INNOVATION · CARE · SAVINGS

Puru PACS. One platform for RIS, PACS & Teleradiology.

Puru PACS replaces the patchwork of scanner consoles, film printers, teleradiology apps, patient-share portals and reporting tools with a single on-premises platform — **engineered by Puru Labs**, **caring for the patient journey**, and **saving film, courier and license costs** every single day.

RIS · Modality Worklist
PACS · DICOM Storage
Teleradiology
Diagnostic Viewer
Zero-Footprint Browser Viewer
3D MPR & MIP
Puru Pixel · Film Print
Consultant & Patient Link Share
HL7v2 · FHIR · HIS Integration
WhatsApp · Email · SMS Alerts

7+
Modalities supported (CT, MR, CR, DR, DX, US, XA)

3
Native viewers (Desktop · Browser · Film)

3D
MPR + MIP with hanging protocols

2
Secure link-share rails (Consultant · Patient)

01 · OVERVIEW

END-TO-END

One system, from order to report.

Puru PACS is not a stitched-together stack. RIS, PACS and Teleradiology are one code base, one database, one operational surface — deployed inside your hospital for speed and data sovereignty, with an optional cloud lane for remote reporting, consultant collaboration and patient self-view.

01 · RIS
Order & Worklist
HIS creates order → PACS creates study → Modality pulls DICOM Modality Worklist.

02 · PACS
Acquisition
Modality pushes images via DICOM C-STORE. Auto-filed by patient · study · series.

03 · Cloud
Teleradiology Upload
Rule-based cloud upload with retry pipeline and per-instance status tracking.

04 · Read
Remote Radiologist
Radiologist reads in the browser viewer, writes report with auto-save + templates.

05 · Report
PDF · Word · HIS
Report returns to hospital, delivered on WhatsApp / Email, pushed back to HIS.

THE UNFAIR ADVANTAGES

ON-PREM FIRST

Your images live in your hospital.

Local DICOM storage with dual-write redundancy. Reports are generated on-site. Cloud lanes are opt-in, per modality.

HIS-INTEGRATED

Deep two-way link with any HIS.

Native to Puru HAS, and speaks HL7v2 and FHIR R4 for third-party HIS. Deep-link resolver launches viewers from Accession or UHID / MRN.

VENDOR-NEUTRAL

Any DICOM-compliant modality.

Standard C-STORE and C-FIND on hospital-controlled ports. No proprietary protocols. CT, MR, CR, DR, DX, US, XA and Structured Reports.

3 VIEWERS, BUILT-IN

Desktop · Browser · Film.

Diagnostic desktop viewer for on-prem, zero-footprint browser viewer for teleradiology and link-share, dedicated film-print application.

What replaces what

REPLACES	WITH
Standalone PACS box	**Puru PACS** on-prem
Modality worklist server	**RIS + MWL**
Third-party tele-rad app	**Puru Teleradiology**
DICOM print station	**Puru Pixel**
Patient CD / film pickup	**WhatsApp link share**
Consultant courier / email	**Consultant link share**
Report typing tool	Rich editor + templates

Bottom line: one vendor, one support number, one upgrade cycle for the entire radiology stack.

02 · PACS & RIS

Image acquisition, worklists, workflow.

PACS CORE

DICOM Acquisition & Storage

- Standard DICOM C-STORE receiver — any modality, any vendor
- Auto-filed by modality → patient → study → series → instance
- Dual-write redundant storage (primary + archive volumes)
- Full metadata extraction: demographics, study, series, equipment, imaging params
- Fast tag reads without loading pixel data
- Background pipeline converts incoming images into structured records within seconds
- Supported: CT · MR · CR · DR · DX · US · XA · Structured Reports

RIS

Radiology Information System

- Modality Worklist Server — technicians pull orders on the console, no re-typing
- Automated order intake from Puru HAS or third-party HIS (HL7v2 / FHIR)
- Auto Study ID + Accession Number per modality
- Full lifecycle: Prescribed → Ready → Scan Complete → Uploaded → Sent → Report Arrived → Approved
- Manual registration for walk-ins or HIS downtime
- Bidirectional HIS sync — statuses and master data flow both ways

STUDY MANAGEMENT & WORKFLOW

Role-based dashboards
Technicians see their modality queue. Doctors see their patients. Admins see everything, live.

