



Application Note

Creating the Unified Multi-Service Demarcation Point

Powered by AudioCodes Multi-Service Business Gateways (MSBG)

The Challenge

Enterprise organizations building their ICT infrastructure face many challenges. They are striving to be more productive, efficient, and responsive to their internal customers. With countless services and applications running on the same IP infrastructure, along with voice, data and video converging into Unified Communications systems, building a network to accommodate all these services becomes increasingly more complicated.

Service Providers targeting the creation of a unified service offering for their customers face the challenge of providing the best services for SMBs, SMEs and Enterprise branch offices. Service Providers attempting to create ideal connectivity solutions for customers must develop a solution that can scale to support hundreds of users per location, sustain unknown future applications, integrate voice, data and video, provide manageability and security, and have the right cost-performance to enable mass deployments.

In addition, service providers must face the challenge of creating a solution that can be centrally managed as a single demarcation point, enabling efficient problem isolation and resolution, scalable management and cost-effective provisioning and support.

By building such a solution, various services need to be supported by the access solution, including WAN Access, IP Routing, LAN Switching, VoIP & PBX interfacing, Data & Voice Security and many more should be taken into account.

Traditional Solutions

Traditional service provider access solutions often utilize multiple stacked devices from different vendors in order to provide full functionality. In extreme conditions, service providers can reach a point where separate devices for each of the following functions are used:

- An ADSL / Cable Modem connecting the customer to the service provider WAN
- A Router, providing IP Routing functions and data quality of service
- A LAN Switch, connecting users to the network
- A Data Firewall, providing application-level security and IPSec / SSL VPN support
- A Media Gateway, connecting the office TDM PBX to the VoIP network or
- A remote IP-PBX server, providing local survivability for office IP Phones in case of a network failure
- A Session Border Controller, providing security for the voice network

Although such a solution obtained from various vendors may provide the most ideal feature set, it is increasingly difficult to manage. Both capital and operational expenses of such a fragmented solution are very costly, as is being multiplied by thousands of enterprise customers. "Finger pointing" occurs when trying to identify problems that frequently materialize in such a design. Additionally, interoperability introduces the challenge of attempting to implement services that require end-to-end compatibility and consistency such as Quality of Service or Security.

AudioCodes' Solution

AudioCodes' solution for service provider managed access, introduces groundbreaking technology, integrating many functions into a single, integrated multi-service device – the Multi-Service Business Gateway (MSBG).

The first product to adopt the MSBG technology is the Mediant™ 1000 MSBG, which is based on the award-winning AudioCodes Mediant™ 1000 Media Gateway. This MSBG product will eventually integrate all required functionalities for the service provider access applications into a single, integrated product:

- A top quality, highly interoperable modular Media Gateway platform, supporting a combination of FXS, FXO, BRI & E1/T1/J1 trunks, connecting the customer existing legacy PBX into the VoIP network*
- IP Telephony and Unified Communications survivability agent, enabling continuous support of IP Centrex users in case of a WAN failure, utilizing the AudioCodes SAS (Stand Alone Survivability) feature*
- A general purpose application server, based on an Intel-based CPU, hard disk and memory, that can host any branch office application such as IP-PBX, IVR, Conferencing Server or any other application utilizing the AudioCodes Open Solution Network (OSN) Server *
- A DSP resource pool, supporting the offloading of computing-intensive media applications such as conferencing, recording or announcements from the software based application server, utilizing the AudioCodes Media Processing Module (MPM)*
- An IP-IP Session Mediation and Transcoding Gateway enabling the connectivity of the enterprise into one or more SIP voice servers, saving on PSTN costs, and mediating between different flavors of SIP applications, such as Microsoft Office Communications Server 2007 and other industry leading IP-PBX applications*

- A full featured enterprise-class Session Border Controller (SBC), enabling the secured connectivity of the enterprise branch to the headquarter or the secured connectivity of the headquarters IP-PBX system to other enterprises**
- A data router, utilizing static or dynamic routing protocols (RIP/OSPF/BGP), and utilizing enhanced quality of service algorithms for data and voice applications**
- A secured data Firewall, supporting statefull inspection of typical enterprise applications and deep packet inspection in line rate**
- An integrated IDS/IPS device, protecting the enterprise from malicious attacks in real time**
- A VPN agent and concentrator, supporting IPsec and SSL for site-to-site secured VPN connectivity and mobile users remote access VPN**
- A LAN Switch, supporting the connection of multiple 10/100/1000 LAN users directly into the Mediant 1000 MSBG, or alternatively the connection of the MSBG to an external LAN switch, supporting VLAN interfaces for increased security and scalability**
- A WAN Access device, supporting different WAN access technologies, such as Ethernet, ADSL2+, VDSL and xPON***

