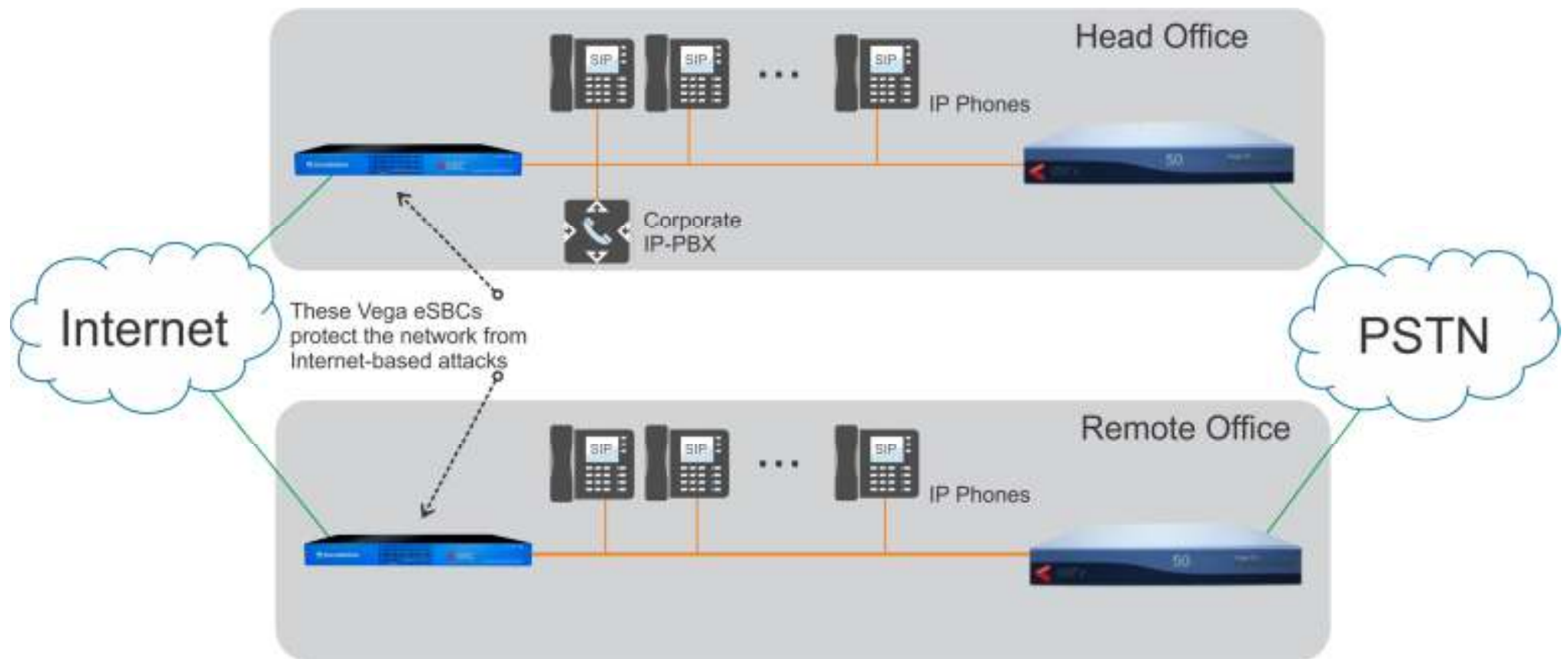
Enterprise Security Threats

- Denial of Services
 - Call/registration overload
 - Malformed messages (fuzzing)
- Configuration errors
 - Mis-configured devices
 - Operator and application errors
- Theft of service/Fraud
 - Unauthorized users
 - Unauthorized media types
- BYOD
 - Smartphones running unauthorized apps
 - Viruses and Malware attacking your VoIP network

