

## E-SBC - Paving Your Way to the Enterprise Heart

Enterprise Session Border Controllers (E-SBCs) are essential components of any business's migration to VoIP services. They help protect the deploying enterprise's network assets from security threats and facilitate interoperability between the enterprise network, the service provider's network, and the enterprise's own remote workers. Moreover, E-SBCs provide branch office survivability, voice quality assurance and connectivity to fallback services such as the PSTN.

Why is E-SBC the right choice for performing these essential functions? Why does a Core SBC or a traditional Data Firewall with SIP Application Layer Gateway (ALG) functionality fall short of providing a comprehensive solution?

- **Define a clear-cut, secured point of demarcation** - While a core SBC helps protect your core network from security threats, without an E-SBC at the edge of the enterprise network, any security breach at the enterprise side might expose your services to be tagged as the potential cause. Don't get blamed! An E-SBC allows you to draw a clear and secure boundary between your SIP Trunks and the enterprise's local network elements.
- **Provide compelling technical assurance when approaching an enterprise customer** - No matter what types of TDM or IP equipment exist at your business customer's premises, you can rest assured that your SIP trunking services can interoperate and connect with them through the E-SBC, helping you concentrate on selling your services to any given business.
- **Ensure high satisfaction rates** - E-SBCs incorporate advanced Quality of Experience (QoE) tools that monitor the voice quality, ensuring high satisfaction levels and low churn rate among your enterprise customers.
- **Save on VPN operational costs** - you and your customers can achieve high levels of security and quality of service with E-SBCs at a fraction of the cost of dedicated VPNs.
- **Facilitate interoperability through SIP Normalization** - Configurable SIP behavior allows the E-SBC to manipulate and program various fields in the SIP headers and ensure that a given SIP implementation of the service provider will interoperate with any specific SIP version supported by the enterprise IP-PBX.
  - A firewall with SIP ALG can only modify the application layer addresses, not SIP headers
  - In a core SBC it is not practical to adapt its SIP implementation to support every specific enterprise deployment

- **Support Media Transcoding** - Media codecs used in the enterprise network are often different than the ones used by the service provider. Transcoding is most effective and scalable when done as close as possible to the enterprise network. On the other hand, Core SBCs are limited in transcoding scale and firewalls with SIP ALG and typically do not support transcoding. AudioCodes E-SBCs support a wide range of codec transcoding options, including narrowband and wideband variations.
- **Security** - By using a back-to-back user agent (B2BUA) mode that terminates the session and reinitiates it, the E-SBC provides the enterprise with a number of key security functions that help protect the enterprise network and that are not supported by a firewall with SIP ALG.

**The main ones are:**

- Denial of Service (DoS) protection
- Topology hiding, as opposed to a simple NAT Traversal on a SIP ALG
- Malware and SPIT mitigation
- Dynamic Access Control List (ACL). SIP ALG only supports static ACL
- Advanced Call Admission Control (CAC) to enforce SLA limits, preventing over-subscription and voice congestion

How do you select the best E-SBC to fit your customers' needs? Here is a list of additional important aspects to consider before making this decision:

- **Tested Interoperability** - According to a recent SIP Trunking survey carried out by Infonetix Research, one of the top four criteria in choosing a SIP Trunking provider is whether or not the SIP trunks are interoperable and certified to work with the enterprise IP-PBX. AudioCodes E-SBCs have been tested and certified with a very large pool of PBXs, IP-PBXs and contact centers on the enterprise side, and many of the leading softswitches and application servers on the service provider's side.
- **PSTN Connectivity** - For the majority of SIP Trunk deployments the enterprise wants to keep its existing connection to the PSTN. By supporting PSTN Trunks in parallel to SIP Trunks through the same box, AudioCodes E-SBCs enable the enterprise to perform a gradual migration from TDM to IP and use the PSTN as a fallback connection.
- **Survivability** - In IP-Centrex deployments, in case of SIP trunk failure causing WAN isolation at the enterprise branch side, the E-SBC should provide stand-alone-survivability to all the registered SIP Phones at that branch office to enable internal calls, external calls through PSTN fallback and automatic recovery.
- **Voice quality assurance** - AudioCodes E-SBCs incorporate several measurements for monitoring and controlling the quality of voice:
  - Embedded BroadSoft PacketSmart agents for QoE, allowing the SIP Trunk provider to monitor the SLA and identify the cause of any quality issue at the enterprise premises
  - High Definition VoIP, supporting all popular wideband codecs such as G.722, WB-AMR and Microsoft RTA
  - Reducing access bandwidth (and costs) by using transcoding to codecs with a high compression rate
  - Strong in-house DSP resources performing advanced DSP algorithms, including dynamic jitter buffers, packet loss concealment, voice activity detection and echo cancellation
- **Handling users in remote locations** - One of the growing trends worldwide is often called the distributed enterprise. Many employees work from home, and many others work in small offices that are far from the main offices and do not have a local IP-PBX. Enterprise SBCs are the only possible means for enabling remote employees to access the enterprise VoIP network while providing all required services.

- **Gradual migration from TDM to IP** - In a recent SIP Trunking study by Infonetics, 70% of enterprises rated “upgrading infrastructure” as a primary reason for adopting SIP Trunking services. Upgrades from TDM to IP typically involve a transition period in which the PBX is being replaced with a UC solution that includes an IP-PBX. Built upon a media gateway platform, AudioCodes E-SBCs support both TDM and IP PBXs on the enterprise side, and can connect both of them to the SIP Trunk and the PSTN on the WAN side.
- **Multi Service Business Gateway or Stand-Alone E-SBC – two solutions using the same hardware!** Over the top service providers offering SIP Trunk services are required to provide all necessary connectivity and security services without touching the enterprise’s existing equipment i.e. Routers and Firewalls. E-SBCs are the ideal way to provide these services.

Bundled offering service providers can utilize the AudioCodes Multi Service Business Gateway (MSBG) configuration, incorporating several key functions into a single box, allowing efficient SLA management, easy provisioning, reduced TCO and a clear point of demarcation between the enterprise network and the service provider.



Mediant 800 E-SBC



Mediant 1000 E-SBC



Mediant 3000 E-SBC

## About AudioCodes

AudioCodes Ltd. (NasdaqGS: AUDC) designs, develops and sells advanced Voice over IP (VoIP) and converged VoIP and Data networking products and applications to Service Providers and Enterprises. AudioCodes is a VoIP technology market leader focused on converged VoIP & data communications and its products are deployed globally in Broadband, Mobile, Cable, and Enterprise networks. The company provides a range of innovative, cost-effective products including Media Gateways, Multi-Service Business Gateways, Session Border Controllers (SBC), Residential Gateways, IP Phones, Media Servers and Value Added Applications. AudioCodes’ underlying technology, VoIPerfectHD™, relies on AudioCodes’ leadership in DSP, voice coding and voice processing technologies. AudioCodes High Definition (HD) VoIP technologies and products provide enhanced intelligibility and a better end user communication experience in Voice communications.

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