# Building Diagnostic Centers On Cloud

## Advanced Diagnostic Imaging Orders Management & Results Delivery System to Streamline Workflows for Hospitals and Diagnostic Centers

HIPAA Compliant

ONC Certified HealthIT

FHIR HL7

***When Order will be placed then AUTOMATICALLY ....***

- Appointment will be created on Calendar.
- EMR Calendar Sync with Apple/Google Calendar.
- SMS and Email alerts will be send to Patient.
- Worklists will be generated and send to WL Server.
- Modalities will Query their relative Worklists.
- Images with data will be saved to PACS Server.
- Order Status will be updated in EMR automatically.
- Results Link will be send to patient to download.
- Doctors can login and view Patient's Dicom images.
- *Doctors can attach Reports in EMR Order results.*

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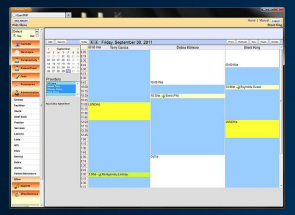
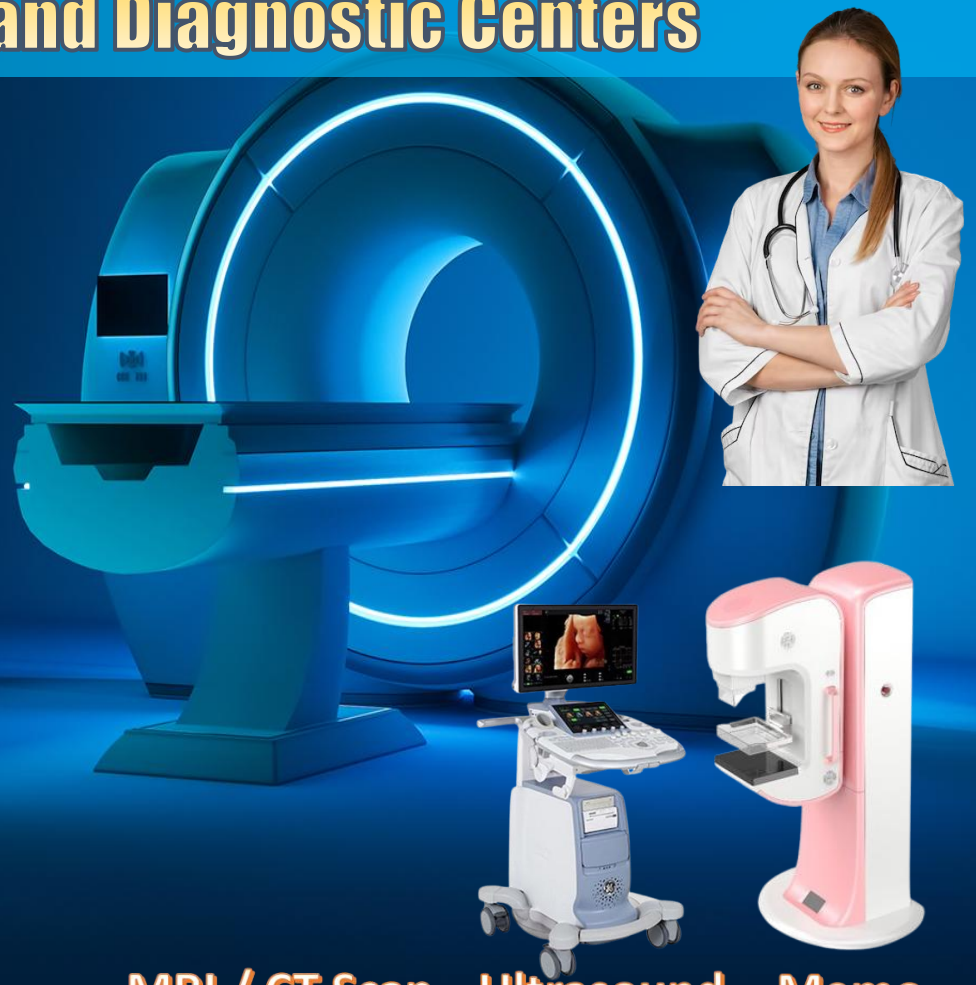


