

Introduction

Ligo is a Latin word that means “to unite or to connect,” which goes to the core of our philosophy of providing an all-in-one software solution for laboratories looking to positively transform their operations. We enable you to bring together all of your users, departments, and workflows into one source of truth platform, and LigoLab takes full responsibility for all of your laboratory Information System needs, while also enabling maximum automation, transparency and efficiency for your business.

Since 2006, LigoLab has specialized in the development and licensing of laboratory software, providing comprehensive and agile solutions for anatomic, clinical, and molecular laboratories ([click here to learn how the company was founded](#)). Our company is headquartered in Los Angeles and the [LigoLab LIS & RCM Operating Platform](#) is currently driving efficiency, performance, and growth in hundreds of laboratory facilities nationwide.

From the very beginning, our goal was to build a laboratory informatics platform that would unite all diagnostic disciplines, departments, roles, processes, and specimens on one powerful end-to-end technical and financial platform. This fully-integrated multi-specialty platform will optimize efficiency and performance to drive all the features and modules your organization would need to succeed. Without the need to interface multiple third-party modules or systems, middleware, or manual workarounds. Fueled by automation, laboratory productivity will go way up, turnaround times will be much faster, and human error resulting in lost or mislabeled samples would be drastically reduced.

Fast forward and that original LigoLab vision of complete interoperability and infinite configurability has become a reality. The LigoLab platform connects, merges, and integrates all laboratory workflows, financial operations, patient engagement and supports the entire life cycle of every case. The platform fuels growth and transforms laboratories into information-driven and future-ready operations.

Below you'll find a diagram that highlights all of the modules that come with our platform. They are not standalone. On the contrary, they all foundationally work together as a one-stop software solution **for your laboratory to reach its full potential - faster!**

Please note that at the end of this document, there are hyperlinks to many [more explainer videos](#) and demos. In addition, we can share a detailed implementation guide upon request.

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All-In-One Laboratory Operating Platform





Partnership Model

LigoLab partners with laboratories looking to transform and scale their operations. One of the main priority of the platform for your organization is to drive ultimate productivity, transparency, and efficiency while minimizing medical errors and compliance risks. We do this by providing best practices and full-proof workflow support to remove bottlenecks and growth barriers limiting your lab's potential, however, we do not stop there. The feature-rich Laboratory Operating Platform enables remarkable market differentiation and the ability to attract new customers and revenue sources. The embedded RCM/billing module significantly increases financial transparency and net collections by leveraging coding automation, millions of built-in payer rules, upfront eligibility, coverage lookups, and demographic checking to provide clean claims and a first-pass pay rate of 99 percent. LigoLab provides all the modules to our partners to run successful operations without being nicked and dimed on features, support, number of users, upgrades, etc.

LigoLab specializes in laboratory informatics, providing comprehensive and agile solutions for anatomic, clinical, and molecular laboratories nationwide. From the beginning, our vision was to build a unified LIS and RCM platform enabling reference laboratories to scale efficiently and thrive. The LigoLab Informatics Platform supports and enhances every diagnostic discipline, department, role, specimen, and process life-cycle in one powerful end-to-end platform. The single source of truth solution unifies and modernizes laboratories to prepare them to evolve with the changing times. Our partner laboratories are no longer captive to antiquated and rigid systems or IT departments/vendors that have held the only key to improvements and flexibility.

We are confident that our team's extensive hands-on laboratory industry experience and best-in-class software development expertise enable us to deliver unparalleled products and a mindset. Our biggest differentiator is our dedicated team and aligned partnership philosophy that has driven our success in the marketplace. We provide the most comprehensive software platform on the marketplace and the much-needed responsive service to allow our partner laboratories to focus on what they do best.

Our total cost of ownership is clear from day one, we do not have hidden fees. Instead, we charge a simple aligned license and support fee monthly that covers unlimited seats for LigoLab AP/LIS, support, maintenance, bug fixes, and all future upgrades, as well as the licensing for all of the submodules are included. The monthly license fee is charged retrospectively based on the number of cases/reports performed by the Licensee in a given month, broken down by case types and respective rates.

If the Licensee is interested in both the LIS and RCM modules, our pricing model is based on a percentage of net-collected. This fee covers all licensing for the LigoLab LIS and RCM, as well as all services and maintenance.

This partnership model has worked well for the laboratories as the level of service is unparalleled since LigoLab's team is very much interested in helping your laboratory scale and thrive based on the aligned incentives. Our team is actively working on the functionality needed today and in the future, as the diagnostic industry rapidly evolves, we make sure your organization is ahead of the curve all the time.