SIP Trunking



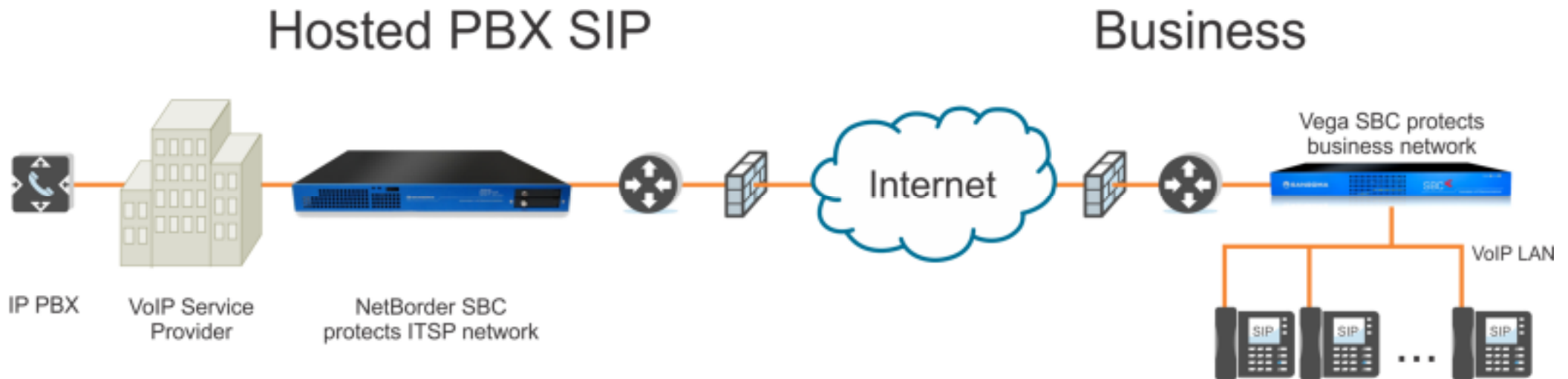
Remote Office Connection without VPN



SBC For Hosted PBX

Advantages:

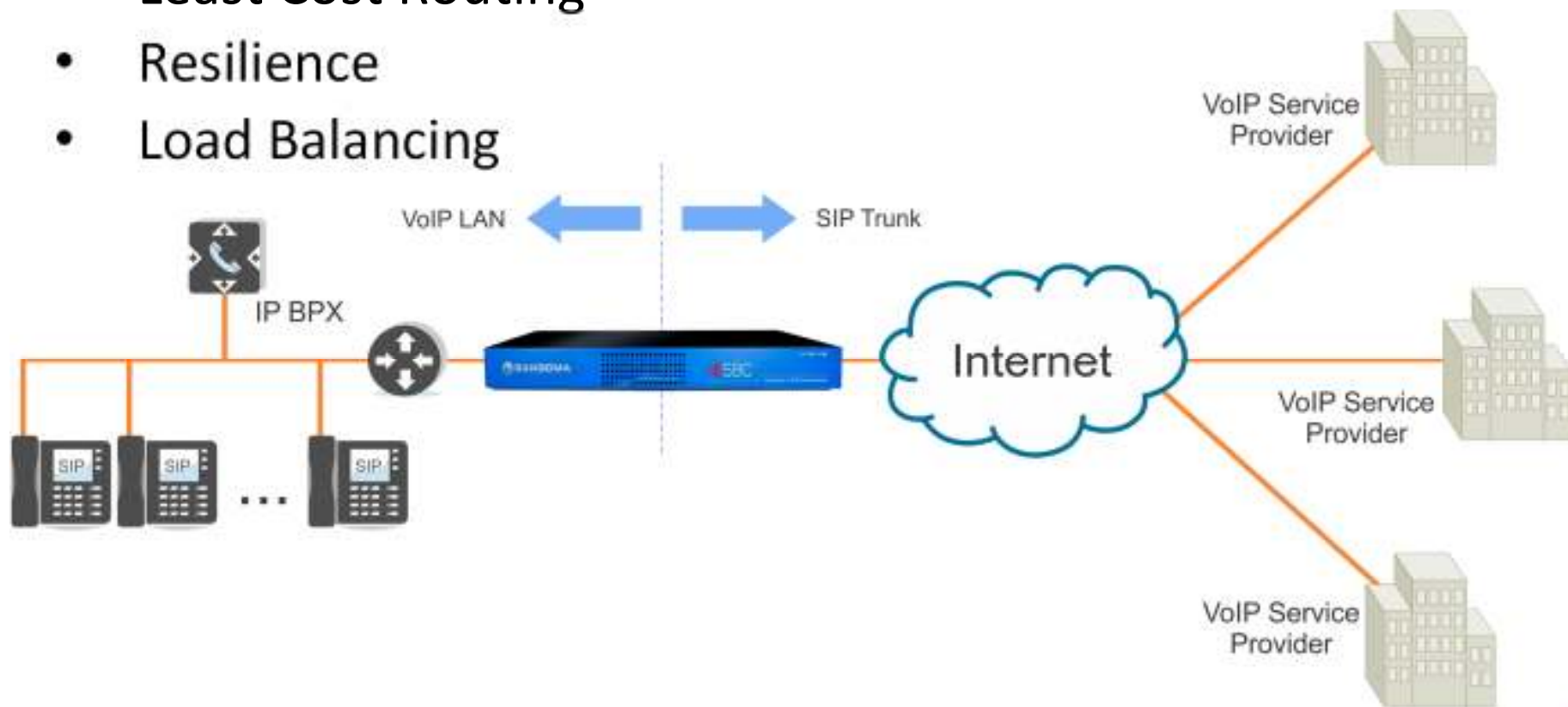
- Known demarcation point
- Reduces interoperability issues/resource with core
- Transcoding if required