EMR / EHR

- PACS Server
- Work List Server

Local or Remote
Medical Modalities

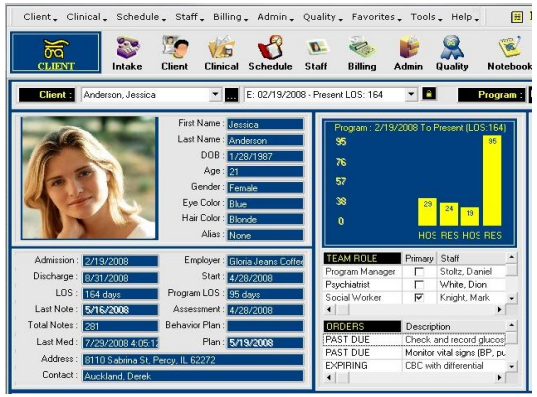


MRI / CT Scan  Ultrasound  Memo

**EMR/EHR Front Desk Software + Integrated RIS**

**Order Form will be saved in DB**

**Auto create Appointment, send SMS Email alerts to patient automatically**



Updated Order Status View

EHR DB Server

Will update Order Status in Database

Fetch Data from Database

**KFTECH** Router Script

**KFTECH** Update Script

DICOM Print Server Software

CD/DVD Burner Software with Dicom images View Utility

INTER NET

Patient will see his dicom images using specific expireable shared link

Doctor Login and View images using cloud Dicom Viewer

Cloud PACS

Worklist Server

After Scan work complete, Modalities send images + data to DICOM PACS Server

Modalities do Query Worklists from Worklist Server

Script will generate .wl files from data and save into worklist server

**MEDICAL MODALITIES**

CTScan, MRI

X-Ray

Ultrasound

Note : All Setup can be on-premises or on-cloud.

# FEATURES - Radiology Imaging Orders Processing Automation System

The Automatic Radiology Imaging Order Processing System is a unique and comprehensive solution designed to streamline and automate the workflow of radiology services within healthcare facilities like Hospitals and Diagnostic Centers. By integrating Radiology Imaging Order taking Forms directly into the Electronic Health Record (EHR) system, this innovative approach eliminates the inefficiencies of managing separate, disconnected systems.

## Key Features :

### Seamless Order Management :

When a medical imaging order is placed in the EHR, system automatically generates appointments and notifies clients via email.

### Effortless Worklist Creation:

Imaging orders are retrieved from the database, converted into worklist files, and sent directly to the worklist server, allowing modalities to access their tasks without manual intervention.

### Real-Time Updates:

After imaging scans are completed, results are automatically uploaded to the PACS server. An integrated script then updates the EHR database with the current status of Imaging Scans, enabling providers to view real-time status.

## *Benefits :*

*This system significantly :*

- ✓ *Reduces Manual Processes.*
- ✓ *Saves Efforts Cost and Time.*
- ✓ *Minimizes Errors & Bugs.*
- ✓ *Enhances Workflow Efficiency.*

*By automating order processing and facilitating seamless communication between various components of the healthcare system, it ultimately improves patient care and speeds up the diagnostic process.*

*In essence, the Automatic Radiology Imaging Order Processing System transforms the radiology landscape by*

- ✓ *fostering integration.*
- ✓ *improving accuracy. and*
- ✓ *enhancing collaboration across teams.*

# Radiology Imaging Orders Processing Automation System

## The Problem and Our Solution :

Many hospitals face challenges due to having separate systems for Electronic Health Records (EHR), Radiology Information Systems (RIS), imaging order processing, PACS, and worklist management. This fragmentation often results in manual handling of radiology imaging orders, leading to inefficiencies and delays.

To address this issue, KFTECH have developed an integrated Imaging Ordering Form within the EHR system. This solution automates the entire process of managing medical imaging orders. When a medical imaging order is placed in the EHR, the system automatically generates an appointment and sends the order via email to the client. The imaging order details are then retrieved from the database, converted into a worklist file, and transmitted to the worklist server. Modalities can access their worklists seamlessly, perform imaging scans, and upload the results directly to the PACS server.

Additionally, an automated script retrieves information from the PACS server and updates the EHR database with the current status of the imaging orders. This allows doctors and providers to view real-time updates directly within the EHR software. As a result, the entire process is streamlined and automated, effectively solving the previous challenges associated with fragmented systems.

