



## EMDEON



### CASE STUDY

### ASTERISK IP-PBX, DECEMBER 2008

#### OVERVIEW

Emdeon Business Services is the industry leader in health care Electronic Data Interchange (EDI) services. They act as a clearinghouse for EDI transactions in all mandated formats, connecting providers to payers across the United States and its territories.

Emdeon empowers healthcare providers through innovative revenue cycle management solutions by tapping the most complete network of providers, payers, and patients in the healthcare industry. Their unique, efficient services simplify the business of healthcare to save clients time and money so they can focus on what's most important; their patients.

### Asterisk Implemented for Maryland's Medicaid Management Information System

#### CHALLENGE

Emdeon required a solution for a federally mandated telephone inquiry system that gave health care providers the ability to quickly and efficiently verify a Medicaid recipient's current eligibility status. This service needed to be available 24 hours a day, 7 days a week and 365 days a year. It would be an integral part of Maryland's Medicaid Management Information System (MMIS) in support of the state's medical care programs.

Since Emdeon was bidding for a state contract, they had to be able to offer a sleek, innovative, and cost effective system. Additionally, project specifications required "state of the art" technology for every aspect of the IVR. Time to market was also critical because the state's existing system was plagued with recurring issues, lack of hardware, and an unfavorable customer interface.

#### SOLUTION

Emdeon was in the process of comparing several IVR solutions to replace their existing, legacy IVR systems. Favored by the developers for its openness, flexibility, and vast support community, Asterisk was being compared to solutions from IBM, Microsoft, and Voxeo. When the bid for the State of Maryland's IVR opened, the time to market and budget made Asterisk Business Edition, paired with Cepstral Swift, the obvious choice. Utilizing Asterisk as the telephony platform easily satisfied the list of requirements for both the State of Maryland and Emdeon.

Its cost and flexibility made it a natural fit. With this system, a provider is greeted and asked to enter his provider number when the provider call is received. After the number is validated, the provider is prompted to enter the insurance recipient's information and date of service. The system queries the eligibility database and formulates eligibility and coverage details. The eligibility and coverage information is then spoken back to the provider.

## IMPLEMENTATION

Asterisk was used as the backbone of this project. Aside from some database maintenance, all the functionality was contained within the Asterisk dial plan. This includes answering incoming calls, prompting for specific information, formulating database queries based on caller input, generating eligibility response content based on query results, and delivering response content utilizing both TTS and recorded voice.

Emdeon implemented Asterisk Business Edition. The configuration at each location distributed calls between Baltimore, Maryland and Nashville, Tennessee. Digium TE110P and TE205P telephony cards were used within Dell PowerEdge servers. Cepstral Swift Engine for product text to speech and Cepstral Swift Voice were also implemented as well as MySQL 5.0 Database server licenses.

A custom ODBC module, which is now a part of the standard Asterisk installation, gave the system the ability to query a database directly from the Asterisk dial plan. This enabled verification and tracking of provider participation in addition to the ability to retrieve patient eligibility information for verification purposes. They were also able to dynamically retrieve Provider Announcement messages that are spoken back via the Cepstral Swift TTS engine.

## RESULTS

Utilizing Asterisk as a solution, Emdeon was able to complete development, pilot testing, and production release prior to the state's scheduled date for the termination of the old system. The intrinsic VoIP capabilities of Asterisk enabled Emdeon to prototype, build, and test the solution long before telco services were completed.

Many groups have benefitted from this system, including Maryland Medicaid providers (physicians and hospitals), Maryland Medicaid recipients, Maryland Medicaid payers (The State of Maryland DHMH) and Emdeon Business Services themselves. All groups have seen savings including reductions in setup cost and operational expenses.

Emdeon has provided scalability, extensibility, and flexibility to their phone system through the Asterisk platform. Emdeon was able to support the increase in call volume without adding additional IVR servers through the installation of additional T1 cards. By customizing the dial plan, Emdeon enabled database queries based on caller input, generation of eligibility response content based on query results, and delivery of response content utilizing both TTS and recorded voice.

Emdeon has had such success with Asterisk that they are beginning to research other areas within the healthcare industry where an IVR would be both useful and profitable. Emdeon intends to keep using Asterisk for its IVR platform and Cepstral Swift for TTS. Additionally, they have also begun to use i6net's VXiAsterisk for VoiceXML and LumenVox for speech recognition.

*Digium's vision is a world based upon open communications.*

*Our mission is to transform the way businesses acquire and operate their communications systems through the application of open source software.*



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