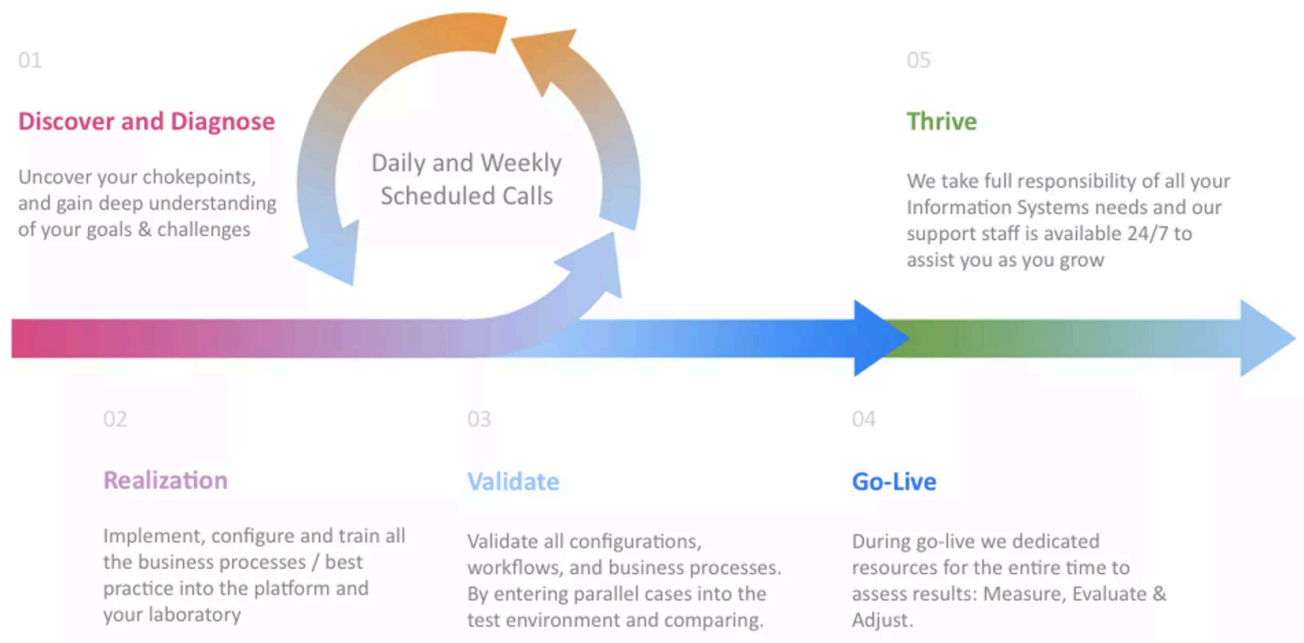
LigoLab Platform and Deployment

The LigoLab Platform can be deployed in a variety of ways and we are committed to providing the architecture that will best fit your organizational goals and priorities. The platform can work on-premise or in the cloud and can run on any operating system anywhere around the world without the need to set up any VPN connections or terminal servers. On the backend we are database agnostic, however, most of our deployments are on Microsoft SQL, and we will provide read-only access to the database upon request.

The LigoLab Platform manages the flow of information between patients, clients, and laboratories with advanced security that includes configurable policies, embedded VPN and SSL encryption, two-factor authentication, and a robust and searchable audit trail. The result is maximum security and data integrity. All activities within the system are logged and monitored, and all field modifications are tracked in real-time.

Phases of Implementation

We take a phase-by-phase approach allowing you to maintain your daily business and move into the new platform, systematically and strategically. It is our belief that every customer has its own unique needs and, rather than forcing a “cookie-cutter” approach to software implementation; we evaluate your business processes and make recommendations for you to best utilize the platform. LigoLab’s dedicated team goes the extra mile for our customers to attain the best outcomes for you.



Phase 1: **Domain Analysis** - Achieve a common understanding of how the company intends to run its operations within the LigoLab Platform. The result is the Implementation Blueprint, a detailed documentation of the results gathered during requirements workshops and by answering the questionnaire.

Phase 2: **Realization** - Implement all the business process requirements based on the Implementation Blueprint. The system configuration methodology is provided in two work packages: Baseline (major scope); and Final configuration (remaining scope).

Phase 3: **Final Preparation and Validation** - Complete the final preparation (including testing, end-user training, system management, and cutover activities) to finalize your readiness to go live. The Final Preparation phase also serves to resolve all critical open issues. On successful completion of this phase, you are ready to run your business in your live LigoLab Platform.

Phase 4: **Go Live** - Move from a project-oriented, pre-production environment to a live production operation.

Phase 5: **Thrive** – LigoLab is committed to supporting and growing our platform to be the stable foundation for all your business needs of today and tomorrow.

Updates, Support, and Maintenance

LigoLab's development approach combines agile, continuous development methodology with a deployment that puts the customer's interests first by giving laboratories stable and supported versions in production and full control over upgrade timing and process.

- LigoLab releases 4 feature versions per year (starting in 2018, to underscore our commitment to quarterly releases, we standardized our version naming convention to Year.Quarter.Version). For example, our stable production version is named [2025.1](#). New features are continuously developed, validated, and automatically rolled out to all customer TEST environments. The training environment is specifically utilized for training, testing, and validating specifically controlled version updates before they are pushed to production.
- At the same time, we support all previous versions deployed to customer production environments (ranging from 2018.1 to 2025.1). Any patches applied to previous versions are available on all later versions. We maintain a detailed Feature and Hotfix Release Log that documents and makes available to all customers information about all changes to all versions.
- For all customers, we maintain 3 environments (PRODUCTION, TRAIN, and TEST). For example, for one of our current customers:
 - PRODUCTION environment runs on [2024.3.92](#).
 - TRAIN environment contains the latest version for [2024.3.96](#). The customer has full information on changes between [2024.3.92](#) and [2024.3.96](#) and can schedule

and request the production upgrade to the latest minor version of [2024.3](#) at their convenience.

- TEST environment contains the latest stable released version where customers can get early access and familiarize themselves with the latest features.

Regression Testing Methodology

Every single update to the LigoLab Platform (no matter how trivial) undergoes the same strict validation through a suite of automated regression testing. We run 12-plus hours of regression tests that emulate concurrent user activity for all modules of the LigoLab Operating Platform. We are committed to continuous quality improvement of our software and are constantly increasing the depth and coverage of our regression testing.

Maintenance Windows

- Our standard configuration includes the scheduling of the LigoLab application server for a restart and log rotation daily (typically 2-3 minutes of downtime). This configuration can be changed to weekly/monthly upon request.
- System updates are always scheduled for customer convenience (off business hours in all time zones).

Support

LigoLab Support aims to provide a basis for close cooperation between LigoLab and its customers. LigoLab offers support through phone and email that is included at no additional cost. We are with you from planning through implementation, go-live, follow-up, and maintenance to guarantee a successful ongoing deployment and service for your laboratory. We also offer a post-go-live Continual Service Improvement (CSI) solution to ensure your lab is up to speed with any features and enhancements that were developed post-go-live.

The Help Desk Support is committed to delivering quality customer service and is available 24/7. The support department ensures customer satisfaction by responding to requests professionally and promptly. At LigoLab, we are constantly improving our quality of service by regularly reviewing and monitoring established performance indicators, enhancing our processes and tools continuously. We value open, honest, and clear communication of the integrity of information and its representation.

Our team conducts quarterly webinars and annual user group meetings to keep partner laboratories up to date on all the new developments and the recommended best practices.

Service level

LigoLab's Support Engineers are committed to answering calls and monitoring and responding to all tickets created via email. The team supports customers with reported issues, requests, and any further inquiries. Support provides detailed resolutions and system information for all inquiries.

