

		LABORATORY INFORMATION SYSTEMS		NOVEMBER 2019 CAP TODAY 55
Part 1 of 10		Allscripts Susan Eben susan.eben@allscripts.com Alpharetta, GA 404-863-0611 www.allscripts.com	American Soft Solutions Corp. Ehab Moniem ehab@prolisphere.com Morganville, NJ 732-272-0052 www.prolisphere.com	ApolloLIMS (formerly Common Cents Systems) Brett Paulus brett.paulus@apollolims.com Nashville, TN 615-834-7666 www.apollolims.com
See captodayonline.com/productguides for an interactive version of guide				
Name of laboratory information system	Allscripts Lab†	Prolis	ApolloLIMS	
First ever*/Most recent LIS installation (based on August 2019 survey deadline)	1972/May 2019 (last update: October 2018)	1999/August 2019 (last update: July 2019)	1987/August 2019 (last update: March 2019)	
Total No. of contracts for sites operating LIS	75	49	81	
No. of sales of LIS between August 2018–July 2019	4	6	9	
Total No. of sites operating LIS (U.S. hospitals/U.S. independent labs/U.S. clinics or group practices/U.S. public health labs/other U.S. sites/foreign sites)	188 (180/4/0/0/0/4)	—	81 (2/31/26/17/5—cannabis and drug court/0)	
• Types of foreign installations	—	independent labs	—	
No. of LIS installations between August 2018–July 2019	4	6	12	
Percentage of high-volume** sites installed/Low-volume*** sites installed	85%/15%	60%/40%	45%/55%	
Percentage of sites where company has no other software installed	15%	90%	100%	
Foreign countries where company actively markets LIS	worldwide	none	none	
• Foreign countries in which LIS is installed	Canada, Saudi Arabia, Qatar	—	—	
Company provides list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (with client's permission)	yes (partial list of comparable sites)	
Clients restricted from sharing their experience with company or LIS	no	no	no	
No. of employees in entire company	8,000	10	20	
Range in No. of user workstations in sites operating LIS	4–500 (average, 75)	4–42 (average, 32)	2–56 (average, 12)	
Central hardware or service type	Hewlett-Packard, IBM, Dell	—	on-premise Windows server, ASP subscription service	
Programming language(s)	Object Pascal, C, C#, Java, Perl	Visual Basic .Net	HTML and JavaScript web portal, InterSystems Caché LIMS application	
Operating system(s)	Windows, Red Hat Enterprise Linux, Oracle Linux	Windows	Windows server	
Databases and tools	Oracle	SQL server	InterSystems Caché, Microsoft SQL server	
System includes full transaction logging	yes	yes	yes	
Languages (other than English) offered on LIS	none	none	none	
Features/modules incorporated in product:				
• Chemistry/Hematology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites	
• Bar-coded collection labels	installed at client sites	installed at client sites	installed at client sites	
• Microbiology/Public health microbiology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites	
• Blood bank donor/Blood bank transfusion	available via contract with third party (both features)	in development/in development	not available/not available	
• Surgical pathology/Cytology	available via contract with third party (both features)	installed at client sites/installed at client sites	not available/not available	
• Molecular pathology/Cytogenetics/Flow cytometry	available via contract with third party (all 3 features)	installed at client sites (all 3 features)	not available/not available/not available	
• EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites	
• EHR interface for order entry/EHR interface for results reporting	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites	
• EHR interface for packaging results into PDF format	in development	installed at client sites	installed at client sites	
• EHR interface for packaging results into CDA1 format/CDA2 format	not available/not available	—	installed at client sites/not available	
• Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites	
• Management and statistical reporting	installed at client sites	installed at client sites	installed at client sites	
• Connection to provider offices/Commercial lab functionality	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites	
• Compliance checking	available via Allscripts Compliance Advisor	installed at client sites	installed at client sites	
• Billing and accounts receivable	available via contract with third party	installed at client sites	installed at client sites	
• Materials management and inventory	available via contract with third party	in testing	installed at client sites	
• Test partition	installed at client sites	available via contract with third party	installed at client sites	
• Remote faxing/Remote printing	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites	
• HIPAA-standard transaction formats	installed at client sites	installed at client sites	installed at client sites	
• Web-based remote inquiry of reports/Web access for order entry	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites	
• Specimen management and tracking	installed at client sites	in testing	installed at client sites	
• Environmental health/Business analytics	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites	
• Reference lab interface for orders, results return, status return	installed at client sites	installed at client sites	installed at client sites	
• Clinical analytics/Big Data	installed at client sites/avail. via contract with third party	installed at client sites/installed at client sites	installed at client sites/installed at client sites	
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using specified formats**** for:				
• Microbiology (culture and sensitivity)	yes	yes	yes	
• Other reportable diseases (blood lead, immunology, etc.)	yes	yes	yes	
• Tumor diagnosis and cases to regional cancer registry*****	no	yes	no	
LIS bidirectionally interfaces to other vendors' lab systems	yes (to Cerner, Sunquest, SCC Soft Computer, NovoPath, Haemonetics, WellSky)	yes	yes (to any vendor with HL7 or API interfacing functionality)	
Lab automation systems or workcells to which LIS has a direct interface	Beckman Coulter, Siemens, Ortho, Sysmex, Thermo Scientific, Olympus, Roche Diagnostics, Abbott Diagnostics, Tecan, Bayer, m-u-t America, Sarstedt, Yaskawa, others	none (planned for future)	Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Sysmex, Thermo Scientific, Olympus, Roche, Abbott, Tecan, Bayer, Dynex Technologies, others	
LIS allows for third-party updates of tables and rules	yes (using AMA, CMS, USPS, Regenstrief Institute, others)	no	no	
LIS allows for image capture, display, reporting	no (targeted for next major release)	yes	yes	
LIS provides indexed field in each test definition for LOINC code	yes	yes	yes	
Company provides LOINC dictionary for each new installation	yes	no	yes	
LIS supports use of SNOMED CT for all cases	yes	no	yes	
LIS uses third-party middleware for LIS–instrument interfaces	yes (for all instrument interfaces)	no (interface directly)	no (interface directly)	
Company provides LIS clients with positive patient ID software to identify patients and blood specimens collected at bedside	yes (integrated in LIS)	no	no	
• LIS interfaces to third-party positive patient ID software used at bedside	no	—	—	
Source code/User group that meets on established schedule	escrow/yes (via webinar, conference call, in person)	no/no	no/yes (via conference call)	
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings, others	ad hoc query tools, dictionary settings	ad hoc query tools, user-defined interfaces, dictionary settings, custom requisitions, custom reports, others	
Standard software maintenance fee covers periodic updates to LIS	yes (public domain table updates, hot patches, service packs, minor releases)	yes	yes	
• Clients must install updates in specified timespans to avoid maintenance fee increase	no	—	no	
• Fee for software modifications to comply with federal regulations and laws	potential charges for implementation services, interfaces, new modules provided with upgrades	standard (no charge)	standard (no charge)	
LIS functionality available via ASP or cloud-based data center	no	available as a local server or an ASP or cloud-based product (client's option)	available as a local server or an ASP or cloud-based product (client's option); latter options require monthly fee based on users, instruments, interfaces, modules	
Cost for smallest existing LIS install (includes hardware, software, install, training)	—	\$10,000 (annual maintenance fee, \$1,800)	—	
Cost for largest existing LIS install (includes hardware, software, install, training)	—	\$60,000 (annual maintenance fee, \$10,800)	—	
Distinguishing product features (supplied by company)	• fits well in most organizations—extremely scalable, flexible, and customizable • substantially decreased total cost of ownership with availability of Linux platform • outstanding support and services organization	• single-module system for hematology, clinical, microbiology, pathology, toxicology, molecular testing • specimen-centric system for clinical, industrial, research, and environmental laboratories • integrated client, insurance, and patient billing (primary and secondary) with medical-necessity tool and accounts receivable system	• flexible, rules-based, compliant platform for any lab setting • intuitive navigation for ease of use and to assist with rapid training and deployment • range of functionality—outreach portal, QC, imaging, instrument/billing/EMR integration, QA, specimen storage	
*any brand or model **generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day ***generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day ****HL7 2.5.1, LOINC, SNOMED, etc. *****using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable	†formerly McKesson Lab and Horizon Lab			

Part 2 of 10	Aspyra LLC Gary Bennett gbennett@aspyra.com Jacksonville, FL 800-437-9000 www.aspyra.com	Cerner Corp. Chelsea Bressers laboratory@cerner.com North Kansas City, MO 816-221-1024 www.cerner.com	Clinical Software Solutions Emily Brester info@clin1.com Queen Creek, AZ 800-570-0474 www.clin1.net
See captodayonline.com/productguides for an interactive version of guide			
Name of laboratory information system	CyberLAB	Cerner Laboratory†	CLIN1 Laboratory†
First ever*/Most recent LIS installation (based on August 2019 survey deadline)	1982/August 2019 (last update: August 2019)	1982/August 2019 (last update: March 2018)	1987/July 2019 (last update: August 2019)
Total No. of contracts for sites operating LIS	70	340 domains (not tracked by contract)	—
No. of sales of LIS between August 2018–July 2019	2	22	4
Total No. of sites operating LIS (U.S. hospitals/U.S. independent labs/U.S. clinics or group practices/U.S. public health labs/other U.S. sites/foreign sites)	297	— (tracked by domain, not site)	60
• Types of foreign installations	—	—	—
No. of LIS installations between August 2018–July 2019	1	20	4
Percentage of high-volume** sites installed/Low-volume*** sites installed	38%/62%	—	10%/90%
Percentage of sites where company has no other software installed	70%	<10%	—
Foreign countries where company actively markets LIS	Asia, Caribbean	Australia, Canada, Europe, Latin America, Middle East, Singapore, United Kingdom	Canada, United Kingdom
• Foreign countries in which LIS is installed	Asia, Caribbean	Australia, Brazil, Canada, Malaysia, Qatar, Saudi Arabia, Singapore, United Kingdom, United Arab Emirates	—
Company provides list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (partial list of comparable sites)	yes (partial list of comparable sites)
Clients restricted from sharing their experience with company or LIS	no	no	no
No. of employees in entire company	26	26,000+	—
Range in No. of user workstations in sites operating LIS	2–148 (average, 75)	—	3–150 (average, 10)