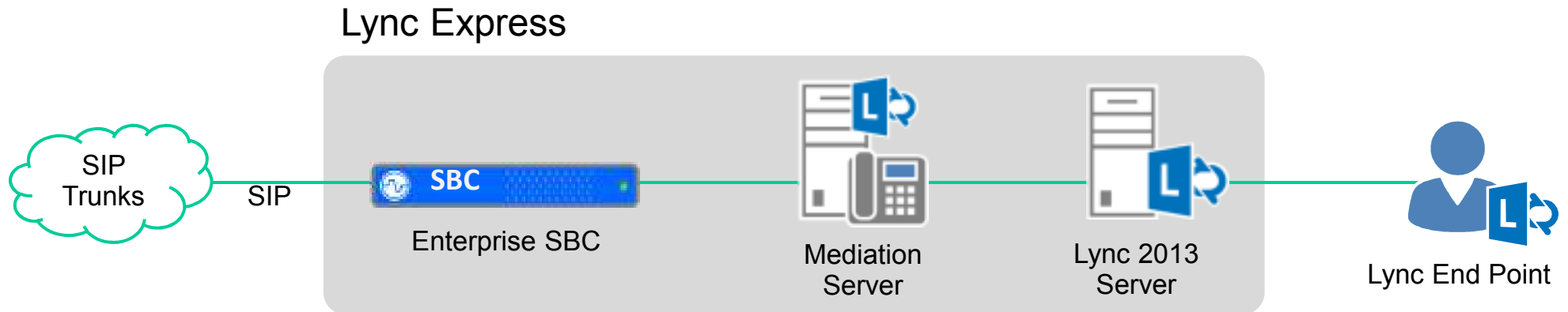
Interworking with IP-PBX

Advantages:

- All advantages of SBC for SIP trunks
- Least Cost Routing
- Resilience
- Load Balancing



SIP Trunking Support for Microsoft Lync



SBC:

- Performs SIP Security functions
- UDP / TCP Translation
- SIP harmonization
- Media harmonization

SANGOMA SBC PORTFOLIO

Product Positioning

The most cost-effective, easiest to provision, and easiest to manage line of SBCs on the market.