LigoLab Support is structured in multiple levels/tiers. The engineers determine the need for escalation of inquiries when the service needed is beyond the scope of their role. All incoming inquiries will be monitored and triaged by L1 Support Engineers. If the inquiry is out of the domain of the L1 Engineer, they are to escalate to the L2 Engineers. Any inquiries deemed as an enhancement or custom request will be escalated to L3 Engineers (development team) to further assess and serve.

Within the ticketing software JIRA, tickets are tracked by four different types of origins. An email to the LigoLab support team automatically creates a ticket. Any incoming call will have a ticket created by the engineer who took the call for either tracking purposes or if the issue needs further escalations. Implementation requested items are created and distributed to the support engineers by the head of the department. All of these inquiries are then prioritized in the following manner:

- New tickets are the highest priorities and they are triaged by L1 Engineers. This process is primarily to ensure no emergency situations are sitting in the new ticket queue for an extensive amount of time.
- Engineer review tickets are the second-highest priority. These tickets have either been reopened, the response has been received from a client, answered by a developer, or de-escalated by a higher tier engineer.
- Open tickets are the third highest priority. These tickets are either in open or in processing status in each engineer's work queue.
- Waiting tickets are a combination of tickets that an engineer is waiting for a response from (either from a customer or a developer).
- Escalated tickets represent the tickets that the Support Engineer has escalated.

LigoLab ensures the quality of the service provided by performing a quality assessment of the requested inquiries. More than 50 percent of completed inquiries are QA'd for clear thorough communication, response times, and accurate resolution within the allotted time given. Any ticket that does not meet the standard is documented and communicated to the Support Engineer.

Tailored Features and configurations

The LigoLab Platform offers unlimited flexibility in setup, with over 1000-plus configurable entities, and the ability to quickly introduce new tests, results, reports, and fields. Features include a custom scripting language, flagging subsystem, rule and automation engine, and much more.

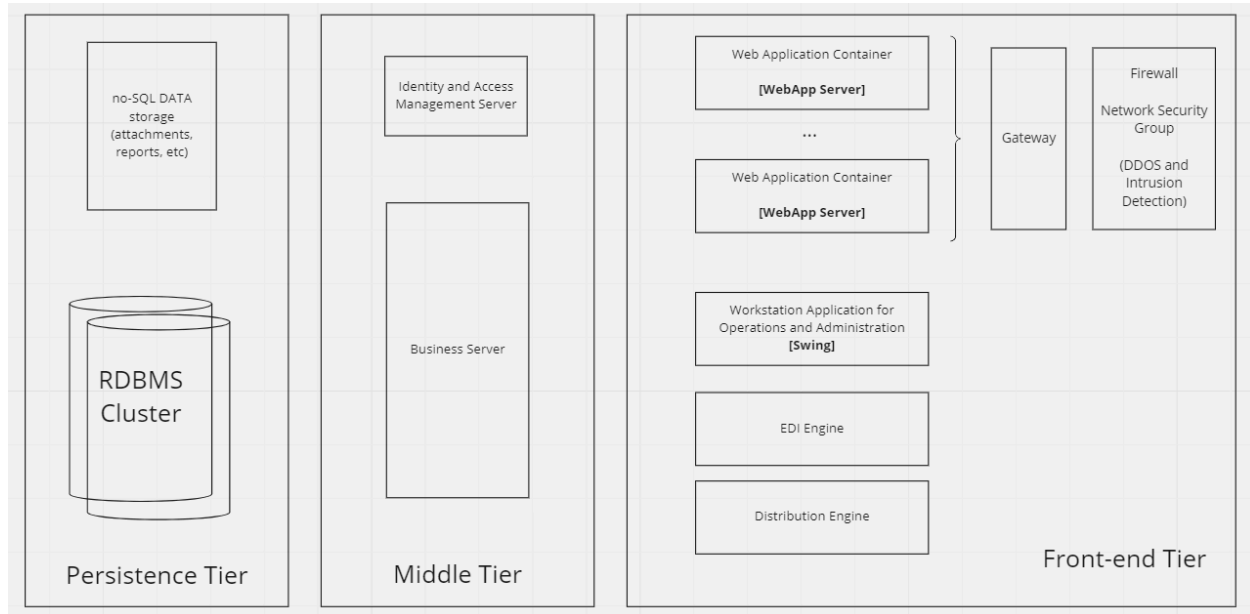
Our team develops 2-4 new features daily and can take requests and suggestions to add in the next version. We also can quickly deploy a feature with a quick turnaround of days to weeks as a hot-fix depending on the request.

All configurable requests are handled by our support team at no additional cost to the customer, we do not limit you by the number of requests, calls, or tickets.

Development requests are reviewed and can be built at no additional cost to the customer if they are completed within our timeline, if we need to stop our current development lifecycle to build a requested feature we will provide a do not exceed quote and also subsidize the development as it will benefit the entire community.

System Architecture

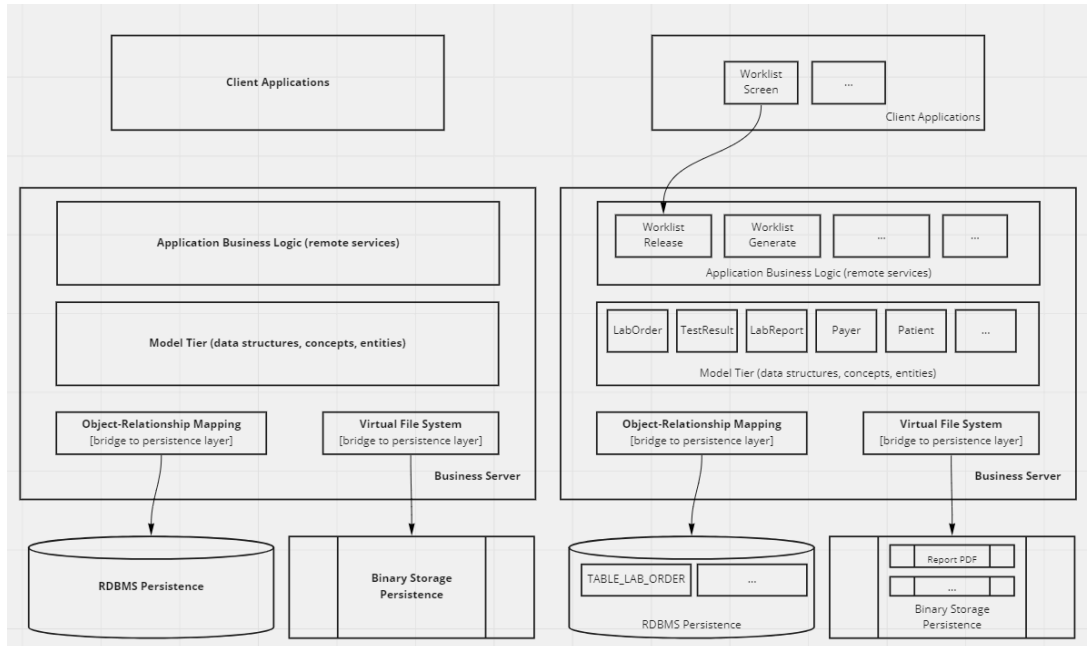
LigoLab Platform Architecture is designed to allow for a variety of deployment scenarios, including all cloud and on-prem installations.



