

Description:

This is a complete web based Meaningful Use Stage 1 Certified EHR/EMR application which provides comprehensive solutions to a physician's needs. The application provides means for storing and retrieving patient records across clinics. This is a robust system, which allows user-based permissions on modules, pages and even controls inside pages. Every page allows users to create their own lookup values and allows complete end-user customization. Some of the functionalities provided are

- Patient- Search based on multiple parameters,
- Patient dashboard which lists all vital information like demographics, active medical problems, current medications etc.
- Ability to create visits (encounters),
- Ability to assign/forward the visits to any physician/specialist in the hospital,
- Pulling out previous medical information from past encounters with just one click
- Ability to drill down to any past visit at any given time

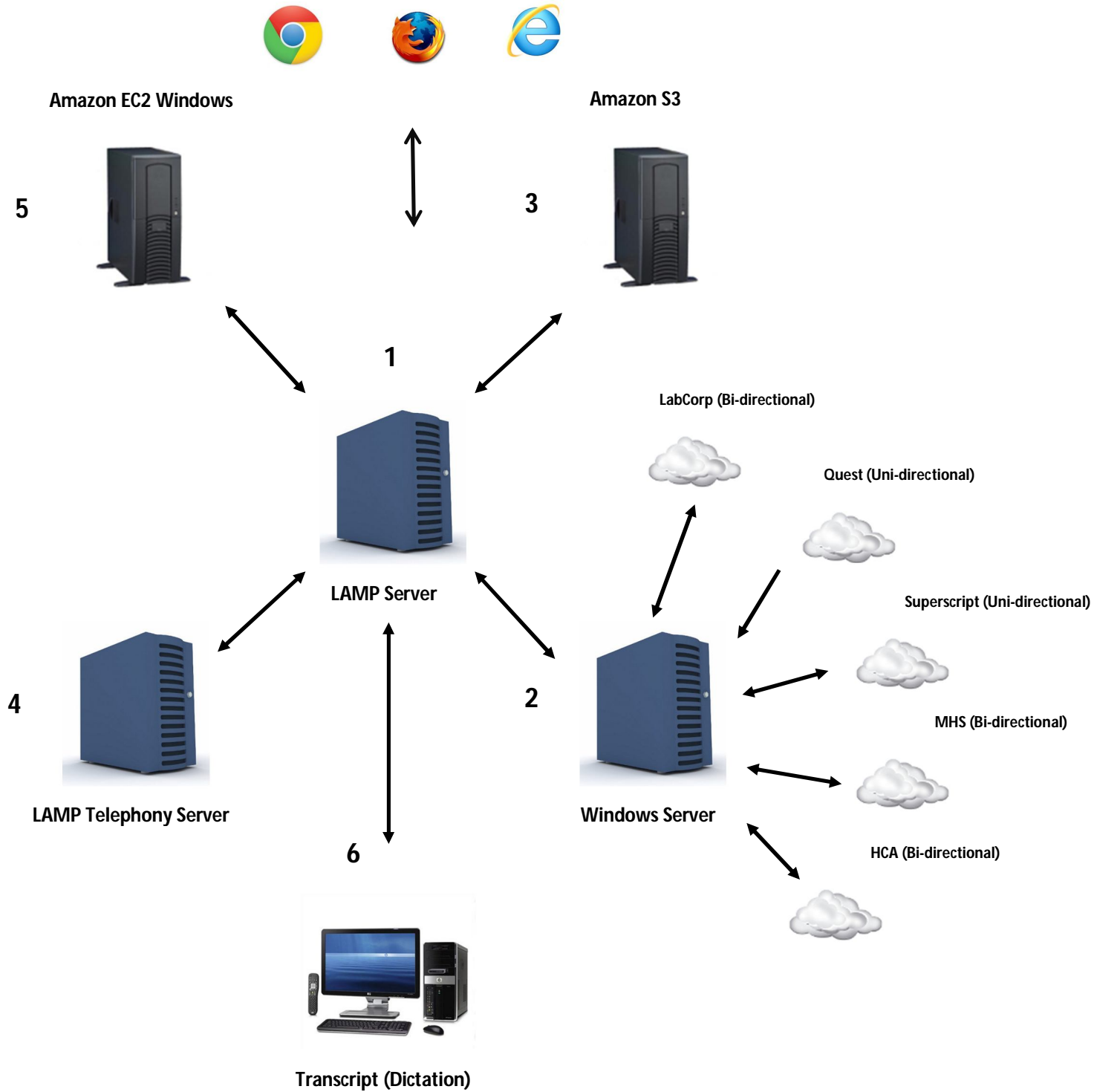
The system is designed by keeping complete performance optimization in mind. This web application is comprehensive enough to compete with any conventional windows based EMR/EHR system. An automated billing application is also built into the system which allows claims to be sent to insurance companies, get real time verification done, and make it possible to receive payment electronically; doing away with the need of any paper work which was required earlier. The system is available in a variety of configurations to suit the needs of small practices as well as large organizations. Its architecture has been designed to allow for rapid adaptation for new requirements. The product concept embraces and supports the idea of health information exchange so that the EMR for any given office is no longer a barrier for forming a RHIO.