Central hardware or service type	client hosted or cloud hosted	—	client/server
Programming language(s)	C++, Visual Basic, HTML5, Cobol	Java, Visual Basic, C++, C#, Visual C	4GL
Operating system(s)	Microsoft Windows	HP-UX, AIX, VMS	Windows
Databases and tools	Microsoft SQL	Oracle	SQL
System includes full transaction logging	yes	yes	yes
Languages (other than English) offered on LIS	Chinese and Vietnamese (for results reporting only)	British-English, German, Spanish, French	—
Features/modules incorporated in product:			
• Chemistry/Hematology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Bar-coded collection labels	installed at client sites	installed at client sites	installed at client sites
• Microbiology/Public health microbiology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Blood bank donor/Blood bank transfusion	not available/not available	not available/installed at client sites	available but not installed/available but not installed
• Surgical pathology/Cytology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Molecular pathology/Cytogenetics/Flow cytometry	installed at client sites/installed at client sites/ installed at client sites	installed at client sites/installed at client sites/ installed at client sites	installed at client sites/installed at client sites/ available but not installed
• EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites
• EHR interface for order entry/EHR interface for results reporting	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• EHR interface for packaging results into PDF format	installed at client sites	installed at client sites	installed at client sites
• EHR interface for packaging results into CDA1 format/CDA2 format	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Management and statistical reporting	installed at client sites	installed at client sites	installed at client sites
• Connection to provider offices/Commercial lab functionality	—/installed at client sites/installed at client sites	—/installed at client sites	installed at client sites/installed at client sites
• Compliance checking	installed at client sites	installed at client sites	installed at client sites
• Billing and accounts receivable	available via contract with third party	installed at client sites	installed at client sites
• Materials management and inventory	available via contract with third party	installed at client sites	installed at client sites
• Test partition	installed at client sites	installed at client sites	installed at client sites
• Remote faxing/Remote printing	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• HIPAA-standard transaction formats	installed at client sites	installed at client sites	installed at client sites
• Web-based remote inquiry of reports/Web access for order entry	installed at client sites/installed at client sites	available via provider portal/available via provider portal	installed at client sites/installed at client sites
• Specimen management and tracking	in development	installed at client sites	installed at client sites
• Environmental health/Business analytics	avail. via contract with third party/installed at client sites	installed at client sites/installed at client sites	available but not installed/installed at client sites
• Reference lab interface for orders, results return, status return	installed at client sites	installed at client sites	installed at client sites
• Clinical analytics/Big Data	installed at client sites/installed at client sites	installed at client sites/available via HealthIntent	installed at client sites/installed at client sites
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using specified formats**** for:			
• Microbiology (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis and cases to regional cancer registry*****	yes	yes	under development
LIS bidirectionally interfaces to other vendors' lab systems	yes (to Cerner)	no	yes
Lab automation systems or workcells to which LIS has a direct interface	Beckman Coulter, Ortho Clinical Diagnostics, Roche Diagnostics, Abbott Diagnostics	Beckman Coulter, Siemens, Sysmex, Olympus America, Roche Diagnostics, Abbott Diagnostics, others	Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Sysmex, Thermo Scientific, Olympus America, Roche Diagnostics, Abbott Diagnostics, Tecan, Bayer, others
LIS allows for third-party updates of tables and rules	no	no	no
LIS allows for image capture, display, reporting	no	yes	yes
LIS provides indexed field in each test definition for LOINC code	yes	yes	yes
Company provides LOINC dictionary for each new installation	yes	yes	no
LIS supports use of SNOMED CT for all cases	yes	yes	yes
LIS uses third-party middleware for LIS–instrument interfaces	combination of direct interfaces and middleware	no (interface directly)	no (interface directly)
Company provides LIS clients with positive patient ID software to identify patients and blood specimens collected at bedside	no	yes (POC Specimen Collection integrated, Bridge Specimen Collections interfaced; additional fee)	yes (integrated in LIS)
• LIS interfaces to third-party positive patient ID software used at bedside	yes	yes	yes
Source code/User group that meets on established schedule	escrow/yes (via webinar)	no/yes (in person and via webinar)	no/yes (via webinar and conference call)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings, Microsoft SQL Reporting Services	ad hoc query tools, user-defined interfaces, dictionary settings	ad hoc query tools, dictionary settings
Standard software maintenance fee covers periodic updates to LIS	yes	yes	yes
• Clients must install updates in specified timespans to avoid maintenance fee increase	no	no	no
• Fee for software modifications to comply with federal regulations and laws	changes required by FDA included with current SLA; meaningful use options require a 10% surcharge	standard (no charge)	standard (no charge)
LIS functionality available via ASP or cloud-based data center	available as a local server or an ASP or cloud-based product (client's option); latter options require 3-year minimum subscription commitment plus install fees	available as a local server or an ASP or cloud-based product (client's option)	available as a local server or an ASP or cloud-based product (client's option)
Cost for smallest existing LIS install (includes hardware, software, install, training)	\$40,000 (annual maintenance fee, \$5,000)	—	\$15,000 (annual maintenance fee, \$3,000)
Cost for largest existing LIS install (includes hardware, software, install, training)	\$750,000 (annual maintenance fee, \$85,000)	—	\$350,000 (annual maintenance fee, \$75,000)
Distinguishing product features (supplied by company)	• multi-site capability • drugs-of-abuse module with reporting for pain management • strong interfacing capabilities	• driving innovations to connect laboratories, customers, and devices • best-of-breed LIS with a large, diverse client base • more than 35 years of creating and implementing LIS innovations	• company understands advanced analytical methods required for new protocols, interpretations, and unique data-management requirements • company will customize interfaces and processors • staff are laboratory professionals developing tools for research and clinical laboratory professionals
*any brand or model **generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day ***generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day ****HL7 2.5.1, LOINC, SNOMED, etc. *****using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable		†formerly Cerner PathNet	†formerly CSSWin LIS, CLIN1-LIS

Part 3 of 10	Comp Pro Med Jeff Fisher sales@comppromed.com Santa Rosa, CA 800-276-4522 www.comppromed.com	CompuGroup Medical Gene Williamson gene.williamson@cgm.com Owings Mills, MD 410-517-0330 www.cgm.com/us	Computer Service and Support Melanie Burdhimo mburdhimo@csslis.com Linwood, NJ 609-653-6444 www.csslis.com
See captodayonline.com/productguides for an interactive version of guide			
Name of laboratory information system	Polytech	CGM LABDAQ†	Avalon
First ever*/Most recent LIS installation (based on August 2019 survey deadline)	1981/August 2019 (last update: August 2019)	1991/August 2019 (last update: July 2019)	1980/May 2018 (last update: May 2019)
Total No. of contracts for sites operating LIS	172	1,345	—
No. of sales of LIS between August 2018–July 2019	10	124	5
Total No. of sites operating LIS (U.S. hospitals/U.S. independent labs/U.S. clinics or group practices/U.S. public health labs/other U.S. sites/foreign sites)	159 (28/48/29/1/0/53)	2,007 (38/297/1,629/0/34—micro hospitals, freestanding ERs, correctional facilities/9)	134 (0/131/0/0/0/3)
• Types of foreign installations	hospitals, clinics	clinics, independent labs	—
No. of LIS installations between August 2018–July 2019	10	109	5
Percentage of high-volume** sites installed/Low-volume*** sites installed	0/100%	not tracked	38%/62%
Percentage of sites where company has no other software installed	100%	not tracked	10%
Foreign countries where company actively markets LIS	none	none	none
• Foreign countries in which LIS is installed	—	UAE, Malawi, Virgin Islands, Tanzania, Iran	United Arab Emirates, Canada
Company provides list of client sites to potential customers on request	no (information is confidential)	yes (partial list of comparable sites)	yes (partial list of comparable sites)
Clients restricted from sharing their experience with company or LIS	no	no	no
No. of employees in entire company	13	250	16
Range in No. of user workstations in sites operating LIS	2–200 (average, 15)	1–150+ (average, 5–10)	2–100+ (average, 18)
Central hardware or service type	any (client supported)	client/server (business grade)	IBM RS/6000 Power Servers
Programming language(s)	C++	.Net	Java, PHP, C++
Operating system(s)	Windows 7, 8, 10	Windows Server 2016 Standard, Windows Server 2019 Standard; Windows 10 on workstations	AIX, Linux
Databases and tools	Pervasive	Oracle	MySQL
System includes full transaction logging	yes	yes	yes
Languages (other than English) offered on LIS	all languages supported by Microsoft OS	none	—
Features/modules incorporated in product:			
• Chemistry/Hematology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Bar-coded collection labels	installed at client sites	installed at client sites	installed at client sites
• Microbiology/Public health microbiology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/available but not installed
• Blood bank donor/Blood bank transfusion	in testing/in testing	not available/not available	not available/not available
• Surgical pathology/Cytology	installed at client sites/installed at client sites	not available/not available	available but not installed/—
• Molecular pathology/Cytogenetics/Flow cytometry	installed at client sites/installed at client sites/ installed at client sites	installed at client sites/not available/ installed at client sites	—/not available/not available
• EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites
• EHR interface for order entry/EHR interface for results reporting	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• EHR interface for packaging results into PDF format	installed at client sites	installed at client sites	installed at client sites
• EHR interface for packaging results into CDA1 format/CDA2 format	installed at client sites/installed at client sites	not available/not available	installed at client sites/installed at client sites
• Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Management and statistical reporting	installed at client sites	installed at client sites	installed at client sites
• Connection to provider offices/Commercial lab functionality	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Compliance checking	installed at client sites	installed at client sites	—