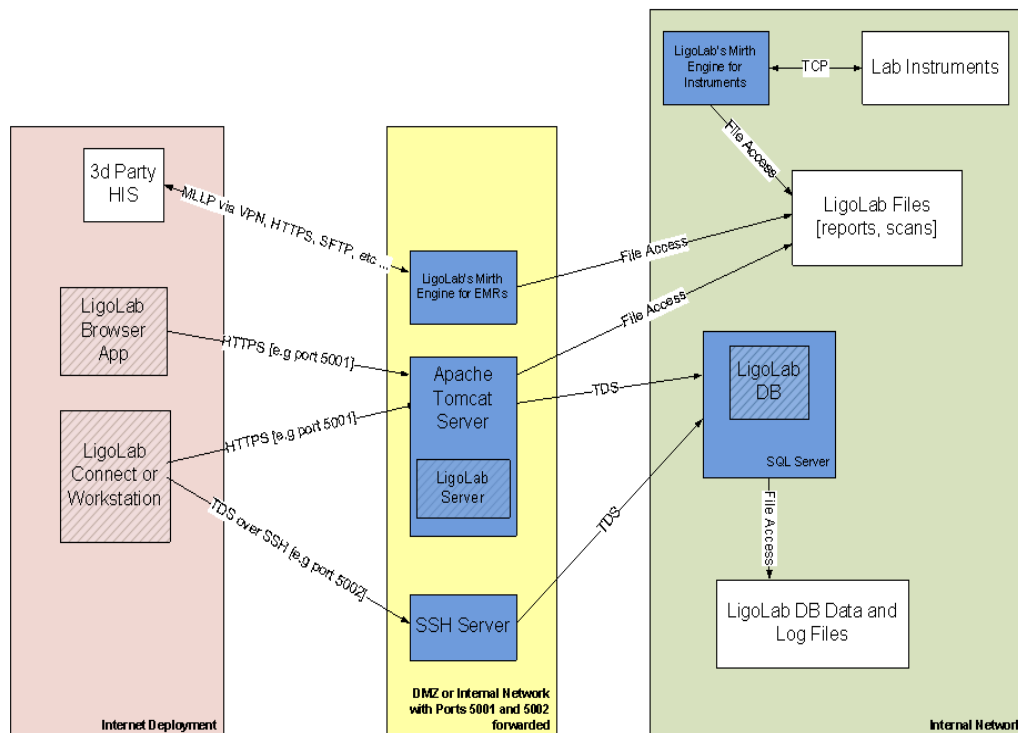
Multi-tier nature of the architecture allows LigoLab to accommodate installations of any scale and to accommodate specific requirements of each installation

- Persistence tier is isolated to support cloud-based DB clusters and virtualized file system access support flexible no-SQL data storage (reports, attachments, etc)
- Middle tier
 - Consolidates consistent handling of all business logic operations
 - Provides identity and access management
- Front-end tier provides convenient UI and integration end-points
 - Web application containers with a gateway proxy and a network security layer
 - Powerful workstation
 - EDI / Distribution engines

The following diagram illustrates the delegation of responsibility by layer using the Worklist Review / Release operation.



The following diagram shows high-level network layers



Software and Hardware: Requirements and Recommendations

Database Server:

- At least 4 CPU cores, 8+ recommended (depends on DB/Domain size).
- At least 32GB RAM, 64+GB recommended.

Storage Requirements

- For on-premises servers, all OS and non-OS drives must be SSDs (when procuring SSDs, purchase write-intensive or at least mixed-use grade disks). Using RAID is preferable.
- For cloud servers, select drives/storage with the highest IOPS performance.
- For performance reasons, the following should be allocated to separate drive groups. **Note:** All drives below should be dedicated, non-OS drives:
 - **DATA** (min 1000GB)
 - **LOGS** (min 400GB)
 - **TEMPDB** (min 100GB)

Software Requirements:

- Windows Server 2016 or greater
- SQL Server Standard Edition 2016 or greater

Login Credentials for the Local Account:

- Must be a local admin

Application Server:

- At least 4 CPU cores, 8+ recommended (depends on Domain size).
- At least 16GB RAM, 32+GB recommended.
- 1000GB–2000GB storage space. **Note:** The drive should be a separate, dedicated, non-OS drive (SSD for on-premises servers).

Used For:

- Attachments (images, scanned documents, etc.)
- Generated reports

- EDI XML files

Software Requirements:

- Windows Server 2016 or greater
- SSH Server (Bitvise)
- Apache Tomcat 10.1.x
- Java Runtime Environment 17 (64-bit)

Login Credentials for the Local Account:

- Must be a local admin

Off-site Backup

- 2000GB or higher (e.g. QNAP TS-259 Pro+)

Network Environment

- Open up the following ports on the firewall
- 8001 - SSH Server
- 5001 and 6001 - Apache Tomcat 7.x - Live and Test Environments respectively
- Internet Connectivity for all locations (hospital, lab, etc)
- Ping time of under 30ms
- 50 Mbps synchronous (check current speed here [speedtest.net](https://www.speedtest.net))
- Dedicated DNS entry for LigoLab (eg ligolab.clientname.com)
- SSL Security Certificates

