

PBX Integration for Asterisk®-Based IP Media Servers Using Dialogic® Media Gateways

Technology Brief

Open source software such as Asterisk® has emerged as a viable telephony service creation platform used to create innovative communication applications that can be integrated with existing PBX infrastructures. The flexibility and low cost of open source telephony software attracts developers, resellers, and end users alike. However, providing reliable and interoperable PBX signaling between an IP media server and the wide range of installed PBX systems worldwide can be a significant challenge.

This technology brief discusses the benefits of integrating Asterisk-based IP media servers with an existing PBX infrastructure using a Dialogic® Media Gateway (DMG Gateway).

What Is Asterisk®?

Asterisk is a leading open source telephony platform that is frequently deployed as a Private Branch Exchange (PBX) in small to mid-sized business sites (SMBs). It was originally created by Digium in 1999, and Digium remains the primary developer of Asterisk. More recently, Asterisk has emerged as a platform for creating innovative communication applications that can add value to existing PBX systems for both vertical and horizontal markets. The applications span creative new interactive voice response systems as well as automated contact center solutions, and can include unified messaging, unified communications, conferencing, and predictive dialing capabilities.

Asterisk Business Edition™, distributed by Digium, is a leading commercial version of Asterisk. This product, along with other commercial and open source versions of Asterisk, can be deployed as a cost-effective IP media server adjunct — a pure software solution resident on a standard computing platform that communicates via SIP signaling and RTP media streams over a LAN or WAN data network. As with any media server adjunct, necessary functions such as advanced transfers and message indicator control must be performed consistently and without failure in order to deliver a first rate solution to the SMB and enterprise markets. To deploy Asterisk as an IP media server adjunct requires advanced PBX signaling protocols and tested interoperability.

What Are Dialogic® Media Gateways?

DMG Gateways are turnkey appliances that can seamlessly merge traditional telephony systems with IP networks to help businesses adopt innovative telephony solutions deployed on IP media servers.

The Dialogic® 1000 Media Gateway Series (DMG1000 Gateways) and Dialogic® 2000 Media Gateway Series (DMG2000 Gateways) are suitable for use when integrating Asterisk-based IP media servers with an existing PBX infrastructure. These gateways provide between 4 and 120 channels of analog FXO, Digital Set Emulation (DSE), or digital T1/E1-to-SIP gateway capabilities. Featuring a high degree of PBX compatibility, both DMG1000 and DMG2000 Gateways are easy to install, configure, and maintain, and have been tested for interoperability with Asterisk Business Edition (ABE) through the Asterisk Interoperability Partner Program.

Deploying Asterisk as an IP media server with a DMG1000 or DMG2000 Gateway offers several benefits, including:

- **Unique PBX Integration Technology** – DSE is a unique technology on the DMG1000 Gateways that uses proprietary PBX signaling and media channels to allow control of the PBX from adjunct applications. DSE is compatible with a variety of popular PBXs and handsets from manufacturers including Alcatel, Avaya, Ericsson, Fujitsu, Mitel, NEC, Nortel, and Siemens.
- **Broad Support for PBX Protocols and Advanced Signaling** – The DMG1000 and DMG2000 Gateways support supplementary services on CAS, QSIG, Euro ISDN, NI2, DMS100, and 5ESS protocols, enabling call transfer, call hold, Message Waiting Indicator (MWI), and call party information. These features help retain key supplementary services in the new IP environment.
- **Simplified System Integration** — Because DMG1000 and DMG2000 Gateways are external “plug-and-play” appliances, only the Asterisk software needs to be integrated on the target IP media server computing platform.

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- **Flexibility** — Expansion board bus type, form factor, and number of slots are not constraining factors for a software solution such as Asterisk, allowing a wide choice of computing platforms. DMG1000 and DMG2000 Gateways are not affected by the choice of computing platform.
- **Distributed Architecture** — A DMG1000 or DMG2000 Gateway can be physically located with the PBX, while the Asterisk based media server can be located with other business application servers in a more controlled environment.
- **Deployment and Management Simplicity** — Commercial versions of Asterisk (such as Asterisk Business Edition), and DMG1000 and DMG2000 Gateways have web-based interfaces that provide very simple configuration and management.
- **International Approvals, Distribution, and Support** — DMG1000 and DMG2000 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.
- **Dialogic® Pro™ Standard Per Unit Plan Support Contracts** — These support contracts harness the power of Dialogic to provide high levels of availability and performance from a DMG1000 or DMG2000 Gateway.

Enabling the Solution

Figure 1 provides a simple example of how an Asterisk-based telephony application can be deployed as an IP media server adjunct into a legacy PBX environment using a DMG1000 or DMG2000 Gateway. In this example, the DMG Gateway can do all of the following:

- Connect to the legacy PBX system via analog or digital PBX ports and protocols
- Convert the signaling and media stream to SIP and RTP
- Communicate over the LAN or WAN infrastructure to one or more Asterisk-based media servers

PSTN and PBX station calls can be routed to and from the Asterisk-based IP media server through the gateway using both PBX and Asterisk routing engines and rules. The DMG Gateway supports advanced transfers and many other supplementary services required by media adjunct applications.

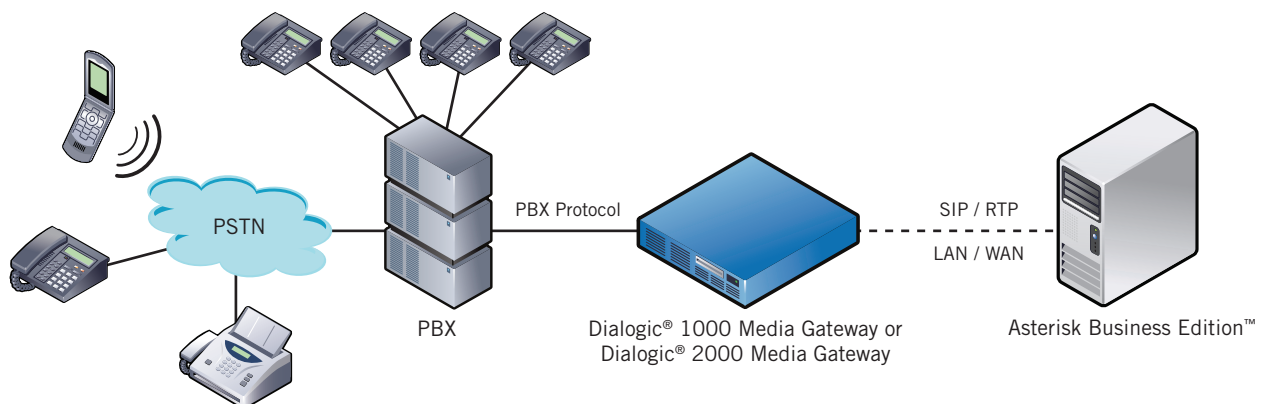


Figure 1. Example of an Asterisk Business Edition™ Deployment with a Dialogic® Media Gateway

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