• Billing and accounts receivable	installed at client sites	available via CGM DAQbilling	installed at client sites
• Materials management and inventory	installed at client sites	installed at client sites	installed at client sites
• Test partition	installed at client sites	installed at client sites	installed at client sites
• Remote faxing/Remote printing	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• HIPAA-standard transaction formats	installed at client sites	installed at client sites	installed at client sites
• Web-based remote inquiry of reports/Web access for order entry	installed at client sites/installed at client sites	available via CGM LABNEXUS (both features)	installed at client sites/installed at client sites
• Specimen management and tracking	installed at client sites	installed at client sites	installed at client sites
• Environmental health/Business analytics	in development/installed at client sites	installed at client sites/installed at client sites	not available/installed at client sites
• Reference lab interface for orders, results return, status return	installed at client sites	installed at client sites	installed at client sites
• Clinical analytics/Big Data	installed at client sites/installed at client sites	installed at client sites/not available	available but not installed/available but not installed
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using specified formats**** for:			
• Microbiology (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis and cases to regional cancer registry*****	yes	no	no
LIS bidirectionally interfaces to other vendors' lab systems	yes	yes (to NovoPath, AP Easy, Cerner, Epic, Orchard, Sunquest, Psyche, SimpleLIMS, HEX)	yes (to Orchard, Sunquest, CompuGroup Medical, Office Ally, Telcor, Halfpenny Technologies, LabSoft, NextGen, Epic, Medware, Xifin, others)
Lab automation systems or workcells to which LIS has a direct interface	Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Sysmex, Thermo Scientific, Olympus America, Roche Diagnostics, Abbott Diagnostics	Beckman Coulter, Siemens, Roche Diagnostics, Tecan, Bayer	Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Sysmex, Thermo Scientific, Olympus America, Roche, Abbott, Tecan, Bayer, Yaskawa, others
LIS allows for third-party updates of tables and rules	yes (using LOINC, NDC, ICD-10, others)	yes (using CodeMap, CMS diagnosis codes)	yes (using CodeMap)
LIS allows for image capture, display, reporting	yes	yes	yes
LIS provides indexed field in each test definition for LOINC code	yes	yes	yes
Company provides LOINC dictionary for each new installation	yes	no	no
LIS supports use of SNOMED CT for all cases	yes	no (result level SNOMED supported)	yes
LIS uses third-party middleware for LIS–instrument interfaces	no (interface directly)	combination of direct interfaces and middleware	no (interface directly)
Company provides LIS clients with positive patient ID software to identify patients and blood specimens collected at bedside	yes (integrated in LIS; additional fee)	no	no
• LIS interfaces to third-party positive patient ID software used at bedside	no	no	yes
Source code/User group that meets on established schedule	no/no	escrow/yes (in person and via webinar)	escrow/no
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings	ad hoc query tools, user-configurable rules, user-defined fields for patients and requisitions, field aliasing	ad hoc query tools, user-defined interfaces, dictionary settings, access to SQL database
Standard software maintenance fee covers periodic updates to LIS	yes	yes	yes
• Clients must install updates in specified timespans to avoid maintenance fee increase	no	no	no
• Fee for software modifications to comply with federal regulations and laws	standard (no charge)	standard (no charge)	standard (no charge)
LIS functionality available via ASP or cloud-based data center	no	no	available as a local server or an ASP or cloud-based product (client's option); latter options involve set-up charge and monthly fee based on modules used
Cost for smallest existing LIS install (includes hardware, software, install, training)	—	\$20,000 (annual maintenance fee, \$2,500)	\$25,000 (annual maintenance fee, \$4,000)
Cost for largest existing LIS install (includes hardware, software, install, training)	—	\$700,000 (annual maintenance fee, \$100,000)	\$265,000 (annual maintenance fee, \$42,000)
Distinguishing product features (supplied by company)	• product quality: built on advanced technology, with lower costs and no downtime • unmatched support: Comp Pro Med provides direct support from senior programmers and can go live in less than four weeks • transparent pricing: Comp Pro Med uses a highly competitive pricing model, with no hidden charges or extra fees	• advanced integration and connectivity capabilities with EHRs, billing, reference labs, and analyzers • powerful user-defined rules and data-mining queries to assist with decision-support logic, data analytics • experienced, responsive support staff, sales personnel, and system integration department for complete system support <i>†formerly marketed by Antek HealthWare as LabDAQ</i>	• ease of use and training • ease of integration with other products • ease of access to database for internal use
*any brand or model **generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day ***generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day ****HL7 2.5.1, LOINC, SNOMED, etc. *****using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable			

Part 4 of 10	Diamond Computing Jim Campbell jim@diamondcomputing.net Johns Creek, GA 770-496-0286 www.diamondcomputing.net	Epic Nick Trentadue ntrentad@epic.com Verona, WI 608-271-9000 www.epic.com	Evident LLC Sales Department sales@cpsi.com Mobile, AL 800-711-2774 www.evident.com
See captodayonline.com/productguides for an interactive version of guide			
Name of laboratory information system	LabGEM	Beaker	Thrive EHR–LIS†
First ever*/Most recent LIS installation (based on August 2019 survey deadline)	1984/May 2019 (last update: May 2019)	1980/August 2019 (last update: August 2019)	1986/August 2019 (last update: September 2018)
Total No. of contracts for sites operating LIS	14	163	403
No. of sales of LIS between August 2018–July 2019	2	30	16
Total No. of sites operating LIS (U.S. hospitals/U.S. independent labs/U.S. clinics or group practices/U.S. public health labs/other U.S. sites/foreign sites)	14 (2/9/2/1/0/0)	550	403 (403/0/not tracked/not tracked/0/0)
• Types of foreign installations	—	—	—
No. of LIS installations between August 2018–July 2019	2	100	16
Percentage of high-volume** sites installed/Low-volume*** sites installed	70%/30%	50%/50%	1%/99%
Percentage of sites where company has no other software installed	50%	0	0
Foreign countries where company actively markets LIS	none	—	Canada, Carribean, India
• Foreign countries in which LIS is installed	—	Canada, Lebanon, United Kingdom, Singapore	St. Maarten
Company provides list of client sites to potential customers on request	yes (complete list with no restrictions regarding its use)	yes (complete list with no restrictions regarding its use)	yes (partial list of comparable sites)
Clients restricted from sharing their experience with company or LIS	no	no	no
No. of employees in entire company	5	10,200	2,067 (total for parent company, CPSI)
Range in No. of user workstations in sites operating LIS	3–600 (average, 20)	—	6–500 (average, 100)
Central hardware or service type	Intel/Dell	HP 9000, HP Integrity, Sun Sparc, IBM p5 Series	HPE ProLiant DL560 server
Programming language(s)	Visual Basic, MUMPS, .Net	Visual Basic, Caché, C#, ASP .Net, JavaScript	Visual C++
Operating system(s)	Windows	Unix, Windows	Linux
Databases and tools	Caché	Chronicles Extended Relational Database Management System	SQL
System includes full transaction logging	yes	yes	yes
Languages (other than English) offered on LIS	—	Norwegian, French, German, Finnish, Dutch, Danish	none
Features/modules incorporated in product:			
• Chemistry/Hematology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Bar-coded collection labels	installed at client sites	installed at client sites	installed at client sites
• Microbiology/Public health microbiology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Blood bank donor/Blood bank transfusion	installed at client sites/avail. via contract with third party	available via contract with third party/available via contract with third party	installed at client sites/installed at client sites
• Surgical pathology/Cytology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Molecular pathology/Cytogenetics/Flow cytometry	installed at client sites/installed at client sites/ installed at client sites	installed at client sites/installed at client sites/ installed at client sites	avail. via contract with third party/avail. via contract with third party/avail. via contract with third party
• EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites
• EHR interface for order entry/EHR interface for results reporting	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• EHR interface for packaging results into PDF format	installed at client sites	installed at client sites	installed at client sites
• EHR interface for packaging results into CDA1 format/CDA2 format	installed at client sites/installed at client sites	available via contract with third party/available via contract with third party	installed at client sites/installed at client sites
• Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Management and statistical reporting	installed at client sites	installed at client sites	installed at client sites
• Connection to provider offices/Commercial lab functionality	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Compliance checking	installed at client sites	installed at client sites	installed at client sites
• Billing and accounts receivable	installed at client sites	installed at client sites	installed at client sites
• Materials management and inventory	available via contract with third party	available via contract with third party	installed at client sites
• Test partition	installed at client sites	installed at client sites	installed at client sites
• Remote faxing/Remote printing	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• HIPAA-standard transaction formats	installed at client sites	installed at client sites	installed at client sites
• Web-based remote inquiry of reports/Web access for order entry	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Specimen management and tracking	installed at client sites	installed at client sites	available via contract with third party
• Environmental health/Business analytics	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Reference lab interface for orders, results return, status return	installed at client sites	installed at client sites	installed at client sites
• Clinical analytics/Big Data	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/available via companion product
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using specified formats**** for:			
• Microbiology (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis and cases to regional cancer registry*****	yes	yes	yes
LIS bidirectionally interfaces to other vendors' lab systems	yes	yes	yes (to Dawning Technologies)
Lab automation systems or workcells to which LIS has a direct interface	none (planned for future)	none (available through third-party middleware)	Beckman Coulter, Siemens, Ortho, Thermo Scientific, Olympus, Roche Diagnostics, Abbott Diagnostics, others
LIS allows for third-party updates of tables and rules	no	no	yes (using Micromedex)
