



MEDIBRIDGE CONNECT • INTEGRATION ENGINE
UNIFIED DIGITAL ECOSYSTEM

What this deck covers

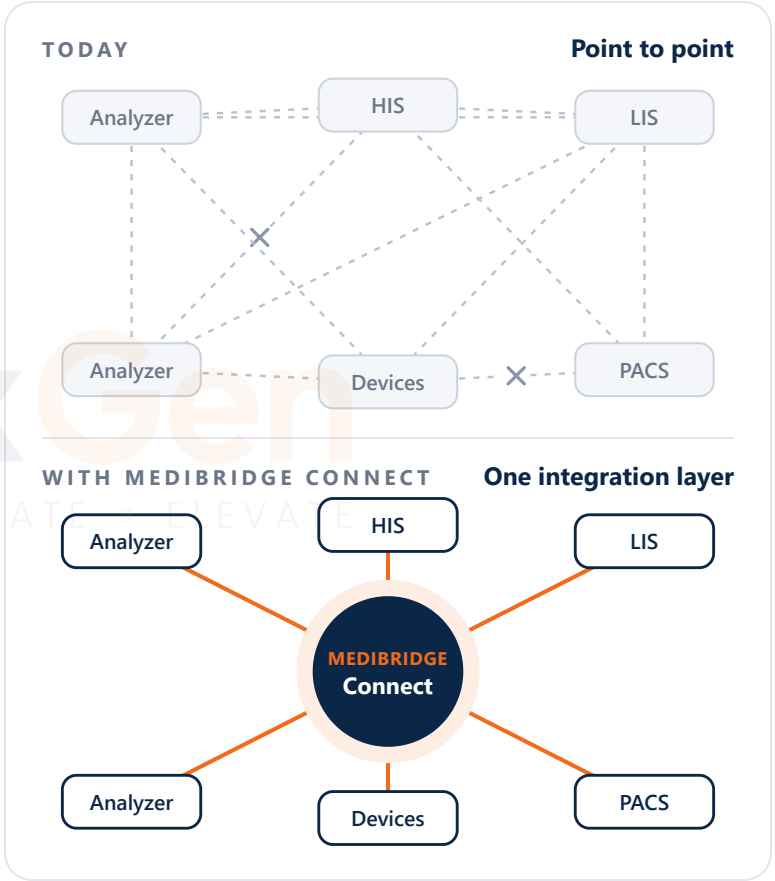
MediBridge Connect is ClinexGen’s healthcare integration engine, for hospitals, diagnostic labs and HIS / LIS vendors.

 HEALTHCARE INTEGRATION ENGINE MediBridge Connect Every analyzer and every system, connected. MediBridge Connect links laboratory analyzers, HIS, LIS and other clinical systems. It receives each message, stores it safely, converts it to the format the next system expects and delivers it, so results reach the right record without anyone re-typing them. ASTM E1381 / E1394 analyzer link over network or serial line HL7 v2 Versions 2.3 to 2.5.1 over MLLP FHIR R4 Two-way conversion between HL7 v2 and FHIR AES-256 Field-level encryption of patient data at rest	01  The challenge Why disconnected systems cost labs and hospitals · p. 03	02  What it is and how it works One integration layer, one five-step pipeline · p. 04–05
	03  Analyzers and LabCore ASTM results and orders; MediBridge LabCore · p. 06–07	04  Capabilities and standards Channels, mapping, workflows; protocols supported · p. 08–09
	05  Operator console Every interface, watched and fixed from one screen · p. 10	06  Security and privacy Patient data protected at every step · p. 11
	07  Deployment and monitoring Where it runs and how it is monitored · p. 12	08  How it compares Against the usual ways of linking systems · p. 13
	09  Scope, fit and plan Start small; who it is for; how a project runs · p. 14–16	10  Who stands behind it ClinexGen, and how to start · p. 17–18

Results that are re-typed are results at risk

Most labs and hospitals already have good systems. What they lack is a dependable way for those systems to talk to each other.