Technologies:

LAMP, JavaScript, jQuery, HTML5, web services, SOAP, TCP/IP, XML, Amazon S3, Amazon EC2, HL7, ANSI 5010

Features:

- Stage 1 Meaningful use certification under HITECH Act.
- Bi-directional Rx (order + refill requests) interface with Surescript using FDB (Drug Database)
- MdScript interface for Rx ordering.
- Uni-directional Lab interface for receiving Lab results from Quest.
- Bi-directional Lab interface for sending/receiving order/results with Labcorp(including 2D barcode certification and ABN API check implementation for Medicare).
- Uni-directional Lab interface for receiving Lab results from HCA(Hospital Corporation of America).
- HIE (Health Information Exchange) integration with MHS for sharing ADT, MDM, ORU etc.
- Transcription Interface with ability to Move recorded dictations from Asterisk to Amazon S3, Parse Word documents into server and store on Amazon S3, Auto-matching documents/Digital Signing of documents.
- Faxing service interface with sFax for exchanging patient records.
- HCFA 1500 Claim Form.
- 270 / 271 (Real time insurance Verification).
- 837 / 997 (Electronics Claims).
- 835 (ERA, insurance Payments).
- Google Map integration for showing the route direction for clinics.
- Tracking various trends including vitals, labs and drugs across all clinics.
- HTML5 videos for help and canvas to enable drawing on images and saving to S3.
- Migrating all doctor related features to Touch Enabled. We are currently using Apple iPads for doctors to enhance and speed up workflow and reduce visit time with doctors to let them see more patients.
- The Touch services implement JSON for data exchange and are also being used for interfacing with Droid and iPhone apps, on which we are currently working on.



System Architecture

Server 1

It is a LAMP server which communicates with all other servers. The Code and the database are hosted here.

Server 2

This is a windows server and all .NET services are running on it to communicate with all other external services. All services running on this server connects to server 1's DB.

LabCorp service is running for bi-directional lab order and result communication. HL7 data communicates using TCP/IP between LabCorp and the application.

Quest service is running for receiving only lab results from Quest in HL7 format using TCP/IP. Surescript services are running for pharmacy list update, physician registration, new Rx and refill requests using http.

MHS services are running for bi-directional data exchange (ADT, ORU, MDM) in HL7 format using TCP/IP.

HCA services are running for receiving lab, radiology, transcription in HL7 format using file dropping mechanism.

Server 3

This server is used for storage purpose like storing voice files, transcript documents, patient documents etc.

Server 4

This is a LAMP telephony server where Asterisk code is running for patient reminder calls and voice recording.

