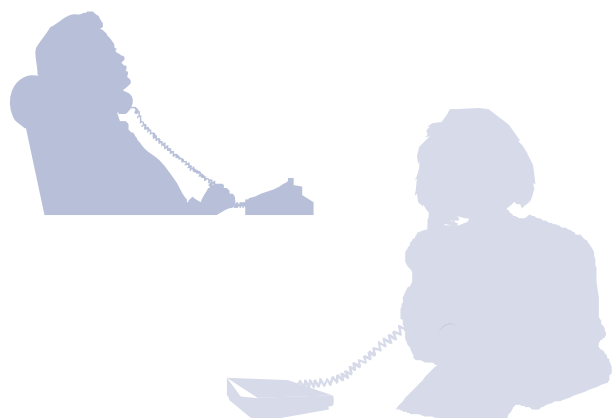
Application Note

Voice over Broadband (VoB) Telephony



Broadband proliferation is continuing at a rapid rate globally, enabling a new method for delivering residential and SOHO users with telephony services.

AudioCodes' comprehensive set of media gateways, along with proven partnerships with Softswitches and Application Servers, are allowing incumbent and competitive operators to launch telephony services more efficiently than ever before.

AudioCodes

The global market for broadband access is continuously growing. Independent market researchers claim that by 2007 there will be approximately 250 million broadband lines worldwide. Broadband access, which is offered over DSL or cable infrastructure, is enabling a large number of Voice over Broadband (VoB) services, some of which are offered by providers who are new to the field of telecom. Internet Services Providers (ISP) are becoming Internet Telephony Service Providers (ITSP) by bundling voice services with their data services, and are targeting residential and Small Office/Home Office (SOHO) customers. Independent market reports project that from 20 million VoB lines in 2005, we will see over 90 million VoB lines in 2008.

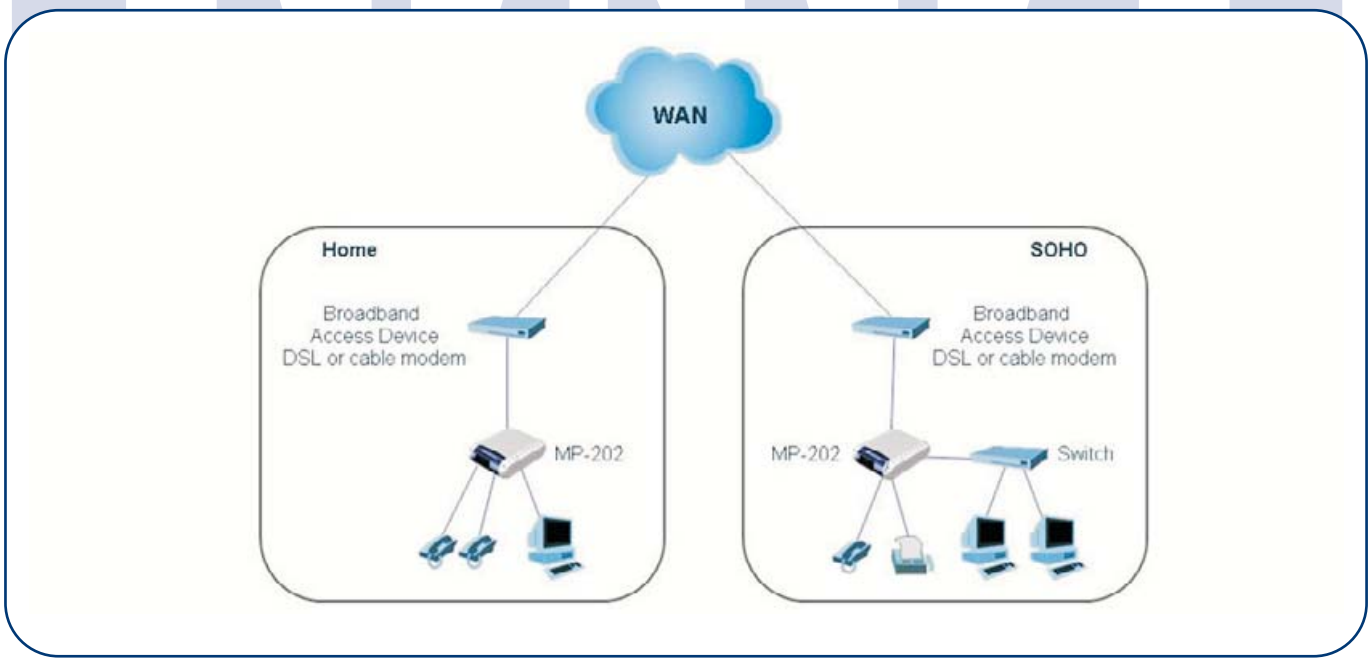
A typical VoB network includes the following elements:

- Telephone Adapters for connecting residential and SOHO users
- Softswitch and Application Server for call control, signaling, and network services
- Media Server for playing tones and announcements as well for enhanced services such as conferencing
- Trunking gateways for interconnecting to the Public Telephone Switched Network (PSTN)
- Session Border Controllers (SBC) for interconnecting to other VoIP networks

AudioCodes' wide range of Media Gateways and Media Servers is best suited for deploying a powerful, reliable and scalable VoB network. With a comprehensive product line, over a decade of experience, and a massive installation base, AudioCodes is the ideal vendor for the gateway and media server needs of any service provider deploying a VoB network. At the heart of the VoB network is the AudioCodes' MediaPack™ MP-20x Telephone Adapters.