## *Importance for Diagnostic Centers and Hospitals*

***Efficiency :*** *Automating the order processing reduces manual errors and speeds up the workflow effectively.*

***Improved Patient Care :*** *Quick and accurate processing of imaging orders ensures timely diagnoses & treatments.*

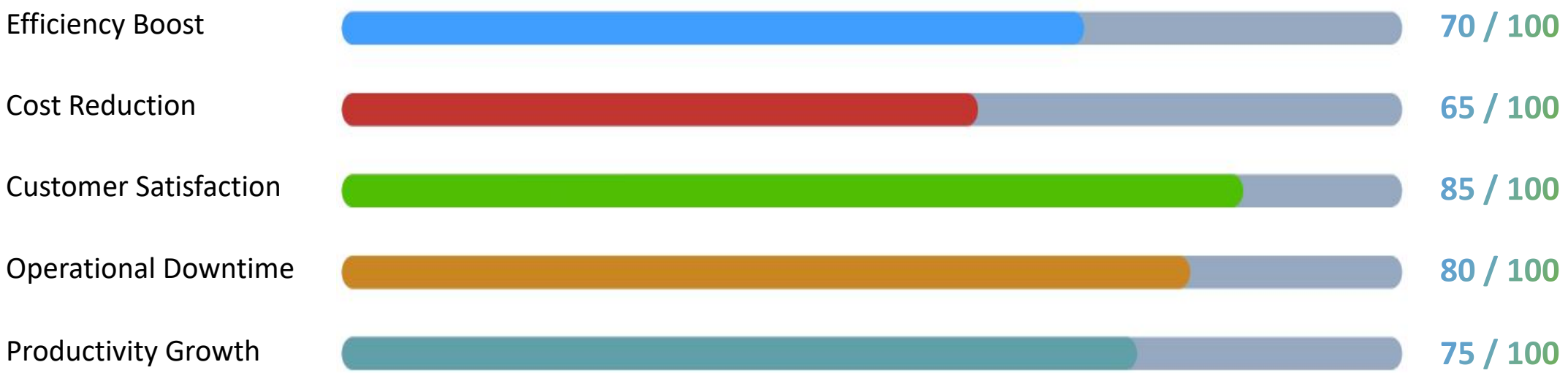
***Data Management :*** *It centralizes patient info, making it easily accessible for radiologists and referring physicians, which improves collaboration and decision-making.*

***Cost Reduction:*** *By minimizing administrative overhead and reducing errors, hospitals can cut costs and allocate resources more effectively.*

# Radiology Imaging Orders Processing Automation System

## Key Point Indicators

after deployment of Automated Radiology Imaging Orders Processing Solution



# Whole System Package Includes :

Patient Management System :

- OpenEMR / EHR Software.
- Custom Image Ordering Form.
- Integrated RIS System.
- Reporting + Voice Dictation.
- Client Digital Signature.

DICOM SERVERS :

- Routing Server.
- DICOM Worklist Server.
- DICOM PACS Server.
- PrintSCP Server (optional).
- CD/DVD Burner Server (optional).

Integrations :

- Google Calendar Syncronization.
- Apple iCalendar Syn (Optional).
- EMAIL Alerts Notifications.
- SMS Alerts Notifications.
- Image View Expirelable Link.

DICOM Viewer (Optional) :