LIS allows for image capture, display, reporting	yes	yes	yes
LIS provides indexed field in each test definition for LOINC code	yes	yes	yes
Company provides LOINC dictionary for each new installation	yes	no	yes
LIS supports use of SNOMED CT for all cases	yes	yes	yes
LIS uses third-party middleware for LIS–instrument interfaces	combination of direct interfaces and middleware	yes (for all instrument interfaces)	yes (for all instrument interfaces)
Company provides LIS clients with positive patient ID software to identify patients and blood specimens collected at bedside	yes (integrated in LIS)	yes (Epic Rover; no additional fee)	yes (integrated in LIS)
• LIS interfaces to third-party positive patient ID software used at bedside	yes	no	yes
Source code/User group that meets on established schedule	escrow/no	yes/yes (via webinar, conference call, and in person)	escrow/yes (via webinar, conference call, and in person)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings	ad hoc query tools, user-defined interfaces, dictionary settings	ad hoc query tools, dictionary settings
Standard software maintenance fee covers periodic updates to LIS	yes	yes	yes
• Clients must install updates in specified timespans to avoid maintenance fee increase	yes	no	yes
• Fee for software modifications to comply with federal regulations and laws	standard (no charge)	standard (no charge)	standard (no charge)
LIS functionality available via ASP or cloud-based data center	no	available as a local server or an ASP or cloud-based product (client's option)	available as a local server or an ASP or cloud-based product (client's option)
Cost for smallest existing LIS install (includes hardware, software, install, training)	\$12,000 (annual maintenance fee, \$3,000)	—	\$50,000 (annual maintenance fee, \$625)
Cost for largest existing LIS install (includes hardware, software, install, training)	—	—	\$70,000 (annual maintenance fee, \$875)
Distinguishing product features (supplied by company)	• cost • performance • reliability	• seamless native data transfer from LIS to EMR without need for interfaces or translation tables • integrated PPID specimen collection with end-to-end specimen tracking from ordering to sample storage • customer-driven development philosophy; customers guide design, direction, and prioritization of development	• fully integrated EHR and ONC-certified HIT • company builds libraries and data dictionaries as a standard part of installation and conversion • on-site training and support for all end users
*any brand or model **generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day ***generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day ****HL7 2.5.1, LOINC, SNOMED, etc. *****using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable			†formerly CPSI System

Part 5 of 10	HEX Laboratory Systems Susan Bollinger sbollinger@hexlab.com Encinitas, CA 800-729-2085 www.hexlab.com	Ilex Medical Eran Ohayon erano@orsyx.com Petah Tikva, Israel +972 3 938 5537 www.illexmedical.com	LabWare Sarah Jones sjones@labware.com Wilmington, DE 302-658-8444 www.labware.com
See captodayonline.com/productguides for an interactive version of guide			
Name of laboratory information system	LAB/HEX	eL@b†	LabWare
First ever*/Most recent LIS installation (based on August 2019 survey deadline)	1981/May 2019 (last update: June 2019)	1990/April 2019 (last update: August 2019)	1999/July 2019 (last update: June 2019)
Total No. of contracts for sites operating LIS	161	65	172
No. of sales of LIS between August 2018–July 2019	1	1	13
Total No. of sites operating LIS (U.S. hospitals/U.S. independent labs/U.S. clinics or group practices/U.S. public health labs/other U.S. sites/foreign sites)	161 (10/88/41/2/9–veterinary, environmental, pharma/11)	65 (0/1/0/0/0/64)	318 (3/8/0/18/36–biobank, clinical research, veterinary/253)
• Types of foreign installations	—	hospitals, HMOs, national health organizations, blood banks, HIV centers, forensic, others	hospital, public health, clinics, biobank, clinical research, veterinary
No. of LIS installations between August 2018–July 2019	1	1	31
Percentage of high-volume** sites installed/Low-volume*** sites installed	52%/48%	U.S. site high volume	20%/80%
Percentage of sites where company has no other software installed	95%	100%	100%
Foreign countries where company actively markets LIS	worldwide	United Kingdom, Israel, South Africa, Lithuania, sub-Saharan Africa	—
• Foreign countries in which LIS is installed	Lebanon, Egypt	United Kingdom, Israel, South Africa, Lithuania, sub-Saharan Africa	U.K., India, Kenya, Portugal, Columbia, China, Switzerland, Spain, Belgium, Iraq, many others
Company provides list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (complete list with no restrictions regarding its use)	yes (complete list but prospective client must sign a nondisclosure agreement)
Clients restricted from sharing their experience with company or LIS	no	no	no
No. of employees in entire company	12	300	675
Range in No. of user workstations in sites operating LIS	3–64 (average, 24)	1–80 (average, 10)	5–600 (average, 10–20)
Central hardware or service type	Dell server with Intel processor	—	database server: Sun, Unix, Linux, Windows, others; application server: Windows 2008, 2012, 2019
Programming language(s)	Thoroughbred	C#, Angular TypeScript	Java, .Net, Smalltalk
Operating system(s)	Linux	Windows	Windows
Databases and tools	IDOL-IV	SQL server	Oracle, SQL server, PostgreSQL
System includes full transaction logging	yes	yes	yes
Languages (other than English) offered on LIS	Spanish	Hebrew, German, French, Italian, Spanish, others	German, French, Spanish, Swedish, many others
Features/modules incorporated in product:			
• Chemistry/Hematology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Bar-coded collection labels	installed at client sites	installed at client sites	installed at client sites
• Microbiology/Public health microbiology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Blood bank donor/Blood bank transfusion	available via contract with third party (both features)	installed at client sites/avail. via contract with third party	installed at client sites/under development
• Surgical pathology/Cytology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Molecular pathology/Cytogenetics/Flow cytometry	installed at client sites (all 3 features)	installed at client sites (all 3 features)	installed at client sites (all 3 features)
• EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites
• EHR interface for order entry/EHR interface for results reporting	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• EHR interface for packaging results into PDF format	installed at client sites	installed at client sites	installed at client sites
• EHR interface for packaging results into CDA1 format/CDA2 format	installed at client sites/installed at client sites	installed at client sites/installed at client sites	available but not installed/available but not installed
• Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Management and statistical reporting	installed at client sites	installed at client sites	installed at client sites
• Connection to provider offices/Commercial lab functionality	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Compliance checking	installed at client sites	installed at client sites	installed at client sites
• Billing and accounts receivable	installed at client sites	installed at client sites	installed at client sites
• Materials management and inventory	installed at client sites	installed at client sites	installed at client sites
• Test partition	installed at client sites	installed at client sites	installed at client sites
• Remote faxing/Remote printing	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• HIPAA-standard transaction formats	installed at client sites	installed at client sites	available but not installed
• Web-based remote inquiry of reports/Web access for order entry	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Specimen management and tracking	installed at client sites	installed at client sites	installed at client sites
• Environmental health/Business analytics	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Reference lab interface for orders, results return, status return	installed at client sites	installed at client sites	installed at client sites
• Clinical analytics/Big Data	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using specified formats**** for:			
• Microbiology (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis and cases to regional cancer registry*****	yes	yes	yes
LIS bidirectionally interfaces to other vendors' lab systems	yes (to Orchard, CompuGroup Medical, Cerner, Sunquest)	yes (to Abbott [Omnilab], others)	yes (to Meditech, Cerner, SCC Soft Computer, Epic, Thermo Scientific, Xybio, Pristima, others)
Lab automation systems or workcells to which LIS has a direct interface	Beckman Coulter, Siemens, Roche Diagnostics, Abbott Diagnostics	Beckman Coulter, Siemens, Sysmex, Thermo Scientific, Olympus, Roche, Abbott, Tecan, Bayer, others	Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Olympus America, Roche Diagnostics, Abbott, Tecan
LIS allows for third-party updates of tables and rules	yes (using CodeMap, CMS, others)	no	yes (using standard code tables, other options)
LIS allows for image capture, display, reporting	yes	yes	yes
LIS provides indexed field in each test definition for LOINC code	yes	yes	yes
Company provides LOINC dictionary for each new installation	no	yes	yes
LIS supports use of SNOMED CT for all cases	yes	for some types of cases (pathology report)	yes
LIS uses third-party middleware for LIS–instrument interfaces	no (interface directly)	combination of direct interfaces and middleware	no (interface directly)
Company provides LIS clients with positive patient ID software to identify patients and blood specimens collected at bedside	no	no	yes (integrated in LIS)
• LIS interfaces to third-party positive patient ID software used at bedside	yes	—	yes
Source code/User group that meets on established schedule	escrow/no	escrow/no	optional/yes (in person)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings, flags, others	user-defined interfaces, rules, custom format mapping, report generators, others	ad hoc query tools, user-defined interfaces, dictionary settings, rules engine, workflow-configuration tools, others
Standard software maintenance fee covers periodic updates to LIS	yes	yes	yes
• Clients must install updates in specified timespans to avoid maintenance fee increase	no	no	no
• Fee for software modifications to comply with federal regulations and laws	standard (no charge)	standard (no charge)	standard (no charge)
LIS functionality available via ASP or cloud-based data center	available as a local server or an ASP or cloud-based product (client's option); latter options based on \$5,000 start-up cost, monthly fees starting at \$500	no (planned for next version)	available as a local server or a cloud-based product (client's option); for the latter, one-time set up, monthly hosting fee, license fees, configuration service fees
Cost for smallest existing LIS install (includes hardware, software, install, training)	\$18,000 (annual maintenance fee, \$3,600)	\$50,000 (annual maintenance fee, \$5,000)	\$85,000 (annual maintenance fee, \$6,000)
Cost for largest existing LIS install (includes hardware, software, install, training)	\$75,000 (annual maintenance fee, \$12,000)	\$500,000 (annual maintenance fee, \$50,000)	\$5,000,000 (annual maintenance fee, \$450,000)