	Analyzers that stand alone Each analyzer speaks its own dialect. Without an interface, results are read off a screen or a printout.	COST Skilled lab time spent copying numbers.
	Transcription errors Every re-typed value is a chance to mistype a result, swap a sample or miss a flag.	COST Risk to patient safety, and rework.
	Reports that wait Results sit on the analyzer until someone is free to enter and verify them.	COST Slower turnaround for doctors and patients.
	Point-to-point spaghetti Every new HIS, LIS or device becomes another custom interface to build and maintain.	COST Each change re-opens a project.
	Silent failures When a link drops or a system is down, messages can be lost and nobody is told.	COST Missing results found late, by a phone call.

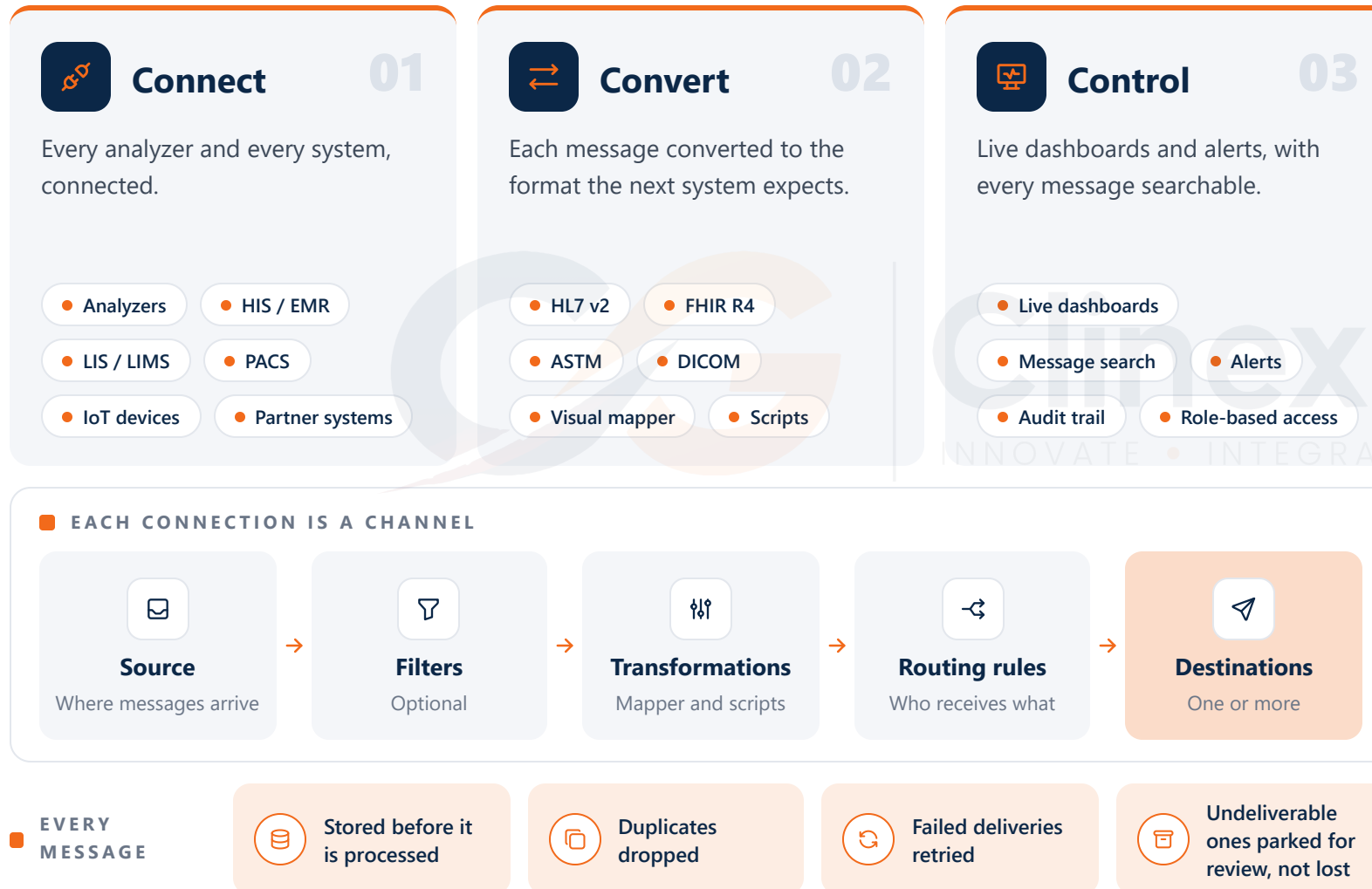


**Our answer:** one integration layer between all your clinical systems, so nobody re-types a result.

How it works · p. 05

One integration layer between all your clinical systems

MediBridge Connect is a server that receives, checks, converts and routes clinical messages, with an operator console to set it up and watch it run.