30+ per-study actions
Open in viewer, re-upload, compress, generate manifest, print, convert to JPEG, submit offline report — all one click away.

Powerful search
By date range, patient name, study ID, description, modality, N-day lookback. Full patient imaging history one search away.

Live updates
Live-refresh UI. Study list updates as scans arrive, reports come in, uploads progress.

Infrastructure bar
Queue depth, upload speed (images/min), active uploads, failure count — always visible.

Audit trail
Every view, print and edit stamped with user + time. Regulator-ready.

External HIS integration ready. Puru PACS exposes deep-link resolvers so third-party HIS can launch our browser viewer with the identifiers they already have — *Accession Number* or *UHID / MRN*. No StudyInstanceUID gymnastics required.

03 · VIEWERS

100% PURU-BUILT

Three built-in viewers. No add-on licenses.

ON-PREM

Diagnostic Desktop Viewer

Full diagnostic viewer for Windows & macOS. Launches with one click from the hospital dashboard, reads straight from local PACS storage.

- Window/level, zoom, pan, cine
- Measurements, angles, ROIs, annotations
- Multi-planar reconstruction (MPR)
- Current + archived studies

CLOUD

Zero-Footprint Browser Viewer

No install. No plugin. No Java. Runs in any modern browser and powers teleradiology, consultant share and patient share.

- All standard modalities
- Secure auto-refreshing session
- Chrome · Firefox · Edge · Safari
- Deep-link launch from any HIS

FILM

Puru Pixel — Film & PDF

Dedicated desktop application for professional DICOM film printing, PDF export and WhatsApp share of print sheets.

- 10 DICOM film sizes
- Grid 1×1 to 8×8
- DICOM printer + PDF + system printer
- **Native 3D MPR & MIP**

BROWSER VIEWER — WHAT'S INSIDE

Diagnostic-grade tooling in the browser

Fully keyboard-driven. Every tool has a shortcut so radiologists never leave the study.

Window / Level (W) · Window Presets · Zoom (Z) · Pan (P) · Stack Scroll (S) · CINE playback (Space) · Ruler (R) · Angle (A) · Ellipse ROI (E) · Crosshair (C) · Invert (I) · Rotate · Flip H · Reset (0) · Fullscreen (F) · Series panel · Save as PNG · Next / Prev image · Force reload · Report writing pane · In-study messaging · Shortcuts overlay (?)

Why it matters

- Same UX for radiologists, consultants and patients — one viewer, three audiences
- Works on hospital LAN, radiologist's home, and patient's phone
- No end-user install, no per-seat license
- Offline DICOM cached in the browser for repeat views

3D MPR & MIP — NATIVE IN PURU PIXEL

04 · TELERADIOLOGY

CLOUD-OPTIONAL

Reach radiologists anywhere, without changing your workflow.

Teleradiology in Puru PACS is a lane, not a product bolt-on. Studies flow to the cloud only for the modalities you configure, only after acquisition is complete on-prem — so bandwidth never blocks scanning, and reports always land back in your hospital's PDF format.

UPLOAD PIPELINE

Reliable at any bandwidth

- Rule-based cloud upload — configure per modality / protocol
- Every DICOM instance individually tracked through its lifecycle
- Automatic retry with recovery of stuck uploads
- Selective re-upload at series or instance level
- Live progress: % complete, images uploaded, speed

STUDY DISTRIBUTION

One-click send to radiologist

- Assign to radiologist, agency, or consulting doctor
- Attach clinical history and prior documents
- Real-time delivery to the radiologist portal
- Cloud retention policy — auto-purge after N days

REMOTE RADIOLOGIST PORTAL

Pending queue

Real-time. Filter by hospital, per-hospital study count badges. Patient, modality, referring physician, image count, priors — all visible.

Dual viewer access

Open in the browser viewer (zero install) or download the study as an offline archive for the desktop viewer. Consistent one-click launch.