Distinguishing product features (supplied by company)	• reliable, flexible, stable LIS with reasonable pricing for all sizes of labs • quick implementation; excellent, fast 24/7 response support, including hardware and IT support • toxicology, molecular diagnostics, billing (standalone or integrated), EMR, reference lab interfaces, more	• one system to manage entire process, including ordering, remote sample collection, routing, QC, more • generic interfaces for quick connection of a new analyzer, host, or automation system • high performance and workloads scaled to lab size	• configurability empowers customers to quickly respond to changing technology, business needs • powerful lab workflow-management tools • inclusive user license provides access to fully integrated tools for all clinical laboratory disciplines and biobanking
*any brand or model **generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day ***generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day ****HL7 2.5.1, LOINC, SNOMED, etc. *****using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable		<i>†formerly marketed by Beckman Coulter as DataWizard</i>	

Part 6 of 10	LigoLab Information Systems Suren Avunjian suren@ligolab.com Glendale, CA 800-544-6522/818-230-1307 www.ligolab.com	Netlims Hagai Zisser hagai@netlims.com Ridgefield Park, NJ 201-894-5300 www.netlims.com	NovoPath Rick Callahan rcallahan@novopath.com Princeton, NJ 877-668-6123 www.novopath.com
See captodayonline.com/productguides for an interactive version of guide			
Name of laboratory information system	LigoLab AP/LIS 2019†	LabOS†	NovoPath Clinical Pathology Module
First ever*/Most recent LIS installation (based on August 2019 survey deadline)	2006/July 2019 (last update: July 2019)	1996/July 2019 (last update: August 2019)	1999/March 2018 (last update: June 2019)
Total No. of contracts for sites operating LIS	41 (49 licenses)	30	2
No. of sales of LIS between August 2018–July 2019	—	3	0
Total No. of sites operating LIS (U.S. hospitals/U.S. independent labs/U.S. clinics or group practices/U.S. public health labs/other U.S. sites/foreign sites)	49 (0/49/0/0/0/0)	156 (0/12/0/0/0/144)	2 (0/2/0/0/0/0)
• Types of foreign installations	—	hospitals, HMOs, commercial labs	—
No. of LIS installations between August 2018–July 2019	—	115	0
Percentage of high-volume** sites installed/Low-volume*** sites installed	75%/25%	60%/40%	50%/50%
Percentage of sites where company has no other software installed	—	100%	0
Foreign countries where company actively markets LIS	none	worldwide	worldwide
• Foreign countries in which LIS is installed	—	South Africa, Israel, India	none
Company provides list of client sites to potential customers on request	yes (complete list but prospective client must sign a nondisclosure agreement)	yes (partial list of comparable sites)	yes (partial list of comparable sites)
Clients restricted from sharing their experience with company or LIS	no	no	no
No. of employees in entire company	28	140	49
Range in No. of user workstations in sites operating LIS	15–325 (average, 53)	16–600 (average, 120)	21–100 (average, 60)
Central hardware or service type	ASP or client hosted	IBM, Dell, Hewlett-Packard, others	Windows server
Programming language(s)	Java	C++, JavaScript, React	Microsoft Visual Studio
Operating system(s)	Windows, Macintosh	Windows Server 2003 and higher, Linux	Windows
Databases and tools	Microsoft SQL	Microsoft SQL 2005 and higher, Oracle 10 and higher, MySQL 5.6 and higher	Microsoft SQL, Oracle
System includes full transaction logging	yes	yes	yes
Languages (other than English) offered on LIS	—	Hebrew, Arabic, Spanish, French, African languages	all romance/Latin languages supported by Windows; fields customizable to most languages†
Features/modules incorporated in product:			
• Chemistry/Hematology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Bar-coded collection labels	installed at client sites	installed at client sites	installed at client sites
• Microbiology/Public health microbiology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/available but not installed
• Blood bank donor/Blood bank transfusion	not available/not available	installed at client sites/installed at client sites	available via contract with third party (both features)
• Surgical pathology/Cytology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Molecular pathology/Cytogenetics/Flow cytometry	installed at client sites/installed at client sites/ installed at client sites	installed at client sites/installed at client sites/ installed at client sites	installed at client sites/installed at client sites/ installed at client sites
• EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites
• EHR interface for order entry/EHR interface for results reporting	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• EHR interface for packaging results into PDF format	installed at client sites	installed at client sites	installed at client sites
• EHR interface for packaging results into CDA1 format/CDA2 format	installed at client sites/installed at client sites	installed at client sites/installed at client sites	available via contract with third party (both features)
• Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Management and statistical reporting	installed at client sites	installed at client sites	installed at client sites
• Connection to provider offices/Commercial lab functionality	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Compliance checking	installed at client sites	installed at client sites	installed at client sites
• Billing and accounts receivable	installed at client sites	installed at client sites	installed at client sites
• Materials management and inventory	installed at client sites	available but not installed	available via contract with third party
• Test partition	installed at client sites	installed at client sites	installed at client sites
• Remote faxing/Remote printing	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• HIPAA-standard transaction formats	installed at client sites	installed at client sites	installed at client sites
• Web-based remote inquiry of reports/Web access for order entry	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Specimen management and tracking	installed at client sites	installed at client sites	installed at client sites
• Environmental health/Business analytics	not available/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Reference lab interface for orders, results return, status return	installed at client sites	installed at client sites	installed at client sites
• Clinical analytics/Big Data	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using specified formats**** for:			
• Microbiology (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis and cases to regional cancer registry*****	yes	yes	yes
LIS bidirectionally interfaces to other vendors' lab systems	yes (to Sunquest, Cerner)	yes (to Meditech, Cerner)	yes
Lab automation systems or workcells to which LIS has a direct interface	Beckman Coulter, Siemens, Ortho, Thermo Scientific, Olympus, Roche Diagnostics, Abbott Diagnostics, others	Beckman Coulter, Siemens, Olympus America, Roche Diagnostics, Abbott Diagnostics, Bayer, Sysmex	Beckman Coulter, Siemens, Ortho, Thermo Scientific, Olympus, Roche, Abbott, Sysmex, Bio-Rad
LIS allows for third-party updates of tables and rules	yes (using API functionality)	yes (using LabOS' open API)	no
LIS allows for image capture, display, reporting	yes	yes	yes
LIS provides indexed field in each test definition for LOINC code	yes	yes	yes
Company provides LOINC dictionary for each new installation	yes	no	no
LIS supports use of SNOMED CT for all cases	yes	yes	yes
LIS uses third-party middleware for LIS–instrument interfaces	no (interface directly)	combination of direct interfaces and middleware	yes (for all instrument interfaces)
Company provides LIS clients with positive patient ID software to identify patients and blood specimens collected at bedside	yes (integrated in LIS)	yes (integrated in LIS)	no
• LIS interfaces to third-party positive patient ID software used at bedside	yes	yes	yes
Source code/User group that meets on established schedule	escrow/yes (via webinar, conference call, and in person)	escrow/yes (via webinar)	escrow/yes (via webinar)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings	ad hoc query tools, user-defined interfaces, dictionary settings	ad hoc query tools, dictionary settings, report and application formatting, others
Standard software maintenance fee covers periodic updates to LIS	yes	yes	yes (covers patches and minor updates)
• Clients must install updates in specified timespans to avoid maintenance fee increase	no	no	no
• Fee for software modifications to comply with federal regulations and laws	standard (no charge)	—	standard (no charge)
LIS functionality available via ASP or cloud-based data center	available as a local server or an ASP or cloud-based product (client's option)	available as a local server or an ASP or cloud-based product (client's option); latter options subscription based, dependent on volume and module type	available as a local server or an ASP or cloud-based product (client's option)
Cost for smallest existing LIS install (includes hardware, software, install, training)	—	\$125,000 (annual maintenance fee, \$25,000)	—
Cost for largest existing LIS install (includes hardware, software, install, training)	—	\$6,000,000 (annual maintenance fee, \$1,200,000)	—
Distinguishing product features (supplied by company)	• all-in-one AP, CP, molecular LIS and RCM platform designed to help laboratories grow and thrive • aligned pricing model with no upfront licensing fees • built to provide actionable insights into clients' financial, administrative, and technical operations	• end-to-end fully integrated solution; no need for middleware or complicated integrations • technology and architecture eliminate need for maintenance downtime or data archiving/purging • full support for POC tests; mobile support and Web and cloud options	• company is ISO9001:2015 certified • company offers specimen tracking, billing, interfacing, and business intelligence solutions • company offers solutions for anatomic pathology, microbiology, and precision medicine
*any brand or model **generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day ***generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day ****HL7 2.5.1, LOINC, SNOMED, etc. *****using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable	†formerly <i>LigoLab AP/LIS 4</i>	†formerly <i>AutoLims</i>	† <i>language support built on top of operating system in use</i>

Part 7 of 10	Orchard Software Corp. Kerry Foster kfooster@orchardsoft.com Carmel, IN 800-856-1948 www.orchardsoft.com	Orchard Software Corp. Kerry Foster kfooster@orchardsoft.com Carmel, IN 800-856-1948 www.orchardsoft.com	Pathagility Mark McCuin mark@pathagility.com Little Rock, AR 888-222-2792 www.pathagility.com
See captodayonline.com/productguides for an interactive version of guide			
Name of laboratory information system	Orchard Harvest LIS	Orchard Sequoia	WorkPath
First ever*/Most recent LIS installation (based on August 2019 survey deadline)	1993/August 2019 (last update: August 2019)	1993/June 2019 (last update: June 2019)	2008/August 2019 (last update: August 2019)
Total No. of contracts for sites operating LIS	—	2	—
No. of sales of LIS between August 2018–July 2019	98	3	5
Total No. of sites operating LIS (U.S. hospitals/U.S. independent labs/U.S. clinics or group practices/U.S. public health labs/other U.S. sites/foreign sites)	1,574 (232/196/969/35/138—correctional facilities, nursing homes, university student health, others/4)	9 (0/0/9/0/0/0)	35 (0/35/0/0/0/0)
• Types of foreign installations	physician office lab, reference lab, educational program	—	—
