OPEN-SOURCE PACS SYSTEM

Picture Archiving and Communication System is a medical system for archiving, storing, querying medical images and communication. PACS Components comprise of

Image Modalities – the imaging system that does the actual scanning of a patient in producing a medical image.

Database to store,index and retrieve images and DICOM files.

Workstation to render the User Interface for viewing the images.

Secure Network to ensure information is protected from unauthorized access.

Examples of PACS System

Orthanc

Orthanc is an open source, modular, lightweight DICOM server designed by Sebastien Jodogne and maintained by a Belgian company called UCLouvain. It has rich documentation, RESTFul API endpoints and several plugins and configurations to support connectivity with different databases and also displaying with different viewers.

Orthanc aims at providing a simple, yet powerful standalone DICOM server. It is designed to improve the DICOM flows in hospitals and to support research about the automated analysis of medical images. Orthanc lets its users focus on the content of the DICOM files, hiding the complexity of the DICOM format and of the DICOM protocol.

Orthanc can turn any computer running Windows, Linux or OS X into a DICOM store (in other words, a mini-PACS system). Its architecture is lightweight and standalone, meaning that no complex database administration is required, nor the installation of third-party dependencies.

What makes Orthanc unique is the fact that it provides a RESTful API. Thanks to this major feature, it is possible to drive Orthanc from any computer language. The DICOM tags of the stored medical images can be downloaded in the JSON file format. Furthermore, standard PNG images can be generated on-the-fly from the DICOM instances by Orthanc.

Orthanc also features a plugin mechanism to add new modules that extends the core capabilities of its REST API. A Web viewer, a PostgreSQL database back-end, a MySQL database back-end, and a reference implementation of DICOMweb are currently freely available as plugins.

Key Features

Lightweight and fast.

Cross-platform (at least Linux, Windows and OS X),

Compliant with the DICOM standard (as it is built on the top of DCMTK),

Programmer-friendly (REST API, JSON, PNG).

Viewer plugins for displaying and managing DICOM files.

Standalone. Extensible plugins and configurations for additional features.

Pros

Easy to setup and management of medical records.

Integrated with different viewer components for display and automated analysis.

DICOM scripting and other functionalities e.g C-Move, C-Store,C-FInd

Cons

Orthanc Explorer not user friendly

OHIF Viewer

Comparative analysis

Feature Set

Ease of use

Scalability

Community and Support

Conclusion