MP-20x Telephone Adapters

A member of the MediaPack™ series of analog VoIP gateways, the MP-20x series of Telephone Adapters is a cost-effective, cutting edge product, which allows connecting ordinary analog telephones or fax machines to the core of a VoB network. The MP-20x series typically connects to an existing Broadband Internet device (cable or DSL modem), and establishes a communications path with the Service Provider network via its IP Uplink connection. The following figure outlines 2 typical configurations at the residence and SOHO premises.



The MP-20x series provides up to 2 VoIP ports for connecting up to 2 POTS lines or fax machines. Supporting a rich set of subscriber calling features such as caller ID, Call Forward, and Call Waiting, the MP-20x series maintains a uniform user experience when migrating to VoIP services. In addition, the MP-20x Series serves as a router, supporting connectivity of a PC or LAN hub/switch, and including NAT (Network Address Translation), DHCP, and PPPoE functions required for simultaneous telephone and Internet usage.

Utilizing AudioCodes' VoIPerfect™ core architecture, and benefiting from its experience in providing IP telephony solutions, the MP-20x series combines superior voice quality and "state of the art" features for end users, such as T.38 Fax Relay and G.168-2004 compliant Echo Cancellation. Low Bit-Rate (LBR) vocoders (voice coders) can be used simultaneously on both telephony ports to save valuable bandwidth. The "Voice over Data" prioritization algorithm prevents degradation in voice quality even during large data transfers.

Advantages of deploying a Telephone Adapter

The MP-20x allows the Residential user to experience the same phone service as previously. The user can keep his POTS phone which eliminates the need to learn new information about the interface and usability of an IP-phone, allowing continuous use of the phone service by applying the standard dial pad and flash hook. Residential users who have a cordless phone can continue using them transparently around the house. An additional advantage is that a fax machine with a separate number allocation can be connected.

Due to the support of an internal router and firewall, the MP-20x can be deployed in a configuration which connects the residential users' home PC on the downstream side of the Telephone Adapter further simplifying installation and configuration. This reduces "support calls" to the service provider and enables the residential user to have a smoother migration to VoIP.

Leveraging on the MP-20x routing capabilities, Voice Quality is assured thanks to prioritization of voice packets over data bursts, further enhancing the "VoIP Experience".

A future version of the MP-20x will support a combination of 1 FXS and 1 FXO interfaces. This allows for fallback to PSTN in cases of degraded network quality, permits incoming calls from the PSTN to the same phone and enables the routing of 911 calls via the PSTN to regular PSAP.

Softswitch / Application Server

The MP-20x Series is designed for full interoperability with leading Softswitches and SIP Application Servers for deployment in various network environments. Over the years, AudioCodes has invested significant effort in complying with leading and evolving VoIP standards. Support of the Session Initiation Protocol (SIP), which is commonly found in Voice over Broadband (VoB) networks, assures seamless integration and rapid deployment.

Media Server

AudioCodes' IPmedia™ Media Servers provide enhanced voice services such as network tone and announcements, conferencing and Interactive Voice Response (IVR) capabilities, and messaging. Interoperable with leading Softswitches and Applications Servers, the IPmedia™ Media Servers are controlled to provide a fluent network operation.

Trunking Gateways

AudioCodes' Mediant™ Media Gateways provide a scalable means for interconnection with the PSTN consisting of a broad range of interface signaling (CAS, ISDN, IUA, SS7, M2UA, M3UA). Controlled usage of MGCP, Megaco/H.248 and SIP which are interoperable with leading Softswitches, the Mediant™ Media Gateways enable VoB operators to provide their customers calling capabilities to and from other PSTN networks.

Session Border Controllers (SBC)

Session Border Controllers (SBC) enable VoB networks to peer with other VoIP networks including clearing houses which facilitate cheaper interconnection and reduce long distance calling charges. AudioCodes' gateways are interoperable with market leading SBC.

AudioCodes' gateways have been tested and certified with leading Softswitch Vendors, Application Servers, and Session Border Controllers (SBC).
For a comprehensive and updated list, please visit our web site at **http://www.audiocodes.com/Content.aspx?voip=2018**. For more information please contact your local representative or an authorized AudioCodes dealer.

About AudioCodes

AudioCodes Ltd. (NASDAQ: AUDC) enables the new voice infrastructure by providing innovative, reliable and cost-effective Voice over Packet technology and Voice Network products to OEMs, network equipment providers and system integrators. AudioCodes provides its customers and partners with a diverse range of flexible, comprehensive media gateway and media processing technologies, based on VoIPerfect™ – AudioCodes' underlying, best-of-breed, core media gateway architecture. The company is a market leader in voice compression technology and is a key originator of the ITU G.723.1 standard for the emerging Voice over IP market. AudioCodes voice network products feature media gateway and media server platforms for packet-based applications in the converged, wireline, wireless, broadband access, and enhanced voice services markets. AudioCodes enabling technology products include VoIP and CTI communication boards, VoIP media gateway processors and modules, and CPE devices. AudioCodes' headquarters and R&D facilities are located in Israel with an R&D extension in the U.S. Other AudioCodes' offices are located in Europe, the Far East, and Latin America.

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