Rich report editor

WYSIWYG with fonts, colors, tables, embeds. Auto-save every 10 seconds. Draft recovery survives crashes.

Modality templates

CT / MR / DR templates with autocomplete and quick-select chips. Per-radiologist, per-modality library. Usage tracked.

Multi-report per study

Tabbed reports, version history, toggle validity. Draft · Read-Only · Final · Report Later · Other Medium statuses.

Bulk upload mode

Drag-drop many PDFs, auto-match filenames to patients, batch-process. Data-integrity repair built in.

AGENCY & CONSULTANT WORKFLOWS

05 · SECURE LINK SHARE

NEW

DICOM images, on a link. Two rails, two audiences.

Every study in Puru PACS can be shared over a secure link — no CD burning, no film courier, no email attachments. Two dedicated rails, each with its own security model, its own audience, and its own audit trail.

Consultant Share

DOCTOR → DOCTOR

Send a study to a consulting doctor in seconds

The treating team shares the full DICOM study — not just a report PDF — with a specialist, second-opinion consultant or referring physician.

- Sent to the consultant's email / WhatsApp with a one-click open link
- Consultant reads in the **zero-footprint browser viewer** — all diagnostic tools available
- Full DICOM, all series, priors attachable
- Configurable expiry window and view-count cap
- Recipient list, view counts and last-viewed timestamp visible to hospital
- Revoke, pause / resume, extend expiry at any time
- Multiple consultants per study — each with independent tracking

Patient Share

HOSPITAL → PATIENT

Every patient gets their images on their phone

The hospital sends the patient their own DICOM link, gated by their registered phone number — no login, no app install, no CD.

- Auto-triggered on report completion or one-click from the dashboard
- Patient receives a WhatsApp / SMS link personalised to their study
- Access gated by patient's registered phone (OTP-style verification)
- Opens in the browser viewer — works on any smartphone
- Patient can share the link forward to any doctor they choose
- Automatic session expiry; wrong-attempt lockout for privacy

CENTRAL LINK-SHARE DASHBOARD

Who has it
See every active link per study — consultant address, patient phone, sent-by user.

What they did
View counts, last-viewed time, wrong-password attempts, IP fingerprint.

Time-boxed
Set expiry per link. Auto-hide expired links. Extend or revoke from one screen.

Fully audited
Every create, resend, pause, resume, delete stamped with user + timestamp for compliance.

Security by design. Links are minted per study, per recipient and per session. Cloud tokens are short-

06 · PURU PIXEL

Professional film print, native 3D, WhatsApp share.

Layout & design

- 10 standard film sizes: 8×10, 10×12, 10×14, 11×14, 14×14, 14×17, 24×24 cm, 24×30 cm, A3, A4
- Configurable grid up to 8×8, portrait or landscape
- Drag-and-drop image placement + multi-select batch assign
- Zoomable, pannable film preview (1× – 10×) with keyboard nav
- Auto-suggested layouts per modality & body part on first load
- Configurable margins and spacing

3D reconstruction, built in

- Right-click any parallel CT / MR series → generate MPR or MIP
- Axial, coronal, sagittal reconstructions with configurable thickness
- Hanging-protocol auto-suggestions on study load
- Reconstructed series drop straight into the film pipeline
- Modality W/L presets: Lung / Mediastinum / Bone / Brain / Abdomen / Liver / Lung-CR / Bone-CR

Per-box inspector

- W/L preset chips, slider + spinbox for fine control
- Invert, gamma, rotate 0° / 90° / 180° / 270°, flip H / V
- Alt-drag on canvas to scrub W/L, Shift-wheel to change slice
- Apply to image · apply to whole series · reset to defaults
- 50-step undo/redo

Annotations & demographics

- 14 template variables (patient, study, series, W/L)
- 4 built-in annotation presets: Standard · Compact · Detailed · Anonymous
- 9 anchor positions, custom text at any spot, hospital-specific custom fields
- Save, load, share user presets across the department

