Mediant™ 4000 Enterprise Session Border Controller (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, Enterprise networks and Cable. The company provides a range of innovative, cost-effective products including Media Gateways, Multi-Service Business Routers, 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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• **High Capacity Enterprise SBC**

• **Scalable up to 4000 SBC Sessions**

• **Enables secured connectivity and interoperability between enterprise IP-PBX systems, Unified Communication solutions, Call Center servers and SIP Trunking services**

• **Supports remote workers and mobile SIP clients**

• **Enhanced enterprise perimeter defense against VoIP Denial Of Service, Fraud and Eavesdropping**

• **VoIP quality monitoring and enforcement (Advanced Call Admission Control)**

• **Stand Alone Survivability (SAS) for continued service during WAN failure**

• **Active/Standby High Availability (1:1 configuration) assuring continued service**

• **Advanced media processing* including Transcoding and Wideband speech**

AudioCodes Mediant™ 4000 Enterprise Session Border Controller (E-SBC) is a member of the AudioCodes family of Enterprise Session Border Controllers, enabling connectivity and security between enterprise and Service Providers VoIP networks.

The Mediant 4000 E-SBC provides Perimeter Defense as a way of protecting enterprises from malicious VoIP attacks; mediation for allowing the connection of any IP-PBX to any Service Provider; and Service Assurance for service quality and manageability. Designed for high capacity and high performance, the Mediant 4000 E-SBC is based on AMC technology, scaling up to 4000 secured E-SBC VoIP sessions.

The Mediant 4000 E-SBC provides a perfect solution for security-focused organizations such as contact centers, large data centers, hosted services and government institutions.

WHY ENTERPRISE SESSION BORDER CONTROLLERS?

Session Border Controllers were originally deployed at the border of Service Provider core networks. Both enterprises and Service Providers have now realized the essential need of enterprise-based session border controllers, located at the customer premises for addressing the security, mediation and SLA requirements of the enterprise. The Mediant 4000 E-SBC provides an open and flexible architecture for all enterprise deployments, acting as the demarcation point between the enterprise and SIP Trunking providers, an enterprise and a hosted Unified Communication service provider, or an enterprise and other organizations for direct VoIP calling.

VAST MEDIATION CAPABILITIES AND PROVEN INTEROPERABILITY

In a world of growing flavors of SIP implementations, enterprises and Services Providers alike must ensure interoperability for successful integration and service delivery. The Mediant 4000 E-SBC, includes comprehensive media security, and SIP normalization capabilities. As a direct evolution of the field-proven and highly interoperable AudioCodes E-SBC product family, the Mediant 4000 E-SBC provides unparalleled interoperability, enabling mediation between an extensive list of IP-PBXs, Unified Communications solutions and SIP Trunking providers.

HIGH AVAILABILITY AND SURVIVABILITY

The Mediant 4000 E-SBC supports high-availability configurations with reliable two box redundancy, ensuring no loss of active sessions during failure time.

SIP TRUNKING SOLUTION

The Mediant 4000 provides security, session mediation and service level assurance services, connecting the enterprise to multiple SIP Trunking providers, while maintaining interoperability and manageability.

CONTACT CENTER SOLUTION

Contact Centers place the SIP Application Server in the LAN, with SIP User Agents deployed remotely across the WAN. The Mediant 4000 E-SBC monitors these User Agents, and resolves any NAT traversal issues they might face.

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Hosted Centrex Solution

IP Centrex solutions rely on VoIP technology, whose implementation may present significant challenges, especially to businesses without prior VoIP experience. One of the challenges is service continuity during WAN outages. The Mediant 4000 E-SBC, with its Stand Alone Survivability feature, is able to monitor registrations to the SIP Proxy, so that if connectivity is lost, the Mediant 4000 E-SBC enables internal calls to continue uninterrupted.

Mediant 4000 E-SBC in Service Provider Networks

As Enterprises strive to control their communication operating and equipment costs, outsourcing Voice and Data infrastructure to a Service Provider is becoming an attractive option. The Mediant 4000 E-SBC offers Service Providers, who deliver hosted and managed communication services, a clear and easy-to-manage demarcation point, combining security, mediation services, and service level assurance.
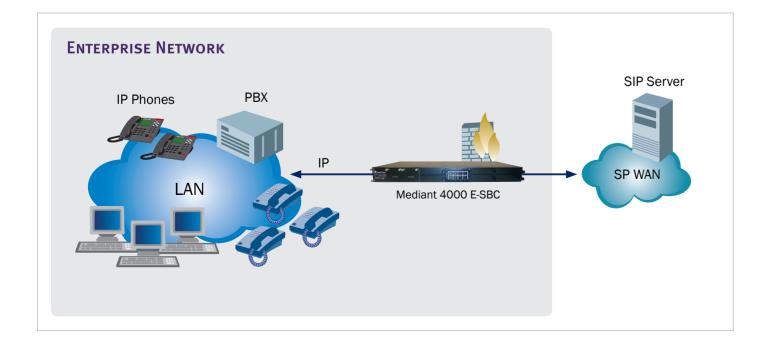
Mediant 4000 E-SBC in Enterprise Networks

Enterprises are motivated to become more productive, efficient, and responsive to their internal users. The combination of secured voice services, standalone survivability, mediation services and service level assurance offered by the Mediant 4000 E-SBC ensures a high level of investment protection, cost optimization and support for the growing communications needs of enterprise users, whether at the head office, branch offices or on the road.

