

# Session Border Controller (SBC) for Enterprises

Enterprises and SMBs are increasingly looking to Session Initiation Protocol - (SIP) based networks to leverage cutting-edge solutions for collaboration and communication. SIP has become the industry standard for conferencing, lower costs, multimedia messaging, and Unified Communications (UC) applications. SIP trunks support multiple extensions and reduce local, toll-free, domestic, and international communication costs.

By leveraging a SIP network, enterprises and SMBs can provide UC applications to employees in on-site, remote, and hybrid environments - this is a significant competitive advantage for many companies looking to deploy real-time collaborative solutions throughout their organization.

## SIP Trunk Security

Given the vulnerability where a SIP trunk connects to a public network, there are security concerns inherent with SIP trunks - this vulnerability can expose an enterprise or SMB to call hijacking, eavesdropping, spoofing, and toll fraud. Beyond the potential damage such malicious practices pose to operations, privacy and security mandates require the resolution of these vulnerabilities: these mandates and requirements include the European Union General Data Protection Regulation (GDPR), System and Organization Control (SOC) 2, PCI (credit), and HIPAA (health information), with non-compliance often resulting in financial and legal penalties.

## Why You Need a Robust SBC?

In a VoIP phone system such as the Vodia PBX, the SBC is a system component that ensures IP communications sessions (calls) between separate networks or individual endpoints are smooth and, most importantly, secure. An SBC operates at a network's edge, where it serves to "route" sessions between a carrier network and a VoIP network, making sure only authorized sessions are routed. By managing session admission and maintaining security policies, an SBC protects phone systems from malicious activities by bad actors, including extortion, intrusion, and theft of services. It's a fundamental requirement for operating in the cloud.

*Our SBC gives enterprises and SMBs real security...*

### Call Control

The SBC manages both media streams and signaling; it handles the setup, ongoing control, and eventual teardown of calls to ensure smooth communication.

### Interoperability

An SBC is required for translation between disparate VoIP codecs and protocols; it enables seamless communication between different systems.

### Quality of Service (QoS)

The SBC ensures high-quality session delivery through call admission control (CAC), Type of Service (ToS) marking, and rate limiting.

# The Best Solution for Any Organization

Beginning with version 1.0, our PBX has been built with a powerful, feature-rich SBC designed to run on a public IP address (much like email and web servers that serve multiple tenants simultaneously). The Vodia SBC reduces costs significantly for cloud instances, software updates, and other maintenance – and for IPv4 addresses.

The Vodia SBC manages all required encryption algorithms to ensure secure communication. It natively terminates WebRTC traffic, enabling internal calls from WebRTC clients, including Android apps and web browsers, to standard VoIP phones. It also has built-in support for Let's Encrypt®, so it's fast and simple to acquire the necessary certificates.

## *The Vodia SBC Has It All*

### **Transport Layer Security (TLS)**

Transport Layer Security comprises cryptographic protocols that ensure secure communication via a computer network; we deploy TLS wherever we can to secure communication with the PBX.

#### ***SRTP | Secure Real-Time Transport Protocol***

The SRTP is a profile for Real-Time Transport Protocol intended to provide encryption, message authentication and integrity, and to replay attack protection to the RTP data in both unicast and multicast applications.

#### ***DTLS | Datagram Transport Layer Security***

Datagram Transport Layer Security (DTLS) is a protocol for securing datagram communications. It's a similar level of security to the stream-focused TLS.

### **NAT Traversal**

Network Address Translation (NAT) traversal is a networking technique for creating and maintaining Internet protocol connections across gateways for the implementation of network address translation.

#### ***Far-End NAT Traversal***

The Vodia PBX automatically detects when a device resides behind a firewall, and it modifies the routing to this destination when it operates on a public IP address. This is crucial for users working from home, and for those using Vodia mobile apps. As a STUN server isn't required, installation complexity is significantly reduced.

#### ***Near-End NAT Traversal***

There are times when the PBX can't run on a public IP address, such as when it's run on Amazon EC2 or in the LAN. In these instances, the Vodia PBX needs to provide a routable address when devices connect from external addresses; LAN or VPN traffic will use the private addresses.

## Intrusion Detection

While operating on a public IP address, it's for certain a scanner will try to use the PBX to make phone calls. The Vodia PBX monitors all attempts and automatically blocks these devices and/or services.



## IPv4 and IPv6 Support

Vodia was one of the first UC providers to support the operation of dual stack IPv4 and IPv6. Calls can be established between IPv4 and IPv6 clients: this makes the migration to IPv6 simple, and it makes the Vodia PBX a safe investment.

### IPv4

IPv4 is a core protocol of standards-based methods for the Internet and other packet-switched networks; it still routes most Internet traffic, despite the use of IPv6, a successor protocol. IPv4 uses a 32-bit address space, 4,294,967,296 (2<sup>32</sup>) unique addresses, but it reserves large blocks for special networking methods.

### IPv6

In addition to providing a larger space, IPv6 offers other technical benefits, including for permission of hierarchical address allocation methods to facilitate route aggregation across the internet, which limits the expansion of routing tables. IPv6 uses a 128-bit address, theoretically permitting 2<sup>128</sup> (approximately 3.4×10<sup>38</sup> addresses).

## Complete Application-Layer Security Architecture

The Vodia SBC gives enterprises complete, out-of-the-box security architecture in a single platform:



Access controller



Authentication



SIP firewall



UC proxy



IDS/IPS



Policy enforcement

# Certified for Microsoft Teams

The Vodia PBX SBC has been certified for Microsoft Teams: in combination with our PBX, enterprises can use Microsoft Teams as an office phone system while benefiting from Vodia's rich B2B communication feature set. The solution brings secure, integrated voice services to Teams collaboration environments.

Microsoft selects and certifies SBC vendors whose products support Direct Routing, which enables companies using Teams calling to directly manage the interconnection to the service provider; users can make and receive calls to/from the public telephone network and to/from the company IP-PBX, all within Teams. Vodia is now a member of the elite class of Microsoft-certified devices that support Direct Routing. The certification expands the scope of applications for our solutions and enables our partners to expand and enrich their unified communications and collaboration service offerings.



## Security and Support for BYOD

More and more staff members are bringing their own devices to work, and many enterprises and SMBs are looking to Bring Your Own Device (BYOD) as a way to streamline and strengthen collaboration, for increased productivity, while reducing costs. The challenge, of course, is to embrace BYOD while maintaining network efficiency and security. The Vodia PBX makes BYOD possible, and secure, with a combination of authentication, networking, and security in multiple deployments, including access control for wired and wireless devices, secure remote access, and device authentication.

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### About Vodia

The Vodia SBC delivers superior function and secure service while reducing costs. Enterprises the world over deploy the Vodia PBX for the best in unified communications. Deployed in 34 countries, the Vodia PBX integrates with 15 CRM systems, 110 SIP trunks and 490 phones. We partner with the world's best managed service providers (MSPs) and IT departments: these relationships are the foundation of our business.