Three print outputs

- **DICOM Film Printer** — standard DICOM Print protocol
- **PDF Export** — 300 DPI, black background per DICOM standard
- **System Printer** — any OS-connected printer
- Multiple printer profiles, save + test connections
- Blue / Green film, white paper, clear film
- Inline print bar — one-click print, no dialog cascade

Share & safeguards

- **WhatsApp share for X-ray & every modality** — one-click, phone-number aware, no CD, no film
- Same rail works for CT / MR PDF sheets — reception can send the film-equivalent instantly
- **Anonymize-before-print** — masks PHI, preserves clinical context
- **Audit log** — NABH-style record of every print (who, when, what, anonymised?)
- Film cost dashboard — baseline vs film-spent vs saved, per-modality trend
- Command palette (⌘⇧P) + full keyboard shortcuts
- Auto-update, dark/light themes, onboarding

07 · REPORTS, COMMUNICATION, STORAGE

From radiologist's cursor to patient's WhatsApp.

REPORT MANAGEMENT & GENERATION

Triple-format output

Every report auto-generated as PDF, Word (DOCX) and HTML. Patient header, demographics, radiologist signature and credentials on the PDF, done locally.

Approval workflow

Waiting → Arrived → Approved with validity controls. Multiple report types per study. Full version history with toggle-validity.

Offline submission

Reports can be submitted locally without cloud connectivity. Re-generation of PDF/Word from stored content at any time.

Templates & reuse

Per-radiologist, per-modality template library. Copy from prior studies for comparison reports. Print counts audited.

COMMUNICATION & NOTIFICATIONS

WHATSAPP

Patient alerts on WhatsApp Business API

Study booked, images acquired, report ready, link-share sent — all routed through Puru's central messaging gateway with template management.

EMAIL

Email delivery & routing

Radiologists identified and assigned by email. Consultant link-share via email. Report delivery from a central templated pipeline.

REALTIME

In-app browser alerts

OPS

Failure visibility

Storage & Archival

Retention capacity is subject to the storage hardware provided by the hospital. Puru PACS is storage-agnostic and makes the most of whatever disk you provide, with clean tiering between fast, archive and cloud.

- Configurable retention: local (default 150 d) + cloud (default 30 d)
- Dual-write redundancy: primary + archive volumes
- Automated cleanup with safety checks
- Automatic cloud purge past retention
- Study ZIP compression on demand
- Optional cloud backup bucket

MIS & Excel

- Monthly report volumes — submitted vs. approved
- Modality & report-type breakdown
- Teleradiology TAT, expected vs. actual
- Multi-sheet Excel export, professional formatting

> **Real-time monitoring is always on:** queue depths, upload speed, active uploads, session timer, failed upload viewer with per-instance retry.

08 · DEPLOYMENT & ACCESS

Runs where your data should run.

ON-PREM

Hospital-side infrastructure

- Container-based deployment per hospital site
- Local database, message broker, storage volumes
- Puru PACS + Puru HAS + Puru Auth pulled from Puru's secure registry
- Central cloud build; each hospital pulls updates on its own schedule
- Fully operational without internet (only teleradiology & link-share need cloud)

CLOUD

Puru-hosted cloud services

- Radiologist teleradiology portal
- Zero-footprint browser viewer
- Consultant & patient link-share endpoints
- Cloud DICOM store for teleradiology + link-share sessions
- WhatsApp / Email / SMS delivery pipeline

HARDWARE & SIZING

Storage is subject to hardware provided by the hospital. Puru PACS is designed to be storage-agnostic — attach any NAS, local RAID or SAN volume as the DICOM store, and any second volume as the archive. Retention windows are software-configurable to fit the available capacity. Sizing guidance is provided per modality mix and expected daily study count.

USER ROLES & ACCESS CONTROL

ROLE	WHERE THEY WORK	WHAT THEY DO
Radiologist / Technician	Hospital dashboard	Full radiology console — write reports, manage series, configure protocols, monitor infra
Doctor / Ordering physician	Hospital dashboard	See their patients' studies and reports; send consultant link-share
Remote radiologist	Teleradiology portal	View DICOM, write reports, use templates, auto-save drafts
Agency coordinator	Teleradiology portal	Assign studies, manage team, track completion
Agency radiologist	Teleradiology portal	Work assigned queue, submit reports
Consultant	Browser viewer	Open shared study, review images and priors, deliver

09 · SCALE & PERFORMANCE

ANY FOOTFALL

From a 20-scan diagnostic centre to a 2,000-scan tertiary hospital.