LigoLab Station Application Requirements**General Workstation Requirements**

- Intel i3/i5/i7 Processor
- 16GB RAM
- 256GB-512GB storage space.
- Windows 8 / 10 / 11 (64-bit only)
- Java Runtime Environment 1.8 (64-bit only)
- Display and video card with a minimum and recommended resolution of 1920x1080
- Acer T232HL monitor for grossing touchscreens
- LigoLab does not recommend 4k resolution monitors

User-Based Hardware Requirements

Accessioning Workstation

- 1x Zebra GK420D direct thermal (with network port, not just usb)
- 1x Twain compatible document scanner
- 1x 1D/2D Barcode scanner

Grossing Station

- 1x Touchscreen monitor (Acer T232HL)
- 1x Twain compatible camera
- 1x 1D/2D Barcode scanner
- 1x Cassette printer

Histology

- 1x Touchscreen monitor (www.elotouch.com)
- 1x Zebra GK420T thermal transfer (Make sure it has network port, not just usb)
- 1x 2D barcode compatible barcode scanner

Pathologist

- 1x 2D barcode compatible barcode scanner
- 1x Twain compatible microscope camera

Hardware Compatibility and Recommendations

Label Printers

Zebra Z4M and newer

- network compatible

Zebra GK420D and newer

- network compatible

If using chemical resistant labels use the Zebra GK420T and newer

- network compatible

Cassette Printers

Leica IP C / LP C

General Data

Thermo

Note: all network compatible printers should be configured with static ip addresses

Microscope Cameras

Lumenera – Infinity 1

SPOT

Olympus (all models except EP50)

Document Scanners (by Canon)

Any DR* series that is twain compatible

Barcode Scanner - Any usb make and model

Backup Hardware Device -QNAP TS-259 Pro+

Patient Report Import Requirements

In this section, we detail the process of data migration from the existing Laboratory Information System to the LigoLab platform, focusing on the essential fields necessary to ensure a seamless and comprehensive transfer of critical patient data.

Order Information:

Accession #

Client [id, name]

Physician [id, first name, middle name, last name, suffix]

Collected Date

Received Date

Patient Information

id

MRN

first name

middle name

last name

gender

DOB

Address [street, unit, city, zip, phone]

Case Information:

Case ID (if different from accession number, for instance when system supports multiple cases per accession)

Test [id, name] (e.g. Surgical vs Cytology)

Completed Time

Short Diagnosis [plain text] if available

Expanded Diagnosis [plan text] if available

Report Information:

Reported Time

Report File Path [to identify the PDF file to be imported]

Link to a sample file: [x Data Export - Sample file v2.xlsx](#)

Interoperability

Instrument Communication, EMRs, HL7, Reporting, Etc.

The LigoLab Platform features open architecture with a built-in interface engine enabling high interoperability with virtually any service provider, EHR, PM, CRM, ERP, instrument, or vendor out there while eliminating redundancy and minimizing errors.

In the [video](#) below Anthony Oganessian, Chief Technology Officer of LigoLab further explains our interoperability engine and integration approach:



Interface Engine

We use and contribute source code to an open-source interface engine (Mirth) to facilitate routing and conversion between LigoXML and industry-standard formats (HL7, ASTM, X12) as well as to support a variety of transport protocols (MLLP, Web Service, S/FTP).

Specifications for industry-standard formats:

EMR / EHR

[Orders In](#)

[Results Out](#)

SendOut
[Orders Out](#)
[Results In](#)

ADT
[Incoming ADT](#)

Usage of standardized LigoLabXML for all integration scenarios combined with a dedicated interface engine allows the following key benefits:

- Robust import/export functionality across all integration scenarios
- Flexibility to convert to and accept any external format without limitations
- Flexibility to support any required APIs or transport protocols

Supported XML-Based Documents

- Order Import
- Result Import (from send-out labs)
- Analyzer Import

The platform also supports custom Webhooks with arbitrary processors for any needed integration:

- These Webhooks provide the full power of Java programming language and our data-model to perform any needed operations

The platform supports custom workflow builds (using Batch Processors):

- These processors provide the full power of Java programming language and our data-model to perform any needed operations

In addition, under the hood, our business server provides internal API to all our client applications (these APIs, while proprietary, can also be leveraged in Webhooks, Batch Processors, or even by external parties).

Internally, the LigoLab Platform is using a standardized XML format (LigoXML) to support all data export and import needs. LigoXML provides comprehensive coverage for all LIS data elements and supports the following import-export scenarios (LigoXML can convert to any format including HL7, flat file, ASTM, X12, and third-party APIs):

Supported Integration Scenarios

- CRM Import (ability to accept Client and Provider information maintained in an external CRM system)
- ADT Import (ability to accept Patient information from external systems)
- Order Import (ability to accept orders from external systems)
- Report Export (ability to export reports/results to an external system)
- Result Import (ability to accept results from external systems)

- Other Interface Engines (Mirth, Corepoint, Cloverleaf, Rhapsody, IGUANA, ELLKAY, Lifepoint, Halfpenny, etc)
- Clearinghouses (X12 837, 835, 270, 278, 276, etc)
- Instrument Request / Reply
- Instrument Order Export
- Instrument Result Import
- Generic LIS Export (ability to perform customized export of all LIS data elements (demographics, results, orders, diagnosis, CPT codes, etc.) to external systems (e.g. billing, external data warehouse, etc.)