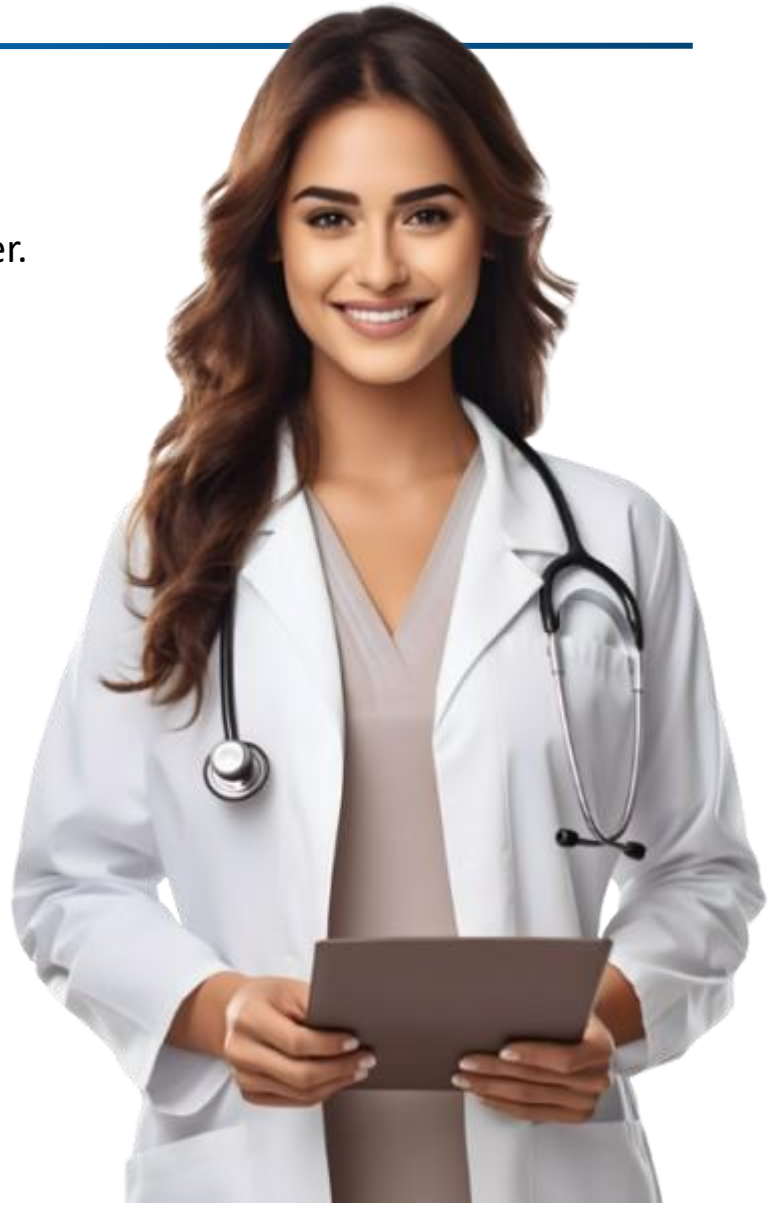
- Cloud Based OHIF DICOM Viewer.
- Desktop Based MicroDICOM Viewer.
- DICOM Nodes Monitoring System.

Customizations :

- Customize EMR.
  - Logo and Favicon.
  - Title Lines.
  - Top Menu Navigation.
  - 5 Custom Forms.

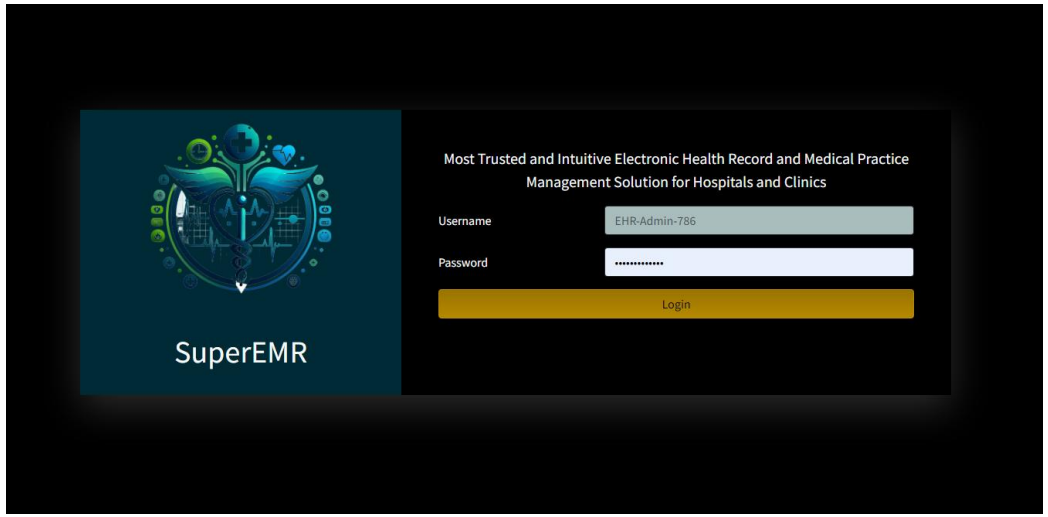
Connectivity :

- EMR + RIS with Worklist Server.
- Worklist Server with Modalities.
- Modalities with PACS Server.
- PACS Server with EMR.
- PACS Server with PrintSCP Server.
- PACS Server with DICOM Viewer.
- PACS Server with CD/DVD Burner.