IN ONE SENTENCE

Results and orders move between analyzers, LIS and HIS automatically, safely and visibly, with nobody re-typing them.

BUILT ON

- .NET 10 server
- PostgreSQL
- Optional RabbitMQ
- Operator app for Windows, Android, iOS and macOS

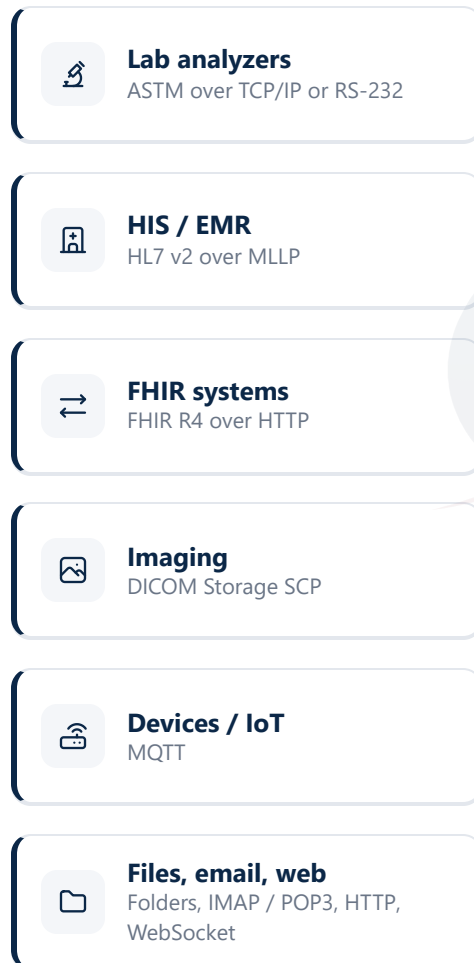
BUILT FOR

- Hospitals
- Diagnostic labs
- HIS / LIS vendors

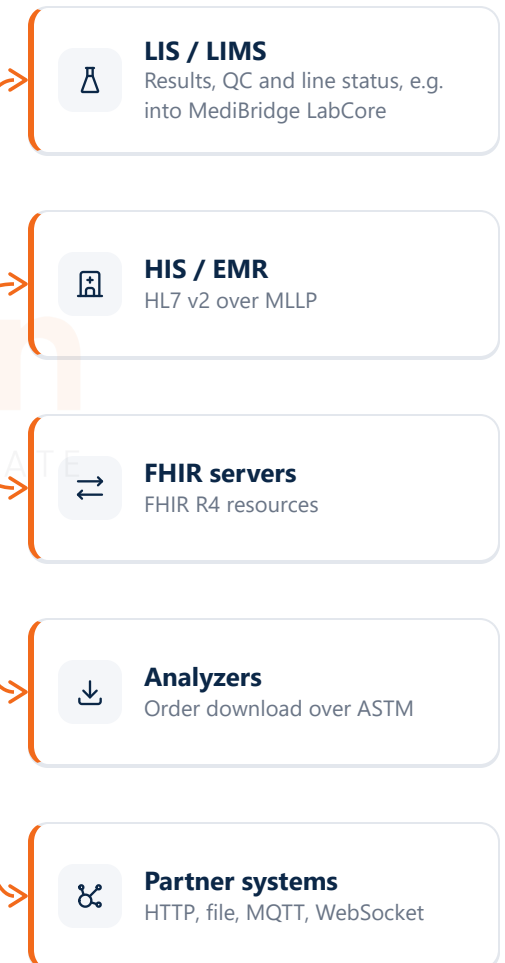
Many systems in, one dependable pipeline, many systems out

Each connection is a channel, and every channel runs the same five steps.