LigoLab XML Configuration and Control

With LigoLabXML Administrators can:

- Define and customize trigger points, schedules, built-in delays, and any other control aspects of when LigoLabXML export takes place
- Fully customize what data elements are exported to LigoLabXML (from a single element - bare XML with a single accession tag to the full schema)
- Exercise full control via rule engine or custom scripting over inclusion/exclusion of LigoLabXML document section
- Maintain mappings for key lookup elements like clients, tests, order codes, etc.) to control all necessary compendium mapping in LigoLab

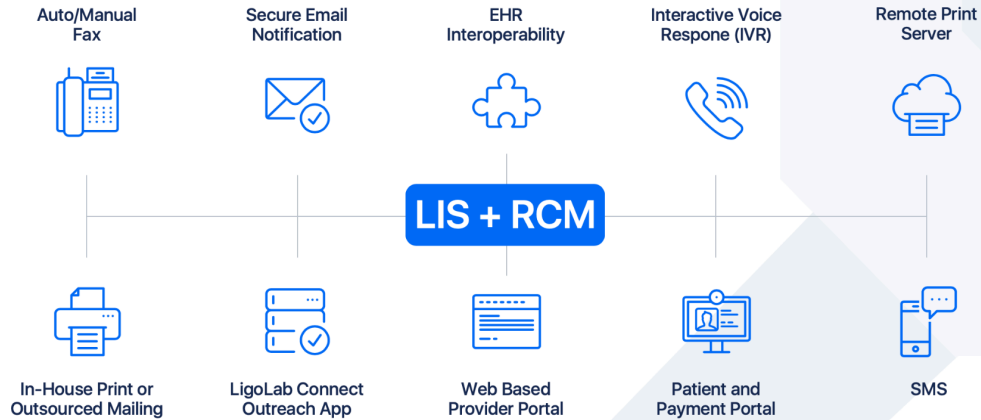
LigoLab API Support

- LigoLab Enterprise platform contains robust capabilities which allow laboratories to configure flexible and powerful integration points ranging from default out-of-the-box integrations with laboratory clients (e.g. orders import, results export) all the way to custom API integrations with internal and 3d party enterprise applications. Specifically, we support
 - HTTPs WebHooks for API integration
 - JSON data descriptors for mapping any entity in LigoLab to a JSON document
- To highlight, the LigoLab platform is capable of establishing integration end-points for ANY data records in the system and not just standard order/result interfaces. This allows us to create end-points that can integrate and automate any aspect of the system's behavior. Some examples below for illustration purposes:
 - accept test menu changes from external systems
 - push Client Group / Client data to external CRM systems
 - accept order-Rule configurations from external provider-facing portal
 - push detailed result information to a centralized data warehouse, etc...

Report and Document Distribution

In addition to EHR Interoperability reports can be distributed in the following methodologies:

Report and Document Distribution



Voice Dictation Capabilities

The LigoLab LIS product is compatible with the most common dictation solutions available in today's market. The following outlines the current functional capabilities of dictation integration:

- Speech to text dictation
- Software navigation

Data management, stats, QM

The LigoLab Platform is a transparent end-to-end solution that enables users to see potential problems as they arise, and eliminate the bottlenecks and the pain points quickly, leading to better customer service and faster turnaround times. Our platform allows users to quickly retrieve and analyze data in real-time, and the system's extensive search capabilities allow for lab operators to gain key business insights from patients, tests, clients, and data within the LIS. High visibility features include real-time queues for each lab role plus a comprehensive audit trail that records all user and system-based actions and events. Through data mining, users can easily pull detailed statistical reports and dashboards from the platform to monitor laboratory trends, key performance indicators, and benchmarks, while also meeting all compliance requirements. The predictive analytics and spend data produced by the system provide a true-cost view of the laboratory.

The LigoLab Platform offers a comprehensive out-of-the-box report engine that allows statistical summary queries for transactional records. Key features (illustrated using test result transactional records):

Feature	Example
Ability to filter down records for the report	Only include tests performed • during a selected date range (e.g. last month) • at a particular facility
Ability to group statistics by any combination of an extensive list of "summary by" dimensions	Create a summary by: • Client • Physician • Lab Department
Ability to select from a large set of pre-built reports	Choose one of many reports, like: • Normal / Abnormal % • Observation breakdowns • Monthly activity

Ability to present the data as a flat multi-dimensional matrix or a hierarchy: - Choose flat presentation to repeat same dimension values - Choose tree presentation to create a tree-like structure	Flat <table><tr><td>ClientA</td><td>Phys B</td><td>25</td></tr><tr><td>ClientA</td><td>Phys C</td><td>10</td></tr><tr><td>ClientA</td><td>Phys D</td><td>3</td></tr></table> Tree <table><tr><td>Client A</td><td>38</td></tr><tr><td>Phys B</td><td>25</td></tr><tr><td>Phys C</td><td>10</td></tr><tr><td>Phys D</td><td>3</td></tr></table>	ClientA	Phys B	25	ClientA	Phys C	10	ClientA	Phys D	3	Client A	38	Phys B	25	Phys C	10	Phys D	3
ClientA	Phys B	25																
ClientA	Phys C	10																
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Phys B	25																	
Phys C	10																	
Phys D	3																	
Ability to save created report structures as templates: - Given the infinite combinations of summary/report/filtration options, users can save built templates for ease of use as saved templates can be easily retrieved and re-used for new dates - Saved templates for different statistical reports can be organized in a report center for ease of consolidation (e.g. to quickly run standard monthly, quarterly reports sets)	- Illustrated report saved as a template can be easily re-run next month with the system automatically replacing the “last month” period with the new actual dates - The template can become a report center entry to be included in the Monthly report set																	

Ability to drill down into actual transactions No matter what patterns you are investigating, be that abnormal results, QC, or turn-around time trends you can drill down and search for the actual transactions without leaving your summary report	The illustrated report can drill down into result search to show 10 results performed for Client A - Phys C
Ability to export to Excel	All reports are exportable to Excel

Internal ad-hoc report engine (dynamic reports)

The LigoLab Platform offers:

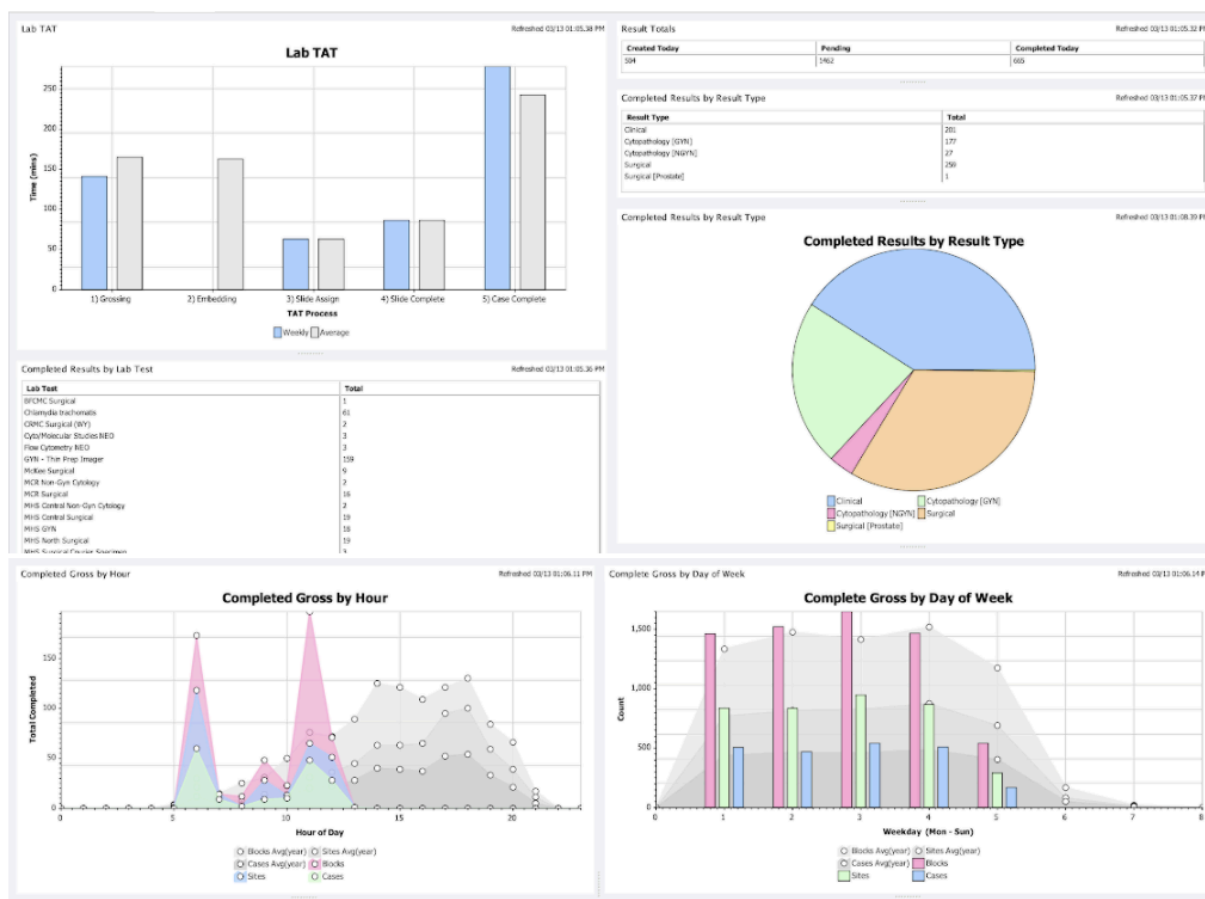
- powerful ad-hoc line-item reports
 - Select standard or build custom filters for any transactional or configuration records
 - Choose a multi-column presentation and choose any data elements of the record for each column
- Advanced scripting for ad-hoc summary reports (usually used by advanced system administrators)
 - Select standard or build custom filters for any transactional or configuration records
 - Design and script an arbitrary number of custom sections of the report

Internal Dashboards engine

The LigoLab Platform includes a dashboard engine that allows system administrators to configure versatile dashboard widgets (tables, pie, bar, line charts, etc.) based on:

- Out-of-the-box statistical reports (see 2.11.1)
- Custom scripting (Advanced)
- Custom direct SQL queries (Advanced)

Once configured all users can add pre-built widgets to their dashboards. There are hundreds of dashboard widgets and layouts available, here are some examples:



Dashboards widgets and views can be tailored for each user or role and new widgets can easily be created and available for users to select:



Frequently Discussed Items

Questions and Answers		
Category	Minimum Requirements	Description & Details
Interface Capabilities	Digital read capability and ability to Interface with EPIC, Centricity, and EMA EMRs	We have developed our own interface engine, connecting to thousands of third party instruments and software platforms including EPIC, Centricity, etc.
	Ability to migrate data in previous LIS into new LIS	LigoLab is capable of importing historical patient data from many different systems.
	Two-way Interface for requests	Bi-directional interfaces are supported.
Scalability and Configurability	Customized multi-site installation based on size and scale of lab throughput	LigoLab supports multi-site rollouts, including sublicensing for TC/PC arrangements.
System Features	Cloud based (SaaS system)	LigoLab supports cloud hosting.
	Bulk Faxing	The application natively supports faxing to multiple clients and destinations in bulk.
	Cassette printing	The application has successfully interfaced with cassette printers such as Leica IP C / LP C, General Data, and Thermo.
	Logistics Management	Specimen tracking and security is built into the platform and is weaved into every step of the lifecycle of the specimen.
	Automated tracking with bar codes or QR codes	Barcodes are central for LIS functionality. Specimen labels and documents are assigned unique barcodes by the platform and are able to be scanned back into the application for tracking and workflow needs.
	Automation of specimen processing and results workflows	LigoLab LIS specializes in specimen processing and results workflows, supported by a robust rules and automation functionality that enables the utmost in automation capabilities for the organization.
	Send out case tracking	The application includes a reference department module to track the outgoing and receipt of sendout cases and specimens. In addition, the platform can automatically fill out a requisition for each reference laboratory (or

		electronically integrated) and track TAT for each sendout procedure per lab.
	Ability to recognize diagnoses through key words and pre-populate plans	Macros are assigned key words and users have the option of linking Microscopic Description, Final Diagnosis, Comment Macros, Grade, and ICD/CPT Codes as desired.
	Batch editing capabilities	Batch editing of results is supported for Clinical testing and various other parts of the LIS. This would require an additional discussion for the scoping of all requirements.
Enterprise Lab Features	Ability to handle a busy multistate/brand lab – batch faxing, multiple phone and fax numbers and templates for branding	Multi-state/brand lab is achieved via report template settings which can be modified at the client, facility, region, and more. We support many multi-facility labs with their own branding, and we can also support branding per client or region.
Advanced Administrative Functionality	Ability to easily delete, edit, or create cases	N/A
	Enables system configuration, audit logging, user management, data management	System configuration capabilities are at the following levels: Global, Application, Site/Facility, Group, User, Workstation, and Local. User permissions managed on individual and group levels. Audit Logging available for all audit records and application events (includes user, date/time, workstation, entity, operation, previous, and new values).
Reporting	Preliminary diagnostic reporting	The system does support both automatic and manual release of preliminary reporting, as well as integrated reports and stages reports.
	Enhanced search functionality for historical reporting	Search functionality for broad system search by order, result, patient, and report level. Also can be as specific as diagnosis or observation value. Linked patient history can be accessed for internal reference and report presentation as needed.
	Multi-page or individual PDF reporting	This is fully supported, and all templating and reporting generation is done within the LigoLab platform without the need for any third-party system (Word, Crystal Reports,