No. of LIS installations between August 2018–July 2019	98	9	5
Percentage of high-volume** sites installed/Low-volume*** sites installed	40%/60%	100%/0	20%/80%
Percentage of sites where company has no other software installed	unknown	100%	20%
Foreign countries where company actively markets LIS	none	none	none
• Foreign countries in which LIS is installed	—	—	—
Company provides list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (partial list of comparable sites)	yes (partial list of comparable sites)
Clients restricted from sharing their experience with company or LIS	no	no	no
No. of employees in entire company	277	277	—
Range in No. of user workstations in sites operating LIS	1–500 (average, 30)	15 in each site	2–500 (average, 50)
Central hardware or service type	HP Business Class in a client/server environment	HP Business Class	Amazon Web Services
Programming language(s)	4th Dimension with portions in C, C++, HTML; some modules in Java	SQL, Java	Python, Java
Operating system(s)	Windows 7+, Windows Server 2008+	Windows	agnostic
Databases and tools	4D	Microsoft SQL	agnostic
System includes full transaction logging	yes	yes	yes
Languages (other than English) offered on LIS	none	none	—
Features/modules incorporated in product:			
• Chemistry/Hematology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Bar-coded collection labels	installed at client sites	installed at client sites	installed at client sites
• Microbiology/Public health microbiology	installed at client sites/installed at client sites	in testing/in testing	installed at client sites/available but not installed
• Blood bank donor/Blood bank transfusion	available via contract with third party (both features)	available via contract with third party (both features)	available but not installed/available but not installed
• Surgical pathology/Cytology	installed at client sites/installed at client sites	in development/in development	installed at client sites/installed at client sites
• Molecular pathology/Cytogenetics/Flow cytometry	installed at client sites/installed at client sites/ installed at client sites	in development/in testing/in testing	installed at client sites/installed at client sites/ installed at client sites
• EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites
• EHR interface for order entry/EHR interface for results reporting	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• EHR interface for packaging results into PDF format	installed at client sites	installed at client sites	installed at client sites
• EHR interface for packaging results into CDA1 format/CDA2 format	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Management and statistical reporting	installed at client sites	installed at client sites	installed at client sites
• Connection to provider offices/Commercial lab functionality	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Compliance checking	installed at client sites	installed at client sites	installed at client sites
• Billing and accounts receivable	available via contract with third party	available via contract with third party	available but not installed
• Materials management and inventory	installed at client sites	installed at client sites	available but not installed
• Test partition	installed at client sites	installed at client sites	installed at client sites
• Remote faxing/Remote printing	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• HIPAA-standard transaction formats	installed at client sites	installed at client sites	installed at client sites
• Web-based remote inquiry of reports/Web access for order entry	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Specimen management and tracking	installed at client sites	installed at client sites	installed at client sites
• Environmental health/Business analytics	installed at client sites/installed at client sites	available but not installed/installed at client sites	available but not installed/installed at client sites
• Reference lab interface for orders, results return, status return	installed at client sites	installed at client sites	installed at client sites
• Clinical analytics/Big Data	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using specified formats**** for:			
• Microbiology (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis and cases to regional cancer registry*****	yes	yes	yes
LIS bidirectionally interfaces to other vendors' lab systems	yes (to CompuGroup, Epic, Fletcher Flora, Meditech, Schuyler House, Cerner, CPSI, Sunquest, SCC, Psyche, LabSoft, McKesson, CSS, Siemens, many others)	yes (to CompuGroup, Fletcher Flora, Meditech, Schuyler House, Cerner, CPSI, Sunquest, SCC, Psyche, LabSoft, McKesson, CSS, Siemens, many others)	yes (for genetic testing)
Lab automation systems or workcells to which LIS has a direct interface	Beckman Coulter, Siemens, Ortho, Thermo Scientific, Olympus, Roche, Abbott, Sarstedt, Sysmex, others	available (but not yet in use) to Beckman Coulter, Siemens, Ortho, Sysmex, Roche, Abbott, Tecan, Sarstedt, Thermo Scientific, others	none (planned for future)
LIS allows for third-party updates of tables and rules	no	no	no
LIS allows for image capture, display, reporting	yes	yes	yes
LIS provides indexed field in each test definition for LOINC code	yes	yes	yes
Company provides LOINC dictionary for each new installation	no	no	no
LIS supports use of SNOMED CT for all cases	yes	yes	yes
LIS uses third-party middleware for LIS–instrument interfaces	no (interface directly)	combination of direct interfaces and middleware	combination of direct interfaces and middleware
Company provides LIS clients with positive patient ID software to identify patients and blood specimens collected at bedside	yes (Orchard Collect; additional fee)	yes (Orchard Collect; additional fee)	no
• LIS interfaces to third-party positive patient ID software used at bedside	—	—	yes
Source code/User group that meets on established schedule	escrow/yes (in person)	escrow/yes (in person)	no/yes (via conference call)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, dictionary settings, user-defined security, rules, workflow, templates, others	ad hoc query tools, dictionary settings, user-defined interfaces, rules, workflow, templates, others	ad hoc query tools, case type property tools
Standard software maintenance fee covers periodic updates to LIS	yes	yes	yes
• Clients must install updates in specified timespans to avoid maintenance fee increase	no	no	—
• Fee for software modifications to comply with federal regulations and laws	standard (no charge)	standard (no charge)	standard (no charge)
LIS functionality available via ASP or cloud-based data center	available as a local server or an ASP product (client's option); for the latter, various financing and deployment options, such as a subscription model or hosted deployment	available as a local server or a cloud-based product; for the latter, various financing and deployment options, including installation costs, subscription model	available as a cloud-based product (only option); implementation fee and monthly/annual subscription fee based on volumes
Cost for smallest existing LIS install (includes hardware, software, install, training)	\$35,000 (annual maintenance fee, \$4,000)	\$250,000 (annual maintenance fee, \$35,000)	—
Cost for largest existing LIS install (includes hardware, software, install, training)	\$1,400,000 (annual maintenance fee, \$168,000)	\$4,200,000 (annual maintenance fee, \$500,000)	—
Distinguishing product features (supplied by company)	• expert interfacing and integration capabilities with instruments, EMR and host systems, more	• expert interfacing and integration capabilities with instruments, EMR and host systems, more	• supports any testing type—software-as-a-service; fast implementations; low total cost of ownership
*any brand or model			
**generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day			• full menu of integrated connectivity and distribution options for laboratories and other providers
***generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day			
****HL7 2.5.1, LOINC, SNOMED, etc.			• dynamic system for reference lab relationships
*****using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed.			
Note: a dash as an answer means company did not respond or question is not applicable			

Part 8 of 10	Quality Software Systems Jeff Caspari jcaspari@labhealth.com Spring Valley, NY 845-352-4313 www.labhealth.com	SCC Soft Computer Ellie Vahman ellie@softcomputer.com Clearwater, FL 800-763-8352 www.softcomputer.com	Schuyler House Janet Chennault jlc@schuylerhouse.com Valencia, CA 800-706-0266 www.schuylab.com
See captodayonline.com/productguides for an interactive version of guide			
Name of laboratory information system	LabHealth	SoftLab	SchuyLab
First ever*/Most recent LIS installation (based on August 2019 survey deadline)	1984/2019 (last update: 2019)	1985/August 2019 (last update: August 2019)	1994/August 2019 (last update: July 2019)
Total No. of contracts for sites operating LIS	98	301	1,090
No. of sales of LIS between August 2018–July 2019	8	8	24
Total No. of sites operating LIS (U.S. hospitals/U.S. independent labs/U.S. clinics or group practices/U.S. public health labs/other U.S. sites/foreign sites)	98 (0/98/0/0/0/0)	1,171 (717/44/118/3/0/289)	1,090 (159/309/504/0/58–schools, vendors, veterinary/60)
• Types of foreign installations	—	university hospitals, public health systems, genetics labs, commercial labs, blood bank labs, others	hospitals, physician office labs, reference labs
No. of LIS installations between August 2018–July 2019	8	9	24
Percentage of high-volume** sites installed/Low-volume*** sites installed	60%/40%	65%/35%	40%/60%
Percentage of sites where company has no other software installed	30%	—	100%
Foreign countries where company actively markets LIS	none	worldwide	Guam, Caribbean, Canada, Africa, Pacific Rim, Southeast Asia
• Foreign countries in which LIS is installed	—	Belgium, Brazil, Canada, France, China, Jamaica, Malaysia, Singapore, Switzerland, U.K., Israel	Guam, Caribbean, Canada, Africa, Pacific Rim, Southeast Asia
Company provides list of client sites to potential customers on request	no (information is confidential)	yes (partial list of comparable sites)	yes (complete list with no restrictions regarding its use)
Clients restricted from sharing their experience with company or LIS	no	no	no
No. of employees in entire company	15	2,000	28
Range in No. of user workstations in sites operating LIS	4–95 (average, 20)	10–4,000+ (average, 80)	1–80 (average, 3)
Central hardware or service type	Dell servers	IBM Power Series (AIX/Unix), Intel x64 (Linux), Oracle Cloud, Amazon Web Services (SaaS or on premises)	any PC (Dell recommended)
Programming language(s)	Visual Basic .Net	C, C++, C#, Java	C
Operating system(s)	Windows	servers: IBM AIX, Linux; workstations: Microsoft Windows, Web based	Windows 7, 8, 10, Vista
Databases and tools	SQL	Oracle, Oracle WebLogic, OAS, Tomcat, ServiceMix, Golden Gate	FairCom C-Tree, Pervasive Btrieve
System includes full transaction logging	yes	yes	no
Languages (other than English) offered on LIS	—	French, Portuguese, Hebrew	ABN forms available in Spanish
Features/modules incorporated in product:			
• Chemistry/Hematology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Bar-coded collection labels	installed at client sites	installed at client sites	installed at client sites
• Microbiology/Public health microbiology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/not available
• Blood bank donor/Blood bank transfusion	available via contract with third party (both features)	installed at client sites/installed at client sites	not available in U.S./not available in U.S.