CONNECTS FROM

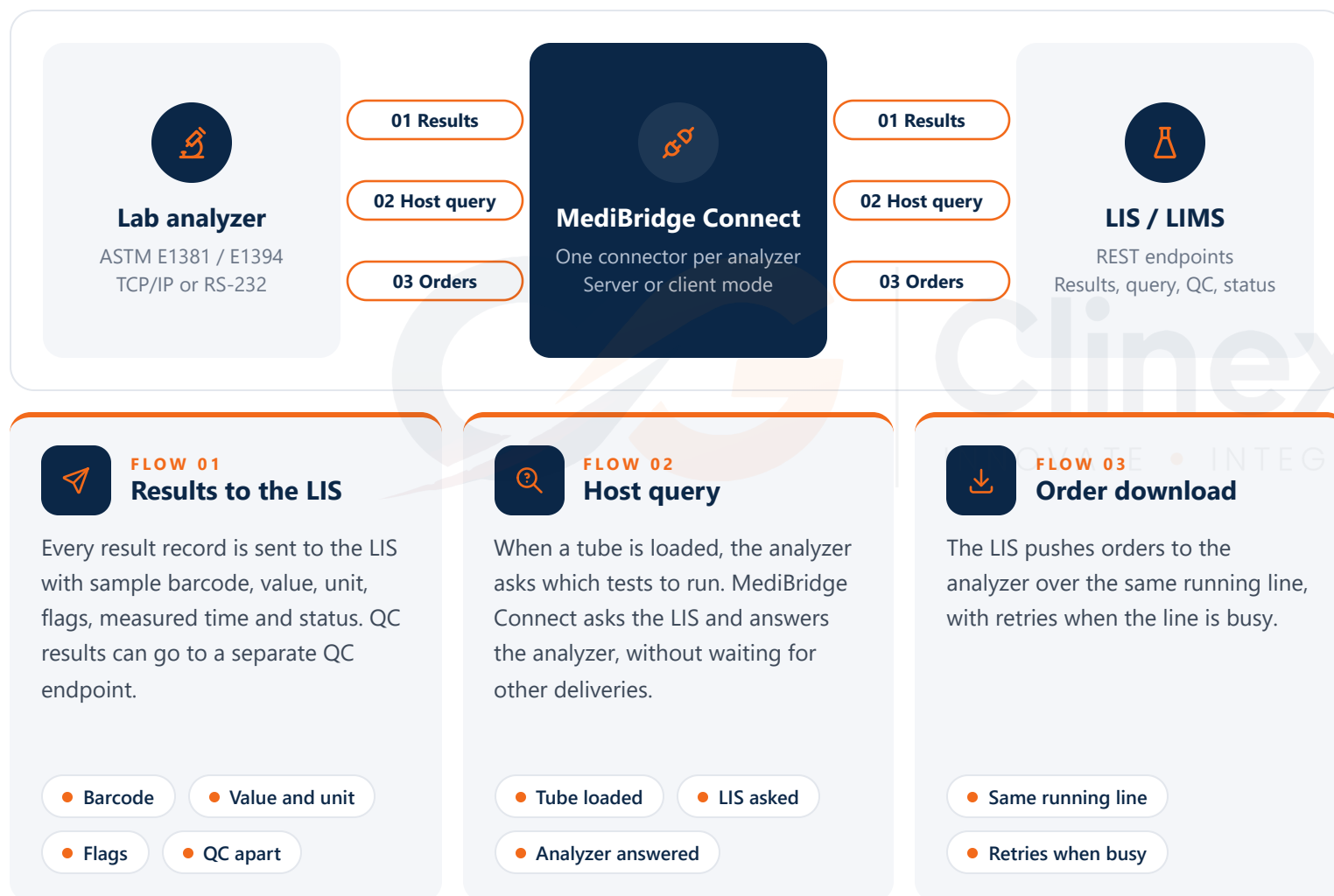


DELIVERS TO



Built for the lab bench: ASTM, done properly

A dedicated ASTM E1381 / E1394 connector for each analyzer, over TCP/IP or a serial RS-232 line, in server or client mode.