		etc.).
	Transcription print preview	Included.
	Ability to lock cases when making edits	While one user has a result open the case will be automatically locked for all other users. There is an optional user permission to grant ability to unlock.
Communication	Ability to communicate with other users through system	The main entities that include case, report, and result all have a default internal notes feature, and more advanced communications are supported via the Workflow Action Queue(s) / CRM module.
Security	HIPAA compliant	LigoLab does operate within the strict guidelines of HIPAA, as shown in these security measures: SHA2 encryption: Logging into the server is done through SHA2. This ensures a secure tunnel between a workstation and the server. SSH tunnel: Data is transferred to and from the client through an encrypted SSH Tunnel. Data backup/storage: Company policy is to support a client with data backup/storage to ensure data is recoverable. Access Control: * Unique usernames and passwords are stored in the database with encrypted keys. * Security questions/answers are stored in the same way. * System has an automatic log-off for user inactivity after a certain amount of time (set by client). Audit: * LigoLab has a thorough audit trail from the beginning of a lab order to when it has been

		reported. * LigoLab also keeps thorough logs of all activities within the system.
General System Questions	Describe the system's ability to search: • Case history • Prior case(s) • Filtered searches (e.g. search all cases with a specific diagnosis) • Comments • Providers/Pathologists	Search functionality for broad system search by order, result, patient, and report level. Also can be as specific as diagnosis or observation value.
	Describe how the system triggers a warning when in an existing case and prevents or restricts user from creating a new case	At order entry if system detects if patient has already had a case entered for current Date of Service (DOS) it can be configured to allow or disallow this action.
	Describe the system's ability to view Cases in the Pathologist's queue (worklist) and view who placed the order or priority	The Pathologist Queue is the main way for pathologist to review their cases including GYN, NGYN, Surgical, Autopsy. Can access order via right-click or from within the edit result screen. Order audit trail will reveal all changes to the order and corresponding user who performed the action including order priority.
	Does the system have a standard medical terminology data dictionary?	Yes, Integrated into the platform and available on all fields.
	Does the system have the ability to create a custom data dictionary?	Yes. When a word is entered that the dictionary does not recognize it will underline it in red and user has a right-click option to add to dictionary.
	Describe the system's ability to edit, track and retain comments on orders and specimens, including who placed/edited the comments.	Main entities including case, report, and result have default notes feature which records user and time/date. More advanced communications are supported via Workflow Action Queue(s).
	Describe the system's ability to print: • Search result list	-Search functionality for broad system search by order, result, patient, and report level. Also can be as specific as diagnosis or observation

	• Worklist • Slide Labels • Specimen Labels • Documents (e.g. reports) • Slides • Cassettes	value. -Worklists are highly customizable including worksheet printout. -LigoLab is experienced with slide/specimen label printers such as Zebra and Dymo. -Every screen includes a print functionality including a save as excel feature for data. -LIS has successfully interfaced with cassette printers such as Leica IP C / LP C, Primera, General Data, and Thermo.
	Describe the system's ability to interface/integrate with multiple other system's instruments e.g. EMR, EHR, scheduling system, etc.	LigoLab is able to interface with any external system that has interfacing capabilities.
	Describe the system's reporting capabilities	Report templates are highly customizable and distribution is currently available via fax, in-house print, email, web and EDI.
	Are there additional 3rd party tools that are required that will not be supplied by your solution? If yes, please list.	Depending on which modules are requested we will determine if any additional third party solutions are needed (eg, Stripe account for TestDirectly, Clearing House for Billing and RCM). In these types of scenarios, the client is responsible for the creation and management of said accounts.
	Describe any other associated hardware/software that is required or recommended that may not be included in this purchase.	Computer workstation to run the application Label printers Document printers Casesette printers Touchscreen monitors (grossing only) Document scanners Barcode scanners Microscope cameras (pathology only)
	Is the client-side of your application web browser or desktop based? List compatible browsers and operating systems, as well as, any plugins required for the application to	Both web browser and desktop-based options are available, and both are compatible for Mac or Windows Operating Systems. All plugins are built into the platform and there is no need to license any other client tools.

	function.	
	Describe the system's ability to pull clinical information / diagnosis from requisitions. What are the 2-way interface capabilities from EHRs / EMRs?	LigoLab supports communication of electronic order information via EHR / EMR interfaces via HL7.
	Would we have the ability to create a system that would interface with the LIS?	LigoLab is able to interface with any external system that has interfacing capabilities.

Platform Overviews and Video Demos

[LigoLab Operating Platform Quick Overview](#)

[LigoLab Client Testimonials](#)

TestDirectly - [Patient Engagement, Direct-to-Consumer Platform](#)

[Test Directly Overview](#)

[On-site and Collection Workflow](#)

[Home Test Kit Solution](#)

Laboratory Informatics Platform

[LigoLab LIS Presentation](#)

[LigoLab Web Connect \(Client Portal\)](#)

[Basic Accessioning](#)

[Multi-Facility Workflow, Site Security, Transfers, and Stats Reports](#)

[Clinical Laboratory Demonstration](#)

[Clinical Lab Specimen Tracking \(Including Transfers and Sendouts\)](#)

[Quality Control \(QC\) Module](#)

Anatomic Pathology

[AP Specimen Processing and Tracking](#)

[LigoLab Grossing Touch Screen](#)

[Pathologist Workflow \(Simple Case Sign-Out\)](#)

[Pathologist Workflow \(Complex Case Sign-Out\)](#)

[Cancer Protocol / Synoptic Template](#)

[Digital Pathology Integration](#)

[General Cytology Workflow](#)

[Hemepath Reporting](#)

Revenue Cycle Management

[LigoLab RCM Presentation](#)

[In-Depth RCM Demonstration](#)