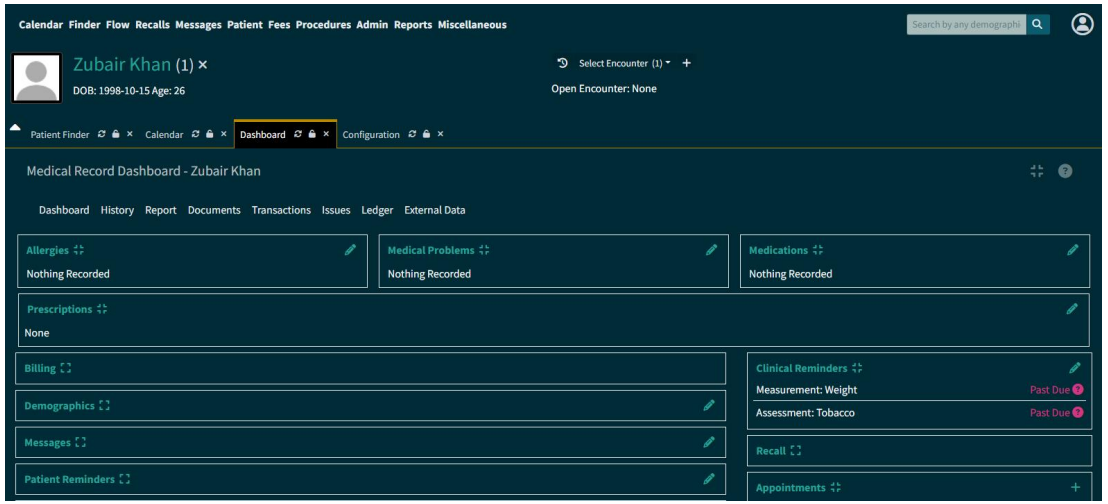


# Customized EMR with Integrated RIS system :

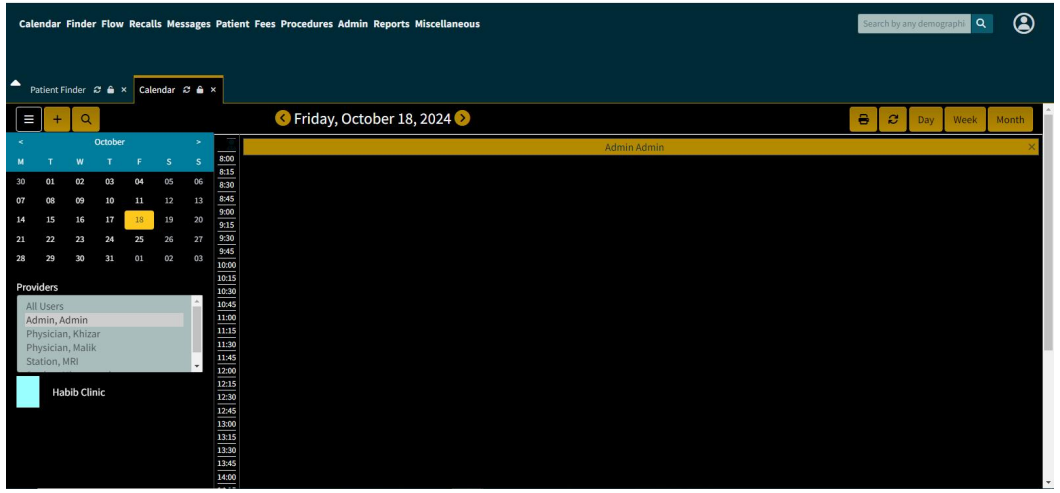
## Login Screen with Custom Logo and Theme