** Available now, using AudioCodes software version 5.4 on the Mediant 1000 Media Gateway*

*** Available by the end of 2008, using software version 5.6 on the Mediant 1000 MSBG*

**** Available in 2009, using software version 5.8 on the Mediant 1000 MSBG*

All the above listed features and services are integrated in a single, compact, 1U rack mountable device, which is uniformly managed, simplifying management and saving on capital and operational costs.

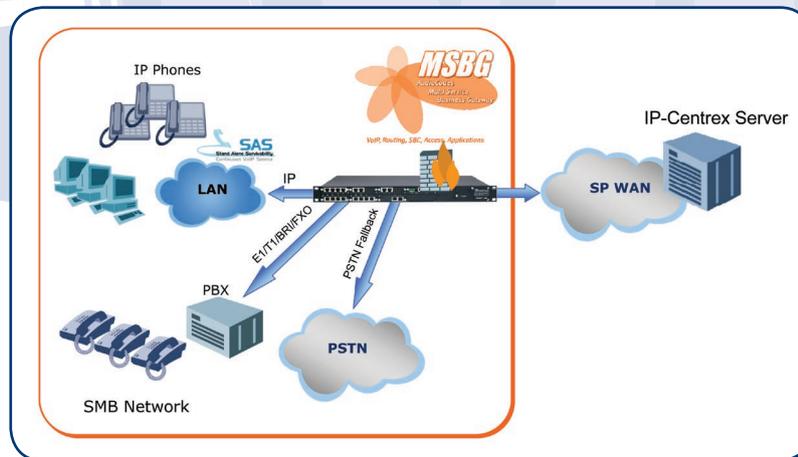
As a member of the already successful AudioCodes' Mediant gateway family, the Mediant 1000 MSBG is an evolutionary extension of the Mediant family and brings out the AudioCodes technology expertise and interoperability certifications from a wide range of application partners. This enables the Mediant 1000 MSBG to be used with a wide range of IP Centrex servers, IP-PBXs and TDM PBXs.

Many service providers will choose to deploy the Mediant 1000 MSBG without using all of its features simultaneously. Some typical deployments can include:

- The Mediant 1000 MSBG deployed as a Media Gateway only - connected to an external WAN router. Selecting the Mediant 1000 MSBG for such applications will provide the service provider with a future proof VoIP solution - upgradable to support SBC services as well as IP-IP Mediation and transcoding migrating to a SIP service
- The Mediant 1000 MSBG deployed as a survivable VoIP gateway - supporting the backup of the centralized IP Centrex service in case of a WAN failure, and enabling local branch PSTN breakout for backup
- The Mediant 1000 MSBG deployed as a combined IP-IP and IP PSTN gateway and an SBC - connecting the enterprise multiple SIP and/or PSTN services, supporting SIP mediation and SBC-based VoIP security
- The Mediant 1000 MSBG deployed as an integrated branch office Media Gateway and secured data router - connected to an external WAN xDSL / Cable modem
- The Mediant 1000 MSBG deployed as the one and only access device - supporting all enhanced feature-rich functionalities described in this application note

Selected Application – Survivable IP Centrex

Service providers deploying an IP Centrex solution can utilize most of the functions of the Mediant 1000 MSBG for Enterprise access in their IP Centrex service.