• Surgical pathology/Cytology	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Molecular pathology/Cytogenetics/Flow cytometry	installed at client sites/installed at client sites	installed at client sites/installed at client sites	—/in development/installed at client sites
• EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites
• EHR interface for order entry/EHR interface for results reporting	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• EHR interface for packaging results into PDF format	installed at client sites	installed at client sites	installed at client sites
• EHR interface for packaging results into CDA1 format/CDA2 format	installed at client sites/installed at client sites	—	installed at client sites/installed at client sites
• Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites	available but not installed/available but not installed
• Management and statistical reporting	installed at client sites	installed at client sites	installed at client sites
• Connection to provider offices/Commercial lab functionality	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Compliance checking	installed at client sites	installed at client sites	installed at client sites
• Billing and accounts receivable	installed at client sites	installed at client sites	installed at client sites
• Materials management and inventory	available but not installed	installed at client sites	in development
• Test partition	installed at client sites	installed at client sites	in development
• Remote faxing/Remote printing	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• HIPAA-standard transaction formats	installed at client sites	installed at client sites	installed at client sites
• Web-based remote inquiry of reports/Web access for order entry	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Specimen management and tracking	installed at client sites	installed at client sites	in development
• Environmental health/Business analytics	in development/installed at client sites	installed at client sites/installed at client sites	not available/in development
• Reference lab interface for orders, results return, status return	installed at client sites	installed at client sites	installed at client sites
• Clinical analytics/Big Data	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/in development
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using specified formats**** for:			
• Microbiology (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis and cases to regional cancer registry*****	no	yes	no
LIS bidirectionally interfaces to other vendors' lab systems	yes	yes (to Cerner, Epic, Meditech, Sunquest)	no
Lab automation systems or workcells to which LIS has a direct interface	Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Thermo Scientific, Olympus America, Roche Diagnostics, Abbott Diagnostics, Sysmex, Bayer	Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Thermo Scientific, Olympus America, Roche Diagnostics, Abbott Diagnostics, Tecan, Bayer, Sysmex, others	Beckman Coulter, Siemens, Sysmex, Thermo Scientific, Olympus America, Roche Diagnostics, Abbott Diagnostics, Bayer
LIS allows for third-party updates of tables and rules	no	yes (using 3M/Info X, ICD-10 codes, others)	yes (using CodeMap)
LIS allows for image capture, display, reporting	yes	yes	yes
LIS provides indexed field in each test definition for LOINC code	yes	yes	yes
Company provides LOINC dictionary for each new installation	yes	yes	no
LIS supports use of SNOMED CT for all cases	yes	yes	yes
LIS uses third-party middleware for LIS–instrument interfaces	no (interface directly)	no (interface directly)	combination of direct interfaces and middleware
Company provides LIS clients with positive patient ID software to identify patients and blood specimens collected at bedside	no	yes (integrated in LIS)	no
• LIS interfaces to third-party positive patient ID software used at bedside	yes	yes	—
Source code/User group that meets on established schedule	no/no	escrow/yes (in person)	escrow/yes (via webinar and conference call)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings	ad hoc query tools, dictionary settings, rules engine, workflow engine, business intelligence tools, others	user-defined interfaces
Standard software maintenance fee covers periodic updates to LIS	yes	yes	yes
• Clients must install updates in specified timespans to avoid maintenance fee increase	no	no	no
• Fee for software modifications to comply with federal regulations and laws	optional (extra cost)	standard (no charge)	standard (no charge)
LIS functionality available via ASP or cloud-based data center	available as a local server or an ASP or cloud-based product (client's option)	available as a local server or an ASP or cloud-based product (client's option); for SaaS, user-based licensing	no
Cost for smallest existing LIS install (includes hardware, software, install, training)	\$20,000 (annual maintenance fee, \$6,000)	—	free (annual maintenance fee, \$120)
Cost for largest existing LIS install (includes hardware, software, install, training)	\$95,000 (annual maintenance fee, \$30,000)	—	\$265,000 (annual maintenance fee, \$37,000)
Distinguishing product features (supplied by company)	• true browser-based LIS with comprehensive lab and billing modules	• integrated single-platform LIS/LIMS; single database and patient record; full specimen chain of custody	• easy-to-use, comprehensive LIS, including electronic billing; integrates lab results with other systems
*any brand or model			
**generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day	• complete toxicology and pain-management module totally integrated	• integrated content reporting (AP, genetics) across all disciplines; automated compilation of interpretations	• easy to add new instrument interface, workstations, or other optional modules so system can grow with lab
***generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day	• company customizes client Web portal, LIS, billing, and sales portal for each customer	• multi-site, multi-time zone with master patient index; definable workflow protocols and rules	• free software updates for all current users on support
****HL7 2.5.1, LOINC, SNOMED, etc.			
*****using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed.			
Note: a dash as an answer means company did not respond or question is not applicable			

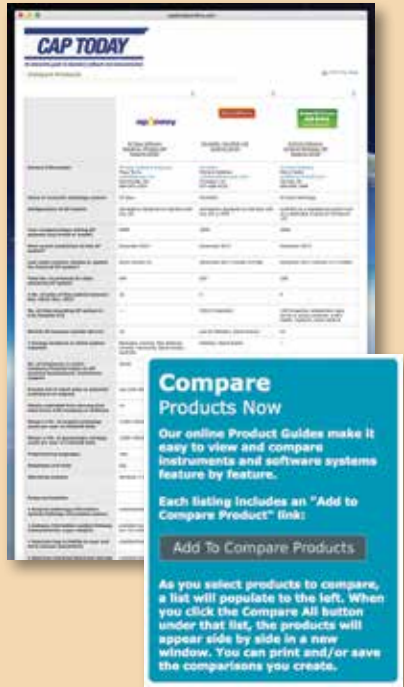
Part 9 of 10	Seacoast Laboratory Data Systems Lisa M. Turgeon info@sldsi.com Portsmouth, NH 603-431-4114 ext. 6220 www.sldsi.com	SimpleLIMS Kannan info@simplelims.com San Diego, CA 619-354-1009 www.simplelims.com	Sunquest Information Systems S. Clohessy stephanie.clohessy@sunquestinfo.com Tucson, AZ 520-570-2000 www.sunquestinfo.com
See captodayonline.com/productguides for an interactive version of guide			
Name of laboratory information system	SurroundLab Plus	SimpleLIMS	Sunquest Laboratory
First ever*/Most recent LIS installation (based on August 2019 survey deadline)	2000/August 2018 (last update: October 2018)	2012/August 2019 (last update: August 2019)	1979/— (last update: March 2019)
Total No. of contracts for sites operating LIS	—	20	—
No. of sales of LIS between August 2018–July 2019	—	3	19
Total No. of sites operating LIS (U.S. hospitals/U.S. independent labs/U.S. clinics or group practices/U.S. public health labs/other U.S. sites/foreign sites)	72 (0/72/0/0/0/0)	20 (0/18/0/0/0/2)	—
• Types of foreign installations	—	research labs	—
No. of LIS installations between August 2018–July 2019	1	3	—
Percentage of high-volume** sites installed/Low-volume*** sites installed	75%/25%	40%/60%	70%/30%
Percentage of sites where company has no other software installed	4%	—	70%
Foreign countries where company actively markets LIS	none	India, Netherlands, China	Canada, Australia, New Zealand
• Foreign countries in which LIS is installed	—	India, Netherlands, China	Canada, U.K., Ireland, Denmark, Middle East, Australia
Company provides list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (complete list but prospective client must sign a nondisclosure agreement)	yes (partial list of comparable sites)
Clients restricted from sharing their experience with company or LIS	no	no	no
No. of employees in entire company	25	18	—
Range in No. of user workstations in sites operating LIS	10–250 (average, 75)	3–1,600 (average, 50)	4–500 (average, 300)
Central hardware or service type	physical or virtual servers or cloud based	cloud, ASP	Hewlett-Packard, IBM, virtual servers
Programming language(s)	M-Caché	JavaScript, Python, PHP	Caché, Caché Script, Standard C/C++, Visual Basic, Visual C++, Active X, HTML with dynamic HTML content
Operating system(s)	Linux, Windows	browser-based client, Linux servers	AIX, HP-UX, OpenVMS, Linux, Windows
Databases and tools	GT.M, KB_SQL	MySQL	InterSystems Caché
System includes full transaction logging	yes	yes	yes
Languages (other than English) offered on LIS	none	—	—
Features/modules incorporated in product:			
• Chemistry/Hematology	installed at client sites/installed at client sites	installed at client sites/—	installed at client sites/installed at client sites
• Bar-coded collection labels	installed at client sites	installed at client sites	installed at client sites
• Microbiology/Public health microbiology	installed at client sites/installed at client sites	installed at client sites/—	installed at client sites/installed at client sites
• Blood bank donor/Blood bank transfusion	not available/not available	—	installed at client sites/installed at client sites
• Surgical pathology/Cytology	not available/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Molecular pathology/Cytogenetics/Flow cytometry	not available/available but not installed/available but not installed	installed at client sites/installed at client sites/ installed at client sites	installed at client sites/installed at client sites/ installed at client sites
• EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites	installed at client sites
• EHR interface for order entry/EHR interface for results reporting	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• EHR interface for packaging results into PDF format	installed at client sites	installed at client sites	installed at client sites
• EHR interface for packaging results into CDA1 format/CDA2 format	available but not installed/available but not installed	installed at client sites/available but not installed	installed at client sites/installed at client sites
• Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Management and statistical reporting	installed at client sites	installed at client sites	installed at client sites
• Connection to provider offices/Commercial lab functionality	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Compliance checking	installed at client sites	installed at client sites	installed at client sites
• Billing and accounts receivable	available via SurroundLab AR	installed at client sites	installed at client sites
• Materials management and inventory	not available	installed at client sites	installed at client sites
• Test partition	installed at client sites	installed at client sites	installed at client sites
• Remote faxing/Remote printing	installed at client sites/installed at client sites	—/installed at client sites	installed at client sites/installed at client sites
• HIPAA-standard transaction formats	installed at client sites	installed at client sites	installed at client sites
• Web-based remote inquiry of reports/Web access for order entry	installed at client sites/installed at client sites	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Specimen management and tracking	installed at client sites	installed at client sites	installed at client sites
• Environmental health/Business analytics	not available/installed at client sites	—/installed at client sites	installed at client sites/installed at client sites
• Reference lab interface for orders, results return, status return	installed at client sites	installed at client sites	installed at client sites
• Clinical analytics/Big Data	installed at client sites/installed at client sites	installed at client sites/installed at client sites	avail. via Sunquest Analytics/installed at client sites