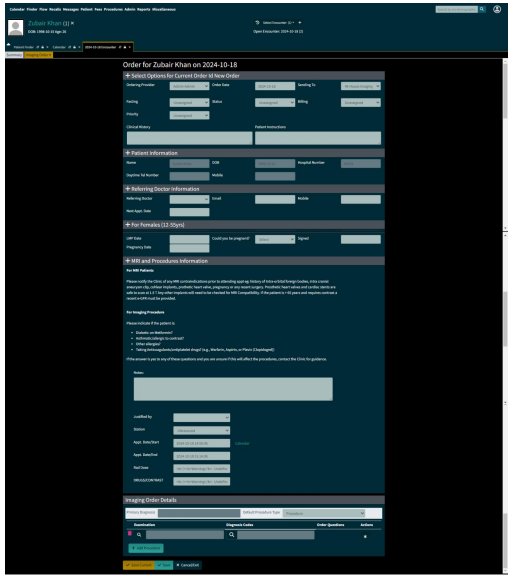

## Patient Dashboard with Custom Sections



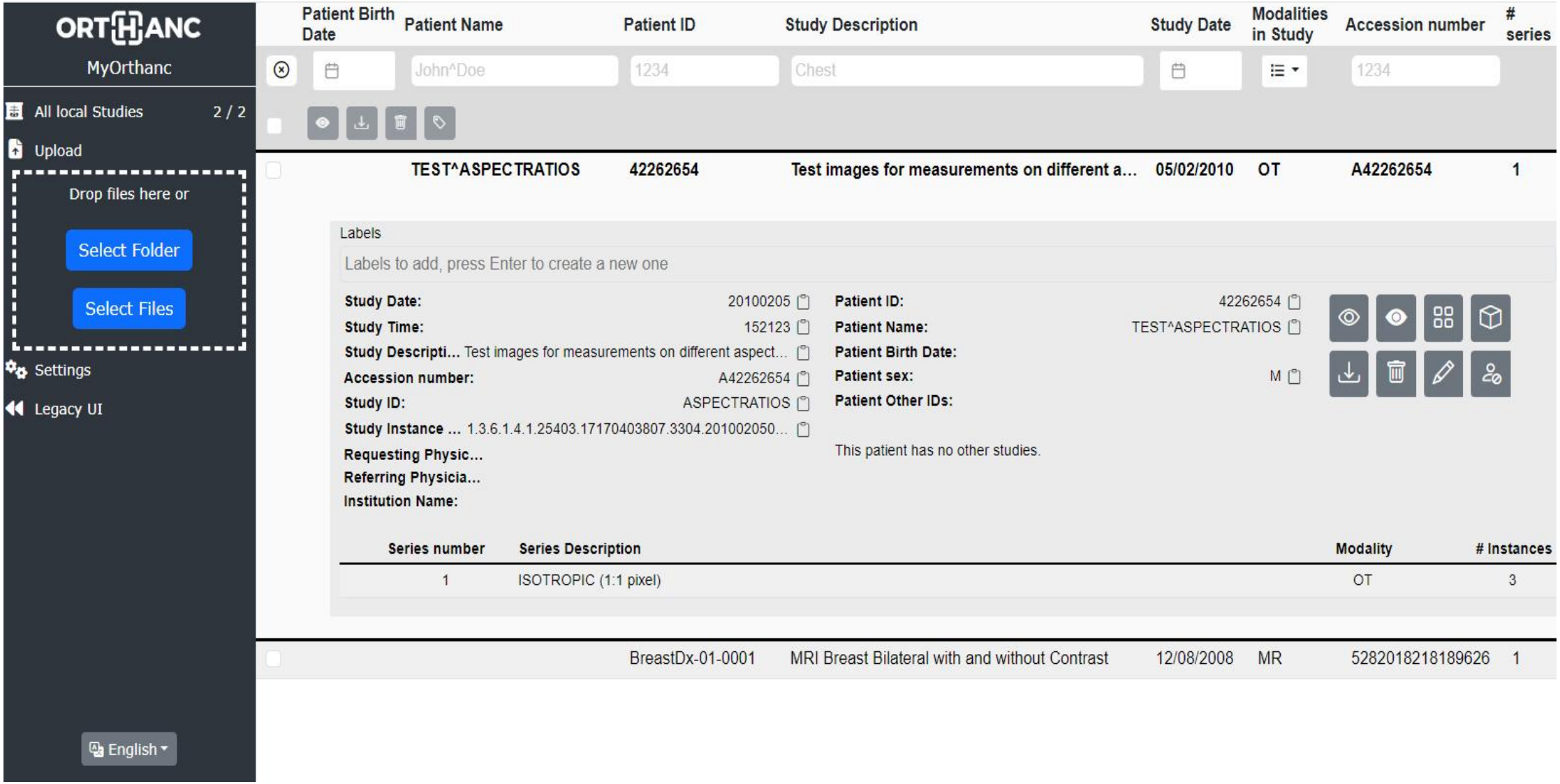

## Calendar - Customized Theme




Customized Radiology Imaging Order Taking Form with Custom Fields which are required to create Worklist Files. Our custom Script take data and generate worklist and send to Worklist Server.