STORE-AND-FORWARD AND SPOOLING

Built so results are not lost

- Encrypted result spool**
If the database is unavailable, received results are written to an encrypted local spool and replayed in arrival order once it is back.
- Store-and-forward**
While the LIS is down, results are kept and redelivered until the LIS accepts them.
- Line status**
Connected, closed and 'silent' reports to the LIS, so the bench knows when an analyzer has stopped sending.
- Analyzer simulator**
A built-in ASTM simulator to test results, host query and orders before a real instrument is connected.

From the analyzer to the signed report, with one partner

MediBridge LabCore receives results straight from your analyzers through MediBridge Connect, its companion integration engine.



One partner, one support desk: for a diagnostic lab or network, MediBridge LabCore with MediBridge Connect; for an HIS or LIS vendor, Connect on its own.

Everything an interface team needs, in one product

From the first connection to the hundredth, the same tools build, run and fix every interface.



01

Reliable channels

Store-and-forward, de-duplication, per-destination retry, dead-letter queue and reprocessing from the console.

- Store-and-forward
- De-duplication
- Dead-letter queue



02

Mapping without code

A visual mapper with copy, lookup, date, concatenate, template and segment operations, plus sandboxed JavaScript for special cases.

- Visual mapper
- Lookups
- Sandboxed JavaScript



03

Workflows and approvals

Action, condition, approval and parallel steps, started manually, on a schedule, by an incoming message or by an API call.

- Condition
- Approval
- Parallel steps



04

Patient matching

A patient index fed by HL7 ADT and FHIR Patient messages, with weighted matching that never searches on clear patient data.

- HL7 ADT
- FHIR Patient
- Weighted matching



05

Dashboards and reports

Live message volumes and errors, anomaly detection on the dashboard, and seven report types in PDF, Excel or CSV, on demand or scheduled.

- Live volumes
- 7 report types
- Scheduled



06

Open APIs

REST, GraphQL and live SignalR notifications, with scoped API keys for system-to-system access and Swagger documentation.

- REST
- GraphQL
- SignalR
- Scoped API keys

Speaks the languages your systems already use

Open healthcare standards out of the box, so new connections are configured, not programmed.

 Laboratory	ASTM E1381 / E1394 Also known as CLSI LIS01-A / LIS02-A. Results, host query, order download	Analyzer simulator Built-in ASTM simulator to prove each flow before a real instrument
 Clinical messaging	HL7 v2.3 – 2.5.1 Typed parsing, validation profiles, ACK / NAK, batches	FHIR R4 Encrypted FHIR store; HL7 v2 conversion both ways (ADT, ORU, ORM / OML)
 Imaging and devices	DICOM Storage SCP, C-FIND and C-MOVE	MQTT Devices and an IoT device registry
 Transports	MLLP · HTTP · WebSocket Optional TLS on MLLP, per channel	File · Email Folder polling, IMAP / POP3
 Open APIs	REST · GraphQL With Swagger documentation	SignalR · API keys Live notifications; scoped keys for system-to-system access

AT A GLANCE

Open standards, out of the box

- ASTM E1381
- ASTM E1394
- HL7 v2.x
- FHIR R4
- DICOM
- MLLP
- MQTT
- REST · GraphQL

Configured, not programmed: a new connection is a new channel, set up in the console.

See every interface, and fix it, from one screen

A desktop and mobile app for your IT and lab-systems team, with live updates from the server.

The Messages screen of the MediBridge Connect operator console (real screen, shown with test data).

RUNS ON

Windows

Android

iOS

macOS

LANGUAGES

English

Spanish

French

Arabic

Hebrew

Dashboard

Message volumes, failures and live channel status

Channels

Create, deploy, start and stop connections

Messages

Search and inspect traffic; patient view needs a separate permission

Dead letters

Review and reprocess what could not be delivered

Mapper & scripts

Build transformations visually

Monitoring

Health of channels and the server

Workflows & approvals

Design, run and approve automated steps

Reports

Patient-data access, audit trail, user access review and more

Audit log

Who did what, and when

Users, roles & API keys

Access control in one place

Patient data protected at every step

Security controls are built into the product, not left to the network.

AES-256-GCM

FIELD-LEVEL ENCRYPTION AT REST

TLS 1.2 / 1.3

IN TRANSIT, WITH HSTS

21

FINE-GRAINED PERMISSIONS

6

BUILT-IN ROLES



Encryption at rest

AES-256-GCM field-level encryption for patient data and secrets, with key rotation.