Benefits for Service Providers

- A highly integrated device for providing SIP Services to Enterprises
- Extensive interoperability and partnerships that extend across multiple vendor devices and protocol implementations
- Enhanced SIP Mediation capabilities, which enable SIP Trunking in a variety of IP-PBX customer environments
- Simplified management and maintenance using a unified management tool
- Assuring standalone survivability at the customer premises during WAN outage

Benefits for Business Customers

- A highly integrated device for secured SIP Trunking access, forming a single and managed point of demarcation for VoIP networks
- Future-proof solution with the ability to support various SIP Trunking and UC applications
- Multiple Service Provider connectivity to optimize tariff rates
- Local survivability upon WAN network connectivity failures

Specifications

Capacities	
Max. Sessions	4000 SBC sessions
Max. Registered Users	8,000
Access Control	Denial and Distributed Denial of Service protection through line rate filtering using White/Black Lists, including bandwidth throttling
VoIP Firewall	RTP pinhole management according to SIP offer/answer model. Rouge RTP detection and prevention, SIP message policy
Encryption and Authentication	TLS, SRTP, HTTPS, SSH, Client/Server authentication
Privacy	Topology Hiding, User Privacy
Traffic Separation	Physical separation or VLAN interface separation for multiple Media, Control and OAM interfaces
Interoperability	
SIP B2BUA	Full SIP transparency, mature & broadly deployed SIP stack
ITSP and IP-PBX Support	Interoperable with many SIP trunk Service Providers and IP-PBX vendors, such as Verizon, Skype and Microsoft Lync
Transport Mediation	SIP over UDP to SIP over TCP or SIP over TLS, IPv4 to IPv6, RTP to SRTP
Header Manipulation	Programmable header manipulation. Ability to add/modify/delete headers using advanced regular expressions
URI and Number Manipulations	URI User and Host name manipulations. Ingress & Egress Digit Manipulation
Transcoding and Vocoders	Coder normalization including: transcoding, coder enforcement and re-prioritization
	Extensive vocoder support: Wireline: G.711a/mu, G.723.1, G.726, G.727, G.729A/B/E
	Wireless: GSM-FR, AMREVRC; Wideband: AMR-WB, G.722, SILK, SPEEX[1]
Signal Conversion	DTMF/RFC2833, Inband/T.38 Fax, Packet-time Conversion
NAT	Local and Far End NAT traversal for support of remote workers
Signal Detection[1]	Voice Activity, Call Progress Tone, and Answering Machine
Voice Quality and SLA	
Call Admission Control	Deny excessive calls based on session establishment rate, number of connections and number of registrations (per SIP trunk or routing domain)
Packet Marking	802.1p/Q VLAN tagging, DiffServ, TOS
Stand Alone Survivability	Maintain local calls in the event of WAN failure
Impairment Mitigation	Packet Loss Concealment, Dynamic Programmable Jitter Buffer, Silence Suppression/Comfort Noise Generation, RTP redundancy[1], broken connection detection[1]
Transparent Media	Low latency, unprocessed payload transfer
Voice Enhancement	Acoustic echo cancellation[1], Transrating[1], RTCP-XR
Gain Control[1]	Fixed & dynamic voice gain control
Media De-anchoring	Hair-pinning of local calls to avoid unnecessary media delays and bandwidth consumption
Redundancy	High availability with two box redundancy, Active calls preserved
Voice Quality Monitoring	AudioCodes Session Experience Manager (SEM)
SIP Routing	
Routing Methods	Request URL, Source/Destination IP Address, Fully Qualified Domain Name, ENUM, LDAP
Alternative Routing and Load Balancing	Detect proxy failures and route to alternative proxies. Load balance across a pool of proxies, least cost routing
Multiple VLANs	Support for up to 48 separate LANs
Hardware Specifications	
IP Networking	8 Redundant 100/1000 Base-T Ethernet ports for physical separation between multiple LAN and WAN networks and between Media, Control and OA&M
Enclosure	4/8-slot, 1U chassis
Dimensions (HxWxD)	1U x 19" (444mm) x 14" (355mm)
Weight	Approx. 11.7 lbs (5.3Kg)
Power	100–240 V AC redundant Dual Feed
Regulatory Compliance	
Safety and EMC	UL 60950-1:2007, IEC609501-1:2005 2nd edition
	FCC part 15 Class A
	EN55022 Class A, EN 55024, EN300 386, EN61000-3-3, EN61000-3-2

Enterprise Network

1 – Roadmap