Puru PACS is engineered so the same code base fits a single-CT standalone centre and a multi-modality tertiary hospital pushing thousands of studies a day. The heavy-lift plumbing — asynchronous queues, LRU caches, batched writes, indexed lookups, back-pressured upload lanes — is on by default. You don't tune it, it tunes itself to the load in front of it.

LOW FOOTFALL

Standalone diagnostic centre

Single CT or CR unit, 20–80 studies / day. Runs on a mid-range on-prem box. Film savings alone pay back the platform.

MODERATE

Multi-speciality hospital

CT + MR + CR + US, 150–500 studies / day. Same stack, same operator training — just more storage.

HIGH

Tertiary care / chain

10+ modalities, multiple counters, 1,000+ studies / day. Horizontally scalable queues, multi-hospital cluster view.

THE ENGINEERING BEHIND IT

Asynchronous ingest pipeline

- **Message-queue-backed** DICOM receive → parse → persist path, so a burst of images never blocks the scanner console
- Instance-level lifecycle tracking with automatic retry & back-pressure
- Dedicated queues per lane: acquisition, cloud upload, archive, delete, notify — no head-of-line blocking
- Batched database writes with prepared statements for high-throughput inserts

Storage & retrieval optimisation

- **Hierarchical file layout** — modality / patient / study / series — keeps directory fanout in check even at millions of instances
- Dedicated database indexes on Accession Number, Patient UHID, Study UID for sub-millisecond lookup
- Fast DICOM tag reads without loading pixel data — metadata queries stay cheap
- Dual-write to primary + archive volumes for redundancy without a second scan

Caching & concurrency

- **LRU image caches** in the desktop and film viewers — 200-image window for instant scroll
- Server-side auto-refreshing session tokens keep the browser viewer live without re-authenticating
- **Volume caches** for 3D MPR / MIP — memory-bounded so a 500-slice CT never

Bandwidth-adaptive cloud lane

- Rule-based upload — only the modalities you flag ever leave the hospital
- Per-instance retry with exponential backoff; stuck uploads auto-recover
- Live upload speed (images/min), queue depth, active count in the ops bar
- Studies queue & drain independently — a slow line for one hospital never stalls another

GET IN TOUCH

Built for Indian hospitals. Priced for scale.

One vendor, one stack
RIS, PACS, teleradiology, film print, link share, comms — one team, one support number, one upgrade cycle.

Data stays home
All primary storage and report generation is on-premises. Cloud is optional, opt-in, per modality.

Standards, not lock-in
DICOM C-STORE, C-FIND, HL7v2, FHIR R4 — any modality, any HIS. No proprietary rails to sign into.

Deep HIS integration
Native two-way with Puru HAS; tested integrations with third-party HIS via HL7v2 MLLP and FHIR.

Actively engineered
Every viewer, every rail, every tool is built and owned by Puru Labs — continuous feature roll-outs on a hospital-driven roadmap.

Priced for the market
Container-based licensing per site. No per-modality tax, no per-radiologist gouge, no film-count meter.

EVERYTHING, IN ONE GLANCE

RIS
MWL C-FIND · orders · lifecycle · HIS sync

PACS
C-STORE · dual-write · vendor-neutral · 7 modalities + SR

Teleradiology
Cloud upload · retry · study distribution · TAT

Viewers
Diagnostic desktop · Zero-footprint browser · Puru Pixel

3D MPR & MIP
Native. Hanging protocols. Straight to film.

Link Share
Consultant rail + patient rail · audit & revoke

Reports
PDF · DOCX · HTML · templates · versions · offline

Communication
WhatsApp · Email · SMS · in-app realtime

Storage
Local + archive + cloud, retention configurable*

*Subject to storage hardware provided by the hospital.

BUNDLE **Ship it with Puru HAS — one hospital, one stack.**