- Per field
- Secrets too
- Key rotation



Encryption in transit

TLS 1.2 / 1.3 with HTTPS redirection and HSTS; optional TLS on MLLP channels.

- HTTPS
- HSTS
- TLS on MLLP



Strong sign-in

Password policy, optional TOTP two-factor sign-in, lockout after repeated failures.

- Password policy
- TOTP
- Lockout



Role-based access

21 fine-grained permissions and 6 built-in roles. Every API call is denied unless permitted.

- 21 permissions
- 6 roles
- Deny by default



Audit trail

Patient-data reads, administrative actions and API-key calls are recorded.

- Patient-data reads
- Admin actions
- API-key calls



Privacy by design

Patient data redacted from logs, data-retention rules, and export and erase on request.

- Redacted logs
- Retention rules
- Export, erase



What we claim, and what we don't: We claim no certification or independent audit; compliance also depends on how MediBridge Connect is deployed and run.

Runs where you want it, with problems flagged early

On your own servers or in your cloud account. Health checks, metrics, alerts and dashboards ship with the product, with written procedures for the day-to-day.

DEPLOYMENT OPTIONS

On your servers or in your cloud

-  **Docker Compose**
Single server or evaluation: server, PostgreSQL, RabbitMQ, Prometheus and Grafana in one step.
-  **Kubernetes**
Ready manifests with probes, autoscaling and a migration job. Set-up guides for Azure AKS and AWS EKS.
-  **Helm chart**
One-command install and upgrade, with migrations run safely before each upgrade.
-  **Linux package**
Debian / Ubuntu package with a hardened systemd service; keys generated at install.
-  **Windows**
Guided PowerShell set-up on a single Windows machine: database, keys, migrations and first administrator.
-  **Operator apps**
Console for Windows, Android, iOS and macOS, built from one code base.



Several servers can share the load: listeners run on every server and polling sources are coordinated automatically.

MONITORING AND OPERATIONS

Problems flagged early, not discovered by a phone call

- 01**  **Health checks**
Liveness and readiness endpoints for load balancers and Kubernetes.
- 02**  **Metrics**
Messages received, processed, failed and dead-lettered, processing time, queue depth, sign-in failures and spool depth.
- 03**  **Alerts**
16 ready Prometheus rules: server down, error rate, slow processing, backlog, stalled processing, spool not draining.
- 04**  **Dashboards**
A Grafana dashboard for messaging, API, database and runtime health.
- 05**  **Backup & restore**
Documented PostgreSQL backup with point-in-time recovery and restore testing.
- 06**  **Runbooks**
Key management, incident response, access review and risk assessment procedures.

How MediBridge Connect compares

Against the three usual ways of linking analyzers and clinical systems, and what each means day to day.

WHAT IT MEANS	 Re-typing results by hand Reading off the analyzer	 Point-to-point interfaces One custom link per pair	 Your own interface engine Built and kept up in-house	 MediBridge Connect One integration layer
Results into the LIS	Read off a screen or a printout, then re-typed	Moved only where an interface was built	Moved once your team has built the connector	✓ A dedicated ASTM connector per analyzer, with host query and order download
Risk to each result	Every value can be mistyped, a sample swapped or a flag missed	Depends on how each interface was built	Depends on what your team builds and tests	✓ Stored first, duplicates dropped; acceptance checks before go-live
Adding a system or analyzer	More values to re-type at the bench	Another custom interface to build and maintain	Your team builds and maintains it	✓ A new channel, configured, not programmed
When a link or system is down	Reports wait until someone is free to enter them	Messages can be lost and nobody is told	As good as the retries and alerts you build	✓ Each destination retries; what fails waits for review; alerts raised
Seeing and fixing it	No message trail to search	Missing results found late, by a phone call	Whatever console your team builds	✓ One console: dashboards, message search, dead letters, audit log
Security and audit	Rests on paper and screen handling	Set up interface by interface	Yours to build, test and keep up	✓ Field-level encryption, roles and an audit trail of patient-data reads

⚠ Compared by category, from what each approach involves. No product is named and no figures are quoted.