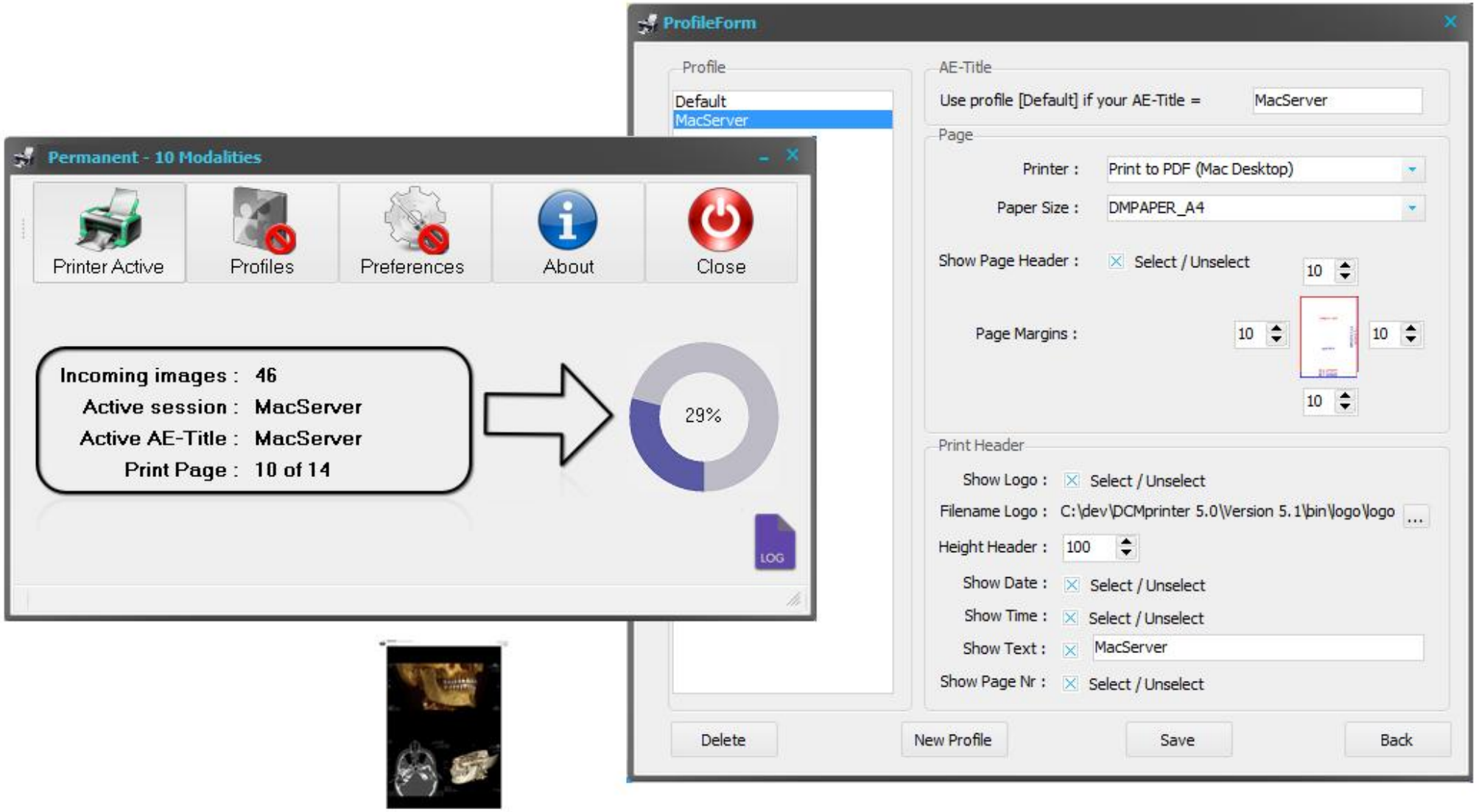


# PACS Server + Integrated Worklist Server :

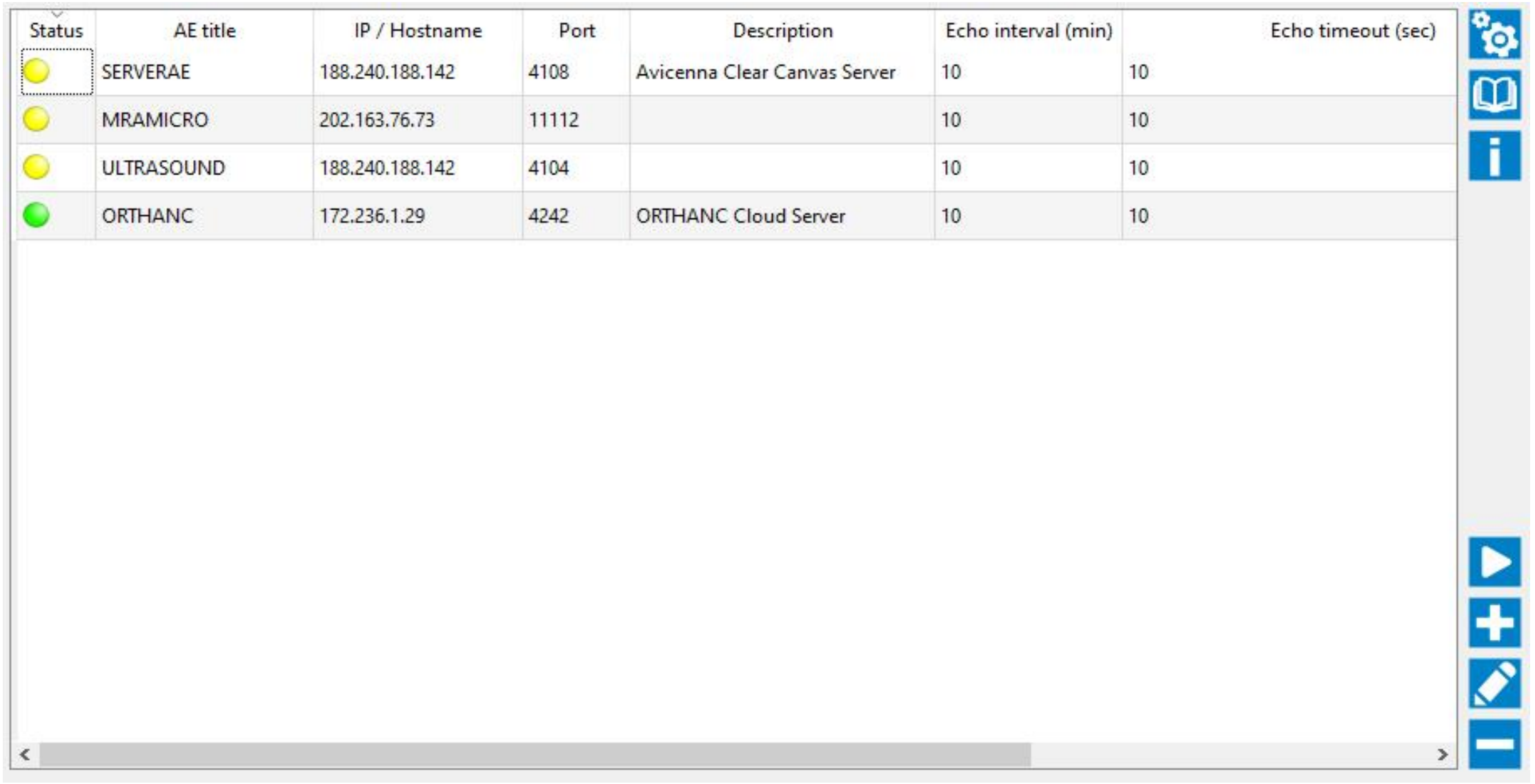


# Cloud based DICOM Images Viewer :

# DICOM PrintSCP Server :



# DICOM Node Monitoring :



| Status | AE title | IP / Hostname | Port | Description | Echo interval (min) | Echo timeout (sec) |
|---|---|---|---|---|---|---|
| | SERVERAE | 188.240.188.142 | 4108 | Avicenna Clear Canvas Server | 10 | 10 |
| | MRAMICRO | 202.163.76.73 | 11112 | | 10 | 10 |
| | ULTRASOUND | 188.240.188.142 | 4104 | | 10 | 10 |
| | ORTHANC | 172.236.1.29 | 4242 | ORTHANC Cloud Server | 10 | 10 |

# THANKS