 Vega SBC



Vega Enterprise SBC Appliance



Session Border Controllers

- Vega Enterprise SBC
 - 25-250 Sessions/Calls
- Vega VM Enterprise SBC
 - 25-500 Sessions/Calls
 - Software Only/Virtual Machine Ready
- Vega VM/Hybrid Enterprise SBC
 - SANGOMA EXCLUSIVE
 - 25-500 Sessions/Calls
 - SBC Maintained in VM
 - Media Functions offloaded to external hardware resource
- NetBorder Carrier SBC
 - 250-4000 Sessions/Calls



Product Highlights – All SBCs

- Web GUI for ease of Configuration and Deployment
- Efficient Scaling from 25 to 4000 Sessions/Calls
 - 1 session per voice call
 - SIP Registrations do not consume sessions
- Session-based licensing, no hidden costs or fees
- Cost-Effective Carrier-Class Features and Performance
- Network Interconnect Point for SIP Trunking
- QOS & QOE (Quality of Experience) for Enterprise Networks
- Encryption and Security
- Topology Hiding for Fraud Protection
- DOS/DDSO Attack Protection
- Advanced Routing
- Hosted NAT traversal
- Voice, Video, Fax, IM and Presence Support
- SIP-SIP Interworking & protocol normalization

Vega Enterprise SBC

- Enterprise Inter-Site Networking and SIP Trunking Border Control
- Enables Local Security Management for SMBs and Small Enterprises
- Supports 25 to 250 Simultaneous Sessions
 - Field Upgradeable Session Expansion
- Hardware Based Transcoding and Media Handling
- Web GUI Configuration and Smart Defaults for Simple Deployment



Vega VM Enterprise SBC

- Supports 25 – 500 Sessions/Calls
- Virtual Machine-Ready Software
- Web GUI Configuration Tool and Smart Defaults
- Software-Based Transcoding and Media Handling
 - Transcoding Will Impact Session Capacity
- All Other Features Comparable to Vega eSBC Appliance



Vega VM/Hybrid Enterprise SBC

- Supports 25-500 Sessions
- VM/Hybrid Functions Exclusive to Sangoma
 - Maintains SBC In Software/VM
 - Media Functions are offloaded to an external Hardware Resource
 - Multiple external hardware resources cost-effectively enables up to 500 sessions



ADVANTAGES OF THE SANGOMA LINE OF SESSION BORDER CONTROLLERS

Sangoma SBC Advantage

- Simple Licensing
 - Simple per session licensing
 - No Per Feature, Per User or Per Codec licensing
 - Predictable SBC capacity and cost in every use case
- Browser-Based GUI
 - No requirement to use complex CLI
 - Easy configuration via webUI
- VM and the VM/Hybrid Options
- Very cost effective compared to the competition
- Great tech support

RESELLER OPPORTUNITIES

How to Sell SBCs

- Any business using SIP
 - SIP trunking or hosted
- Business impact of telecoms failure
 - DoS attack
 - Toll fraud
- Fear and uncertainty

Reseller Opportunity

- Margin between 22% and 30%
- Example:
 - 25 call enterprise SBC
 - MSRP: \$2,495
 - Reseller Price: \$1,747
 - GM: 30%
- Recurring revenue possible for maintenance services
 - Support contracts available from Provu and Sangoma
 - Extended contracts available
- Training
 - Sangoma runs frequent online and face-to-face training programs
 - Provu will be able to deliver training
- NFR (Not For Resale) units available at reduced pricing
 - Lab use, field trials

Q&A

CLOSING

Summary

- Sangoma has a wide range of flexible SBCs, scaleable from small enterprise to large carrier
- Easy licensing and field upgradeable
- Pricing is available from ProSys
- Provu have the technical expertise to guide resellers through deployment and management.
- Full feature set
- Cost effective compared to competition

Documentation

- <http://wiki.sangoma.com/NetBorder-Session-Controller>
- Frequently updated wiki
 - HTML/pdf based documentation
- Includes:
 - Admin guide
 - Step-by-step configuration
 - Technical documents
 - Quick Start Guide



THANK YOU