Start small, switch on more as you grow

MediBridge LabCore and MediBridge Connect are scoped by the modules and interfaces you switch on.

INTERFACES YOU SWITCH ON

From a first analyzer to a full rollout

STEP 01



First connection

A first analyzer or system, proven end to end on a pilot connection

STEP 02



More analyzers

Each with its own ASTM connector: results, host query and order download

STEP 03



Hospital systems

HIS / EMR over HL7 v2, and FHIR R4 systems, both ways

STEP 04



Full rollout

Imaging, devices, files and partner systems, with monitoring in place

SERVERS

From one server to several



One server

Docker Compose: server, PostgreSQL, RabbitMQ, Prometheus and Grafana in one step. Or a guided set-up on a single Windows machine.

• Docker Compose

• Linux

• Windows



Several servers sharing the load

Kubernetes or the Helm chart, with RabbitMQ as the message bus. Listeners run on every server; polling sources are coordinated automatically.

• Kubernetes

• Helm chart

• RabbitMQ



From the first connection on, every message is stored, searchable, traceable and can be reprocessed.



Your commercial proposal sets out the scope: the interfaces and servers you start with.

Built for the people who own clinical data flows

Diagnostic labs, hospitals and HIS / LIS vendors run the same engine, set up for the interfaces each needs.



LAB DIRECTOR

Diagnostic labs

Connect analyzers to your LIS: results flow in with flags and QC kept apart, and the bench knows when a line goes quiet.

- ✓ A dedicated ASTM connector per analyzer
- ✓ Each flow proven on the analyzer simulator first
- ✓ Silent analyzers flagged to the LIS



CIO / IT HEAD

Hospitals

One place to run HIS, LIS, PACS and device interfaces, with monitoring, audit and access control your IT team can own.

- ✓ HL7 v2, FHIR R4 and DICOM in one console
- ✓ Health checks with 16 ready alert rules
- ✓ Your servers or your cloud account



PRODUCT TEAMS

HIS / LIS vendors

Add analyzer and HL7 / FHIR connectivity to your product without building and maintaining your own interface engine.

- ✓ Open REST and GraphQL APIs
- ✓ Scoped API keys for system-to-system access
- ✓ Direct, through a partner, or white-labelled



ADMINISTRATOR

Hospital administration

Less manual entry, no reports waiting to be typed in, and a clear audit trail of who saw patient data.

- ✓ Audit trail of patient-data reads
- ✓ Role-based access: 21 permissions, 6 roles
- ✓ Reports on demand or scheduled

WHAT CHANGES

On day one



Results move from analyzer to LIS without being re-typed.

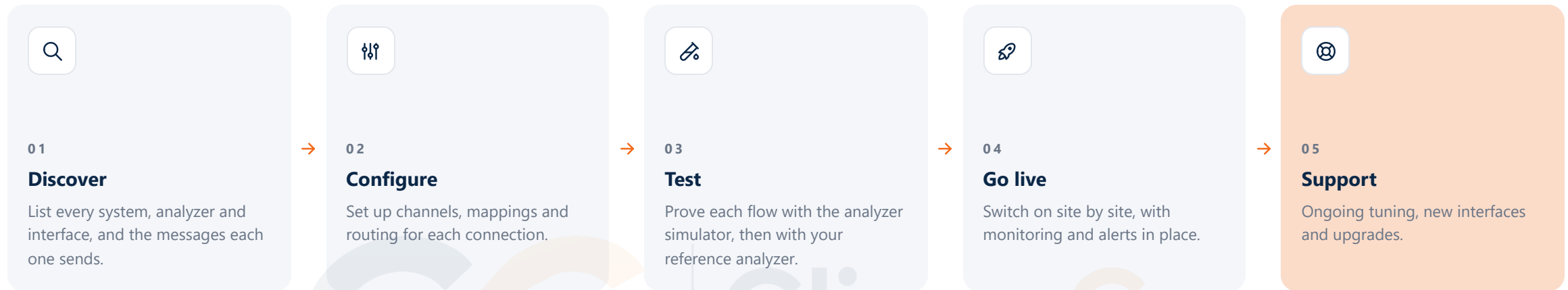


Every message can be found, traced and, if needed, reprocessed.