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using specified formats**** for:			
• Microbiology (culture and sensitivity)	yes	yes	yes
• Other reportable diseases (blood lead, immunology, etc.)	yes	yes	yes
• Tumor diagnosis and cases to regional cancer registry*****	no	yes	yes
LIS bidirectionally interfaces to other vendors' lab systems	yes (to Psyche Systems, Misys, Sunquest, CompuGroup Medical, Orchard, others)	yes	yes (to SCC Soft Computer, Epic, Cerner, others)
Lab automation systems or workcells to which LIS has a direct interface	Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Sysmex, Olympus America, Roche Diagnostics, Abbott Diagnostics, Bayer, Sarstedt	Beckman Coulter, Siemens, Sysmex, Thermo Scientific, Olympus America, Roche Diagnostics, Abbott Diagnostics, Tecan	Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Sysmex, Olympus America, Roche, Abbott, others
LIS allows for third-party updates of tables and rules	yes (using LOINC, CPT, ICD-10, SNOMED)	—	yes (using 3M, CAP, AMA)
LIS allows for image capture, display, reporting	yes	yes	yes
LIS provides indexed field in each test definition for LOINC code	yes	yes	yes
Company provides LOINC dictionary for each new installation	no	yes	yes
LIS supports use of SNOMED CT for all cases	yes	yes	yes
LIS uses third-party middleware for LIS–instrument interfaces	combination of direct interfaces and middleware	no (interface directly)	combination of direct interfaces and middleware
Company provides LIS clients with positive patient ID software to identify patients and blood specimens collected at bedside	no	yes (integrated in LIS)	yes (Sunquest Collect [optional module]; additional fee)
• LIS interfaces to third-party positive patient ID software used at bedside	yes	yes	yes
Source code/User group that meets on established schedule	no/no	escrow/yes (in person and via webinar)	escrow/yes (via webinar, conference call, and in person)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings	dictionary settings	ad hoc query tools, user-defined interfaces, dictionary settings
Standard software maintenance fee covers periodic updates to LIS	yes (annual base code updates)	yes	yes
• Clients must install updates in specified timespans to avoid maintenance fee increase	no	no	no
• Fee for software modifications to comply with federal regulations and laws	optional (extra cost)	standard (no charge)	standard (no charge)
LIS functionality available via ASP or cloud-based data center	available as a local server or an ASP or cloud-based product (client's option); latter options based on number of interfaces and user licenses	yes (only option); \$10,000 per month to \$50,000 per month	available as a local server or an ASP or cloud-based product (client's option)
Cost for smallest existing LIS install (includes hardware, software, install, training)	—	—	—
Cost for largest existing LIS install (includes hardware, software, install, training)	—	—	—
Distinguishing product features (supplied by company)	• commercial lab centric; scalable; fully customizable • optional modules for paperless microbiology, quality control, cytology/Pap processing, toxicology, more • complete product suite includes AR software and Web-based client portal for reports/remote ordering, including standing orders	• 100% Web based—no server installation fees or set-up fees • includes services of software developers and designers • largest systems include on-site dedicated LIS administrator	• multi-lab test routing/sharing for medium to large expanding health systems and independent labs • integrated AP and molecular/genetics solutions, EHR integration, and comprehensive outreach • multi-disciplinary lab workflow and reporting, including precision medicine and digital pathology
*any brand or model **generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day ***generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day ****HL7 2.5.1, LOINC, SNOMED, etc. *****using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable			

Part 10 of 10	Technidata Frédéric Dallaire frederic.dallaire@technidata-web.com Montreal, QC, Canada 514-270-7777 www.technidata-web.com	XIFIN Conor Ward cward@xifin.com San Diego, CA 858-436-2995 www.xifin.com
See captodayonline.com/productguides for an interactive version of guide		
Name of laboratory information system	^{TD} NexLabs [†]	Xifin LIS 6 [†]
First ever*/Most recent LIS installation (based on August 2019 survey deadline)	1973/— (last update: August 2019)	2004/July 2019 (last update: August 2019)
Total No. of contracts for sites operating LIS	575	59
No. of sales of LIS between August 2018–July 2019	1	10
Total No. of sites operating LIS (U.S. hospitals/U.S. independent labs/U.S. clinics or group practices/U.S. public health labs/other U.S. sites/foreign sites)	774 (5/3/0/0/1—research center/765)	59 (0/34/22/0/0/3)
• Types of foreign installations	clinical labs	independent labs
No. of LIS installations between August 2018–July 2019	—	6
Percentage of high-volume** sites installed/Low-volume*** sites installed	90%/10%	45%/55%
Percentage of sites where company has no other software installed	25%	80%
Foreign countries where company actively markets LIS	Thailand, Switzerland, Kuwait, Iceland, many others	none
• Foreign countries in which LIS is installed	Netherlands, Italy, Spain, Germany, many others	China, Netherlands, United Kingdom
Company provides list of client sites to potential customers on request	yes (partial list of comparable sites)	yes (partial list of comparable sites)
Clients restricted from sharing their experience with company or LIS	no	no
No. of employees in entire company	174	310
Range in No. of user workstations in sites operating LIS	10–500+ (average, 40)	15–184 (average, 81)
Central hardware or service type	Windows, Linux, Unix	software-as-a-service (hardware independent)
Programming language(s)	C++, .Net, C#, Java	C#, .Net
Operating system(s)	Windows, Linux, Unix	Windows
Databases and tools	SQL server, Oracle	SQL
System includes full transaction logging	yes	yes
Languages (other than English) offered on LIS	Spanish, French, Italian, Korean, Chinese, many others	Chinese
Features/modules incorporated in product:		
• Chemistry/Hematology	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Bar-coded collection labels	installed at client sites	installed at client sites
• Microbiology/Public health microbiology	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Blood bank donor/Blood bank transfusion	not avail./avail. via ^{TD} BloodBank (Europe and Asia)	available via contract with third party (both features)
• Surgical pathology/Cytology	available via ^{TD} HistoCyto/available via ^{TD} HistoCyto	installed at client sites/installed at client sites
• Molecular pathology/Cytogenetics/Flow cytometry	avail. via ^{TD} Genet/avail. via ^{TD} Genet/avail. via ^{TD} HistoCyto	installed at client sites (all 3 features)
• EHR interface for admission/discharge/transfer (ADT)	installed at client sites	installed at client sites
• EHR interface for order entry/EHR interface for results reporting	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• EHR interface for packaging results into PDF format	installed at client sites	installed at client sites
• EHR interface for packaging results into CDA1 format/CDA2 format	available via contract with third party (both features)	installed at client sites/installed at client sites
• Ad hoc reporting/Rules-based system	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Management and statistical reporting	installed at client sites	installed at client sites
• Connection to provider offices/Commercial lab functionality	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Compliance checking	installed at client sites	installed at client sites
• Billing and accounts receivable	installed at client sites	installed at client sites
• Materials management and inventory	not available	installed at client sites
• Test partition	installed at client sites	installed at client sites
• Remote faxing/Remote printing	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• HIPAA-standard transaction formats	installed at client sites	installed at client sites
• Web-based remote inquiry of reports/Web access for order entry	installed at client sites/installed at client sites	installed at client sites/installed at client sites
• Specimen management and tracking	installed at client sites	installed at client sites
• Environmental health/Business analytics	not available/installed at client sites	installed at client sites/installed at client sites
• Reference lab interface for orders, results return, status return	installed at client sites	installed at client sites
• Clinical analytics/Big Data	installed at client sites/avail. via contract with third party	installed at client sites/installed at client sites
LIS can report lab data that is focus of meaningful use guidelines to public health agencies via automated electronic transmission using specified formats**** for:		
• Microbiology (culture and sensitivity)	yes	yes
• Other reportable diseases (blood lead, immunology, etc.)	yes	yes
• Tumor diagnosis and cases to regional cancer registry*****	yes	yes
LIS bidirectionally interfaces to other vendors' lab systems	yes (to Sunquest, Agfa, others)	yes (to Cerner, Sunquest, LabVantage, others)
Lab automation systems or workcells to which LIS has a direct interface	Beckman Coulter, Siemens, Ortho Clinical Diagnostics, Sysmex, Thermo Scientific, Olympus America, Roche, Abbott, Tecan, Bayer, Sarstedt, BioMérieux	Sysmex, Tecan
LIS allows for third-party updates of tables and rules	no	yes (API allows for updates of tables and rules from almost any source)
LIS allows for image capture, display, reporting	yes	yes
LIS provides indexed field in each test definition for LOINC code	yes	yes
Company provides LOINC dictionary for each new installation	no	yes
LIS supports use of SNOMED CT for all cases	for some types of cases	yes
LIS uses third-party middleware for LIS–instrument interfaces	combination of direct interfaces and middleware	combination of direct interfaces and middleware
Company provides LIS clients with positive patient ID software to identify patients and blood specimens collected at bedside	yes	no
• LIS interfaces to third-party positive patient ID software used at bedside	yes	yes
Source code/User group that meets on established schedule	escrow/yes (in person and via webinar)	escrow/yes (via webinar)
Methods by which users can tailor LIS in their own setting	ad hoc query tools, user-defined interfaces, dictionary settings, table settings	ad hoc query tools, user-defined interfaces, dictionary settings, workflow data-entry screens, mnemonics, others
Standard software maintenance fee covers periodic updates to LIS	yes (updates for priority 1 bugs or related fixes and major version updates)	yes
• Clients must install updates in specified timespans to avoid maintenance fee increase	no	yes
• Fee for software modifications to comply with federal regulations and laws	standard (no charge)	standard (no charge)
LIS functionality available via ASP or cloud-based data center	available as a local server or an ASP or cloud-based product (client's option); for latter options, start-up and installation costs, usage fee, CPU, disk space costs	available as a cloud-based offering (only option);
Cost for smallest existing LIS install (includes hardware, software, install, training)	\$150,000 (annual maintenance fee, \$15,000)	\$20,000–\$150,000 install fee (based on No. of modules);
Cost for largest existing LIS install (includes hardware, software, install, training)	\$3,500,000 (annual maintenance fee, \$700,000)	\$350 per named user, per month subscription fee
Distinguishing product features (supplied by company)	• business intelligence dashboard—real-time information available at user's fingertips with no need to pull reports • alerts via email or SMS allow quick response to critical results and significant infections • microbiology module—real paperless bacteriology for a significant gain in efficiency	• multi-specialty configurable workflows for clinical, anatomic pathology, molecular/NGS, clinical trials • scalable cloud-based solution with a comprehensive toolset for high-complexity testing labs • integrates advanced features, such as AI, genomic