

## **ABC SBC: Securing and Flexible Trunking**

**FRAFOS GmbH**

## 1. Introduction

Enterprises are increasingly replacing their PBXs with VoIP PBX or are extending their PBX with a VoIP module to benefit from attractive VoIP minute prices. To achieve the most out of the migration to VoIP technology enterprises require flexible and efficient border control solutions. The ABC SBC assists enterprises with the migration to VoIP by offering a flexible trunking solution that secures the access to the PBX as well as the communication to the VoIP service provider.

## 2. Secure Trunks

The ABC SBC secures the traffic exchanged with the VoIP service provider using TLS and IPSEC. With TLS as the transport protocol all SIP messages exchanged with the provider can be encrypted and signed. Deploying an IPSEC tunnel to the VoIP service provider can protect Media traffic.

## 3. Profile-Based Control

An enterprise can utilize multiple VoIP service providers so as to benefit from the best offers. Service providers might differ in their security policies, the used transport protocols and usage of SIP. With the ABC SBC enterprises can define different profiles to be used for different service providers. Each of these profiles determines what transport protocol and security mechanisms the ABC SBC should use when communicating with a certain service provider.

## 4. SIP Adaptation

With different standardization groups working in SIP and the different interpretation of developers to the same specifications, interoperability between SIP components of different manufacturers and of different network architectures is unfortunately not always guaranteed.

The ABC SBC offers a powerful GUI based mediation functionality that enables an operator to adapt incoming and outgoing traffic. Using the ABC SBC mediation GUI, an operator can configure the following actions:

- Stateless SIP header manipulation: The ABC SBC can be configured to remove

certain headers and add others.

- Statefull message handling: To support the differences between the IMS and IETF specifications the ABC SBC is capable of overcoming differences in the call flows and generating appropriate responses and requests.
- Message blocking: The ABC SBC drops/rejects requests and messages not supported by an enterprise.
- Header manipulation: The ABC SBC can be configured to change the content of a certain header.
- Transport mediation: SIP can be transported over UDP, TCP and SCTP. Further, it can work over IPv4 and IPv6. The ABC SBC can enable two elements using different transport protocols to communicate seamlessly with each other.

## 5. Media Transcoding

The ABC SBC provides software-based transcoding. Without the need for specialized hardware, the ABC SBC can transcode audio streams using G711u/a, G726, GSM, iLBC, L16, G722, Speex and on request: G729a, G729a/b or AMR codecs. The software-based approach allows enterprises to still benefit from the transcoding capabilities even when deploying the ABC SBC on existing hardware or as a virtual machine.

## 6. Capacity

The ABC SBC supports up to 7000 simultaneous calls running with G.711 codec on the standard hardware offered by FRAFOS. For smaller enterprises, FRAFOS also offers the ABC SBC as a software only solution that can be deployed on top of hardware chosen by the enterprise. The ABC SBC can also be integrated into a virtualized environment on top of already available hardware. The capacity of the ABC SBC will depend then on the used hardware and available resources.

## 7. Technical Specifications

<p><b>Supported Platforms</b></p> <p>Linux</p>	<p><b>High Availability</b></p> <p>Active/Hot Standby redundancy model</p>
<p><b>WebRTC Features</b></p> <p>Javascript</p> <p>SIP over WebSocket</p> <p>NAT traversal using ICE, TURN, STUN</p> <p>JsSIP support</p>	<p><b>QoS Control</b></p> <p>Bandwidth limitation and management</p> <p>Call admission control per peering partner/trunk</p>
<p><b>Media Services</b></p> <p>Routing audio codec including G.711 and OPUS.</p> <p>Routing of video codec including VP8</p> <p>Dynamic jitter control</p> <p>NAT/NAPT on media</p> <p>RTP inactivity monitoring</p> <p>Codec filtering</p>	<p><b>Call Routing</b></p> <p>Call blocking and filtering</p> <p>Embedded routing engine</p> <p>Load balancing</p> <p>Peer monitoring and availability detection</p> <p>Alternative routing on failure</p> <p>Table based routing for LCA</p>
<p><b>Media Applications</b></p> <p>Call recording</p> <p>Announcement services</p> <p>Software based transcoding (G711u/a, G726, OPUS, iLBC, L16, G722, Speex; on request: G729a, G729a/b, AMR)</p>	<p><b>SIP</b></p> <p>Registration pass-through</p> <p>Registration caching and offload</p> <p>SIP header manipulation</p> <p>SIP Back2Back UA</p>
<p><b>Management Capabilities</b></p> <p>GUI based configuration and monitoring</p> <p>Secure embedded web-based GUI</p> <p>SSH access</p> <p>SNMP V2 status and logs</p> <p>Local logging of alarms, events and statistics</p> <p>REST and XML RPC based open interfaces</p>	<p><b>Protocol Support</b></p> <p>UDP, TCP WebSocket</p> <p>Translation between transport protocols</p> <p>Per source/destination transport layer mediation</p> <p>SNMP, NTP, SSHDNS</p> <p>RTP, RTCP, SRTP</p> <p>TLS, DTLS, SDES</p>
<p><b>Virtualization</b></p> <p>Amazon cloud</p> <p>Virtualization software OVM, KVM ..</p>	<p><b>Hardware</b></p> <p>Hardware independent</p>



## **8. About FRAFOS**

FRAFOS GmbH is a manufacturer of VoIP solutions with offices in Berlin and Prague. FRAFOS was incorporated as privately held company in May 2010, in Berlin, Germany.

The history of FRAFOS team and technology goes back to the late nineties. As researchers at the prestigious German public R&D institute Fraunhofer FOKUS, the FRAFOS founders were the among the first to work the SIP and RTP standards and to develop open source solutions that paved the way for the VoIP revolution.

FRAFOS offers SIP session management and security solutions of the latest generation that come either as a standalone solution or as a cloud ready implementation. The flagship product of FRAFOS, the ABC SBC, offers open interfaces and built in multimedia applications such as recording and announcements. The ABC SBC enables the service providers and enterprises to simplify their service infrastructure and prepares them for future challenges.