Your team is alerted when a line, a system or a queue needs attention.

From first analyzer to full rollout, one proven step at a time



ACCEPTANCE CHECKS WITH YOUR REFERENCE ANALYZER BEFORE GO-LIVE

Proven on the built-in analyzer simulator first

- | | | |
|--|---|--|
| 01  Host query answered with the right tests | 02  Results match the analyzer screen: value, unit, flags, time | 03  Repeat runs kept, QC routed separately |
| 04  Order download listed on the analyzer | 05  LIS outage: results arrive after recovery | 06  Cable pulled: line status reported, flow resumes |

A healthcare software partner, not just a connector

MediBridge Connect is built and supported by Clinexgen Private Limited, Chennai.



01

One engineering standard

Every ClinexGen product built, secured and supported the same way, so the next one adds capability, not complexity.

- Seven products on one standard
- One security posture



02

One support desk

One desk and one escalation path for every ClinexGen product you run.

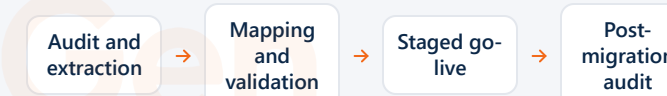
- One escalation path
- Service levels in your proposal



03

Change your system. Keep your history.

When you replace a system, ClinexGen's migration runs in four steps: every record counted in both systems, every difference explained.



Clinexgen Private Limited

An AI-enabled software development company, always moving towards state-of-the-art technology. DPIIT-recognised. Founded by a technocrat, an industry leader and a marketing professional, with more than 50 years of combined experience.

One platform, seven products, three verticals

Healthcare

Casebook, Nucleus, Nalam360

Laboratory and integration

MediBridge LabCore, MediBridge Connect

Enterprise operations

Beat, LedgerFlow AI

THREE WAYS TO WORK WITH US



DIRECT

The ClinexGen team

Engages, delivers and supports your account: one point of accountability.



THROUGH A PARTNER

An accredited partner

Where local presence and established relationships matter most.



UNDER YOUR OWN BRAND

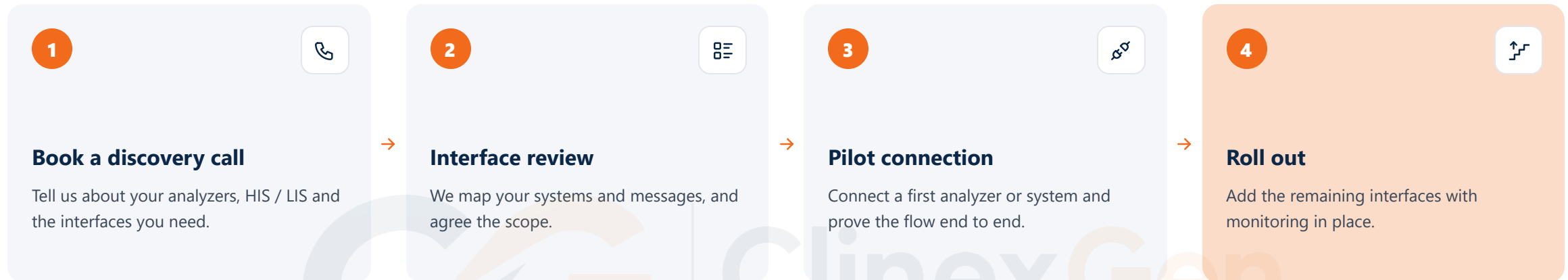
A white-label partner

Software and IT companies offer ClinexGen products under their own brand.

Every way: the same product, the same standard and the same support desk.

Let's connect your first analyzer

Tell us about your analyzers, HIS and LIS. A ClinexGen specialist will follow up to plan a pilot connection.



BEFORE THE CALL

Useful for the discovery call

- ✓ Every system, analyzer and interface you run
- ✓ The messages each one sends and expects
- ✓ A reference analyzer for the acceptance checks



After go-live: one support desk and one escalation path, with service levels written into your proposal.

GET IN TOUCH

Book a discovery call with a ClinexGen specialist



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MediBridge Connect Deck · CG-CONNECT-DECK-2026-V1.0 · Version 1.0 · October 2026