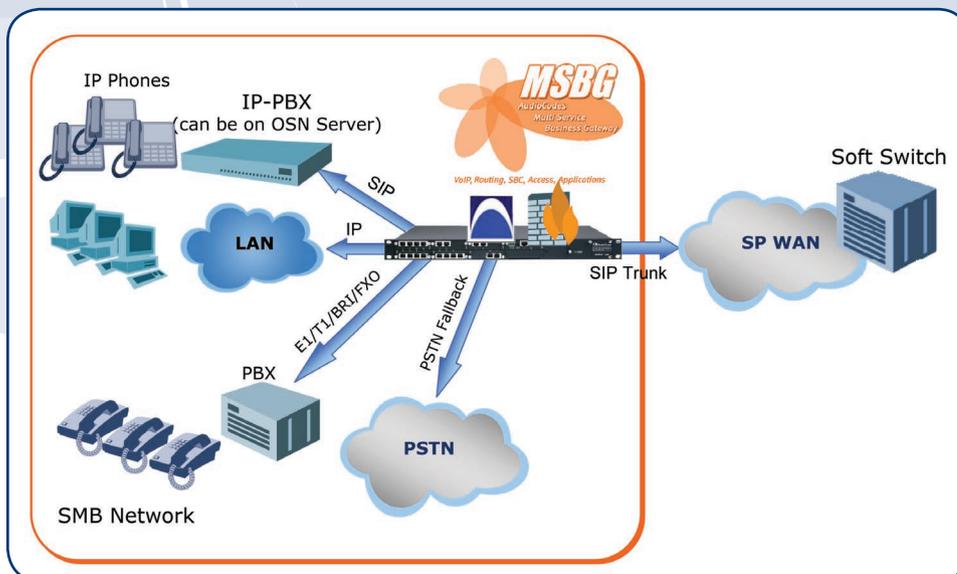


The Mediant 1000 MSBG is the ideal CPE access gateway for IP Centrex applications. Utilizing its secured WAN access & routing features, the Mediant 1000 MSBG can support direct connectivity of the service provider customer into the IP Centrex network for both voice and data. The Stand Alone Survivability (SAS) function allows for continuous telephony service even in the case of a network failure. The integrated telephony interfaces allow for local PSTN breakout, as well as the migration from existing key system and enterprise PBXs. Session Border Controller capabilities will protect the service provider network against malicious attacks from the enterprise customer side. The local DSP resources deployed inside the Mediant 1000 MSBG support transcoding services for bandwidth savings as well as media services for locally deployed media applications.

By selecting the AudioCodes Mediant 1000 MSBG as its gateway of choice for IP Centrex connectivity, the service provider can create a future proof access solution for enterprise customers, providing value added services such as survivability and security, together with market leading VoIP quality and interface flexibility.

Selected Application – SIP Trunking

Service providers offering SIP trunking services can utilize the functions of the Mediant 1000 MSBG for Enterprise access into their SIP trunking service.



The Mediant 1000 MSBG is the ideal CPE access gateway for SIP service providers. Utilizing its secured WAN access & routing features, the Mediant 1000 MSBG can support direct connectivity of the service provider customer into the SIP network for both voice and data. The integrated telephony interfaces allow for local PSTN breakout, as well as the connection of existing TDM key systems and PBXs into the SIP service. Session Border Controller and SIP mediation capabilities will mediate between the enterprise IP-PBX SIP implementation and the service provider SIP Softswitch, protecting the service provider network against malicious attacks from the enterprise customer side and vice-versa. The local OSN Server option inside the Mediant 1000 MSBG can be used to host the enterprise IP-PBX application which can be supplied as a managed service by the service provider. By selecting the AudioCodes Mediant 1000 MSBG as its gateway of choice for SIP Trunking, the service provider can create a future proof access solution for enterprise customers, providing value added services such as survivability and security, together with market leading VoIP quality and interface flexibility.

Summary

With the introduction of the Mediant 1000 MSBG, AudioCodes is creating a new category of service provider access solutions, enabling true convergence of the service provider access services in a single, compact, cost-effective product without compromising features and quality.

About AudioCodes

AudioCodes Ltd. (NASDAQ: AUDC) provides innovative, reliable and cost-effective Voice over IP (VoIP) technology, Voice Network Products, and Value Added Applications to Service Providers, Enterprises, OEMs, Network Equipment Providers and System Integrators worldwide. AudioCodes provides a diverse range of flexible, comprehensive media gateway, and media processing enabling technologies based on VoIPerfect™ – AudioCodes' underlying, best-of-breed, core media architecture. The company is a market leader in VoIP equipment, focused on VoIP Media Gateway, Media Server, Session Border Controllers (SBC), Security Gateways and Value Added Application network products. AudioCodes has deployed tens of millions of media gateway and media server channels globally over the past ten years and is a key player in the emerging best-of-breed, IMS based, VoIP market. The Company is a VoIP technology leader focused on quality and interoperability, with a proven track record in product and network interoperability with industry leaders in the Service Provider and Enterprise space. AudioCodes Voice Network Products feature media gateway and media server platforms for packet-based applications in the converged, wireline, wireless, broadband access, cable, enhanced voice services, video, and Enterprise IP Telephony markets. AudioCodes' headquarters are located in Israel with R&D in the U.S. Other AudioCodes' offices are located in Europe, India, the Far East, and Latin America.

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