

Dialogic® Media Gateways Enable Asterisk® as “Pure” IP-PBX Solution for the SMB Market

Technology Brief

Open source software, such as Asterisk®, has emerged as a leading IP-PBX solution, particularly for the small- to medium-sized business (SMB) market. The flexibility and low cost of open source telephony software attracts developers, resellers, and end users alike. In addition, Asterisk’s use of standard signaling and media protocols, such as SIP and RTP, enables third-party solution providers and OEMs to deliver compatible products to complete or enhance the Asterisk system solution.

This technology brief discusses the benefits of deploying Asterisk as a “pure” IP-PBX with a Dialogic® Media Gateway for PSTN connectivity.

What Is Asterisk®?

Asterisk, a leading open source telephony platform, is frequently deployed as a Private Branch Exchange (PBX) in SMBs. It was originally created by Digium in 1999, and Digium remains the primary developer of Asterisk. Like any PBX, an Asterisk-based PBX is a small version of a carrier’s large central switching office, and it connects calls internally within an organization and also connects calls originating outside the organization on the Public Switched Telephone Network (PSTN). To accomplish this, Asterisk must be connected to the telephones within the organization and to the PSTN.

Asterisk Business Edition™ and Switchvox® products are distributed by Digium, and are leading commercial versions of Asterisk. These products, along with other commercial and open source versions of Asterisk, can be deployed either as a “hybrid” PBX or a “pure” IP-PBX. A hybrid PBX delivers service over copper and LAN/WAN infrastructure to TDM endpoints (analog or digital handsets) and to IP endpoints (IP handsets and softphones). A pure IP-PBX uses a server-based platform that employs packet switching with no TDM switching fabric and delivers service over a LAN/WAN infrastructure to IP endpoints primarily, but may support a small number of TDM endpoints via FXS gateways or Analog Telephone Adapters (ATAs).

Although the hybrid PBX is forecast to remain dominant for the next few years, the popularity of the pure IP-PBX is expected to increase at a steady pace [Infonetics Research, *Enterprise Telephony Market Forecast*, November 24, 2008].

What Is the Dialogic® Media Gateway Series?

The Dialogic® 1000 Media Gateway Series (DMG1000 Gateways) and the Dialogic® 2000 Media Gateway Series (DMG2000 Gateways) are both suitable for use when deploying Asterisk as a pure IP-PBX to provide a PSTN connection. These sets of turnkey appliances seamlessly merge traditional telephony systems with IP networks to help businesses migrate to IP telephony based on IP-PBXs such as Asterisk.

The DMG1000 Gateways and DMG2000 Gateways provide between 4 and 120 channels of analog FXO, Digital Set Emulation, or digital T1/E1-to-SIP gateway capabilities. Featuring unparalleled PBX and direct PSTN compatibility, these appliance gateways are easy to install, configure, and maintain, and are tested for interoperability with Asterisk Business Edition™ (ABE) through the Asterisk Interoperability Partner Program.

Deploying Asterisk as a pure IP-PBX with a Dialogic Media Gateway (in this case, a DMG1000 or DMG2000 Gateway) offers several benefits, including:

- **Simplified System Integration** — Only the Asterisk software needs to be integrated on the target IP-PBX platform; the Dialogic Media Gateway is an external “plug-and-play” appliance.
- **Flexibility** — Expansion board bus type, form factor, or number of slots are not constraining factors for a software solution such as Asterisk, allowing a wide choice of computing platforms; the Dialogic Media Gateway is not affected by the choice of computing platform.

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- **Distributed Architecture** — The Dialogic Media Gateway can be located with the PSTN service or PBX, while the Asterisk IP-PBX can be located in a more controlled environment with other business application servers.
- **Deployment and Management Simplicity** — Commercial versions of Asterisk, such as ABE and Switchvox, as well as the Dialogic Media Gateways have web-based interfaces, which provide very simple configuration and management.
- **International Approvals, Distribution, and Support** — Dialogic Media Gateways have a broad selection of international approvals for network connection and can ease the deployment of Asterisk, which can be installed on locally sourced host computing platforms.

Additional benefits of using a Dialogic Media Gateway with Asterisk include:

- Availability of Dialogic® Pro™ Standard Per Unit Plan support contracts
- Detailed configuration guides

Enabling the Solution

Figure 1 provides a simple example of how Asterisk and a Dialogic Media Gateway can be deployed at an SMB. The Asterisk server is configured as a pure IP-PBX, and PSTN connectivity is supplied by the Dialogic Media Gateway. Standard SIP endpoints, such as handsets, softphones, or ATAs, are “connected” to the Asterisk server across a LAN using the SIP registration process. The Dialogic Media Gateway is also registered via SIP with the Asterisk server.

The Dialogic Media Gateway uses SIP signaling to notify the Asterisk server when calls from the PSTN are received. The Asterisk server uses SIP signaling to redirect calls via an RTP media stream directly from the gateway to the appropriate SIP endpoint. Calls can also be terminated on the Asterisk server via SIP and RTP for call processing functions such as IVR and messaging.

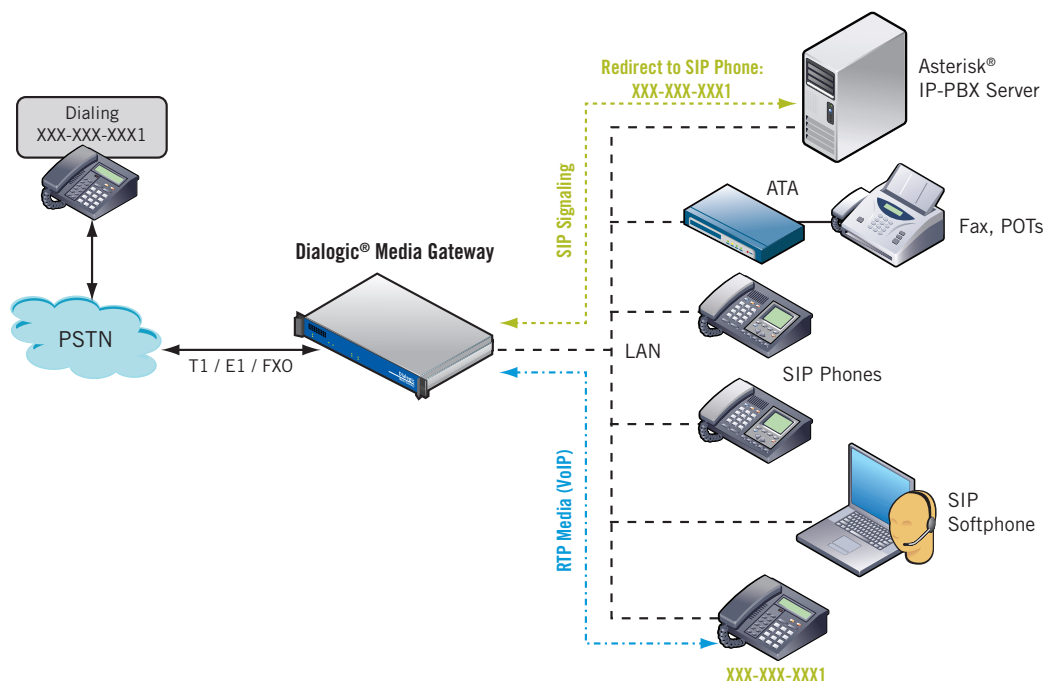


Figure 1. Sample Asterisk Business Edition™ Deployment Diagram

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