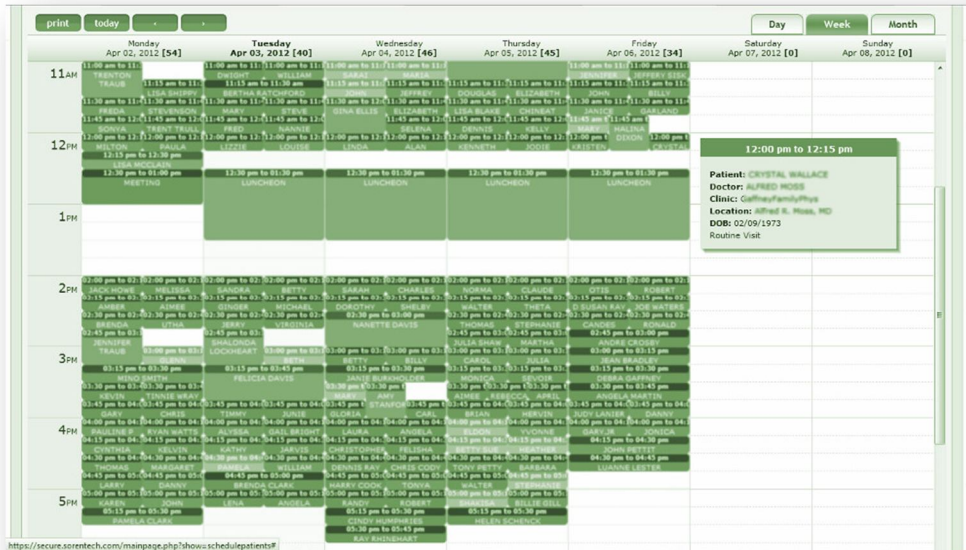
Server 5

This is a windows server. Mirth server is running over here. Mainly, this server is use for staging.

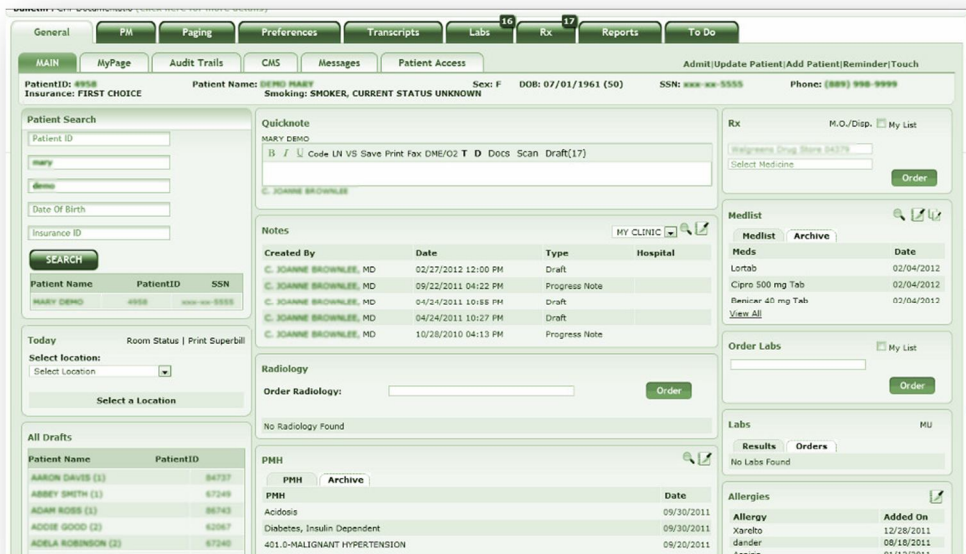
Server 6

This is a system where word parser is running and is used by people doing the transcription job. They put the word document in a folder post which the parsing occurs. The server needs MS Word installed in it.

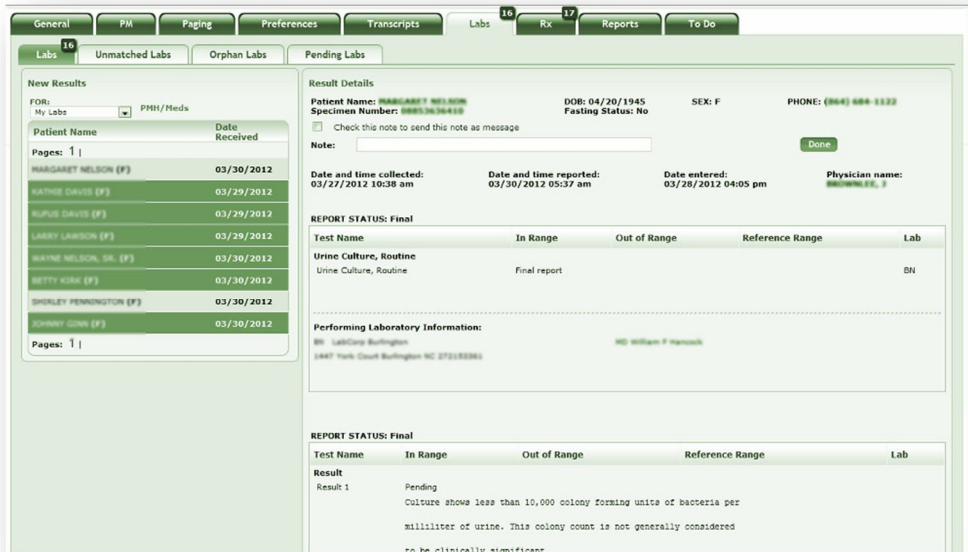
Screenshots:



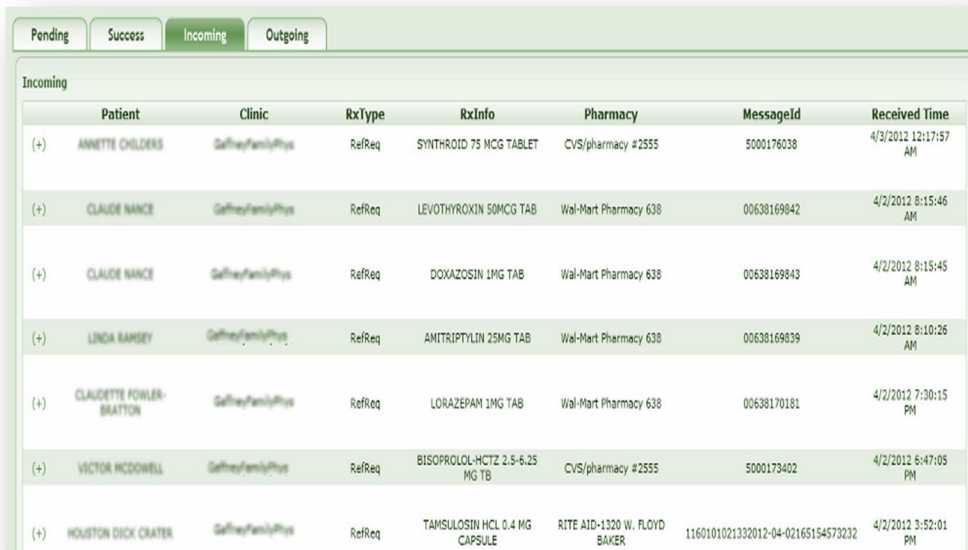
Screen 1: Scheduler used to schedule and track appointments of patients. It offers many features like setting reminders, searching for slot availability, checking insurance coverage eligibility etc.



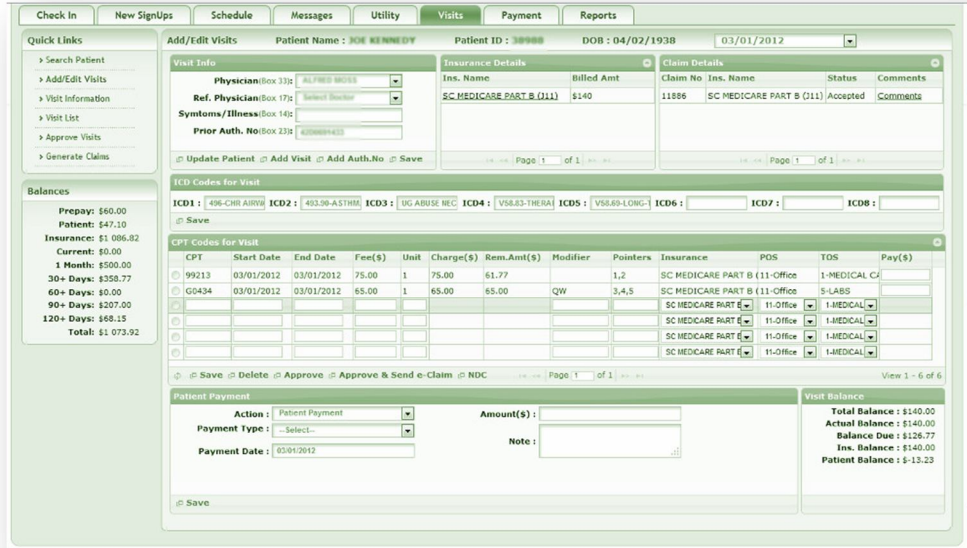
Screen 2 : Patient dashboard which lists all patient records including medication, lab results, allergies, diagnosis, vitals, radiology reports etc. all in a single window



Screen 3: Lab Screen which shows all lab results received in detail, pending labs results and all lab orders sent.



Screen 4: Rx Screen lists all pending e-prescription for physician approval, success/error sending list and refill requests.



Screen 5: Billing screen is used for visit's code (CPT & ICD) entry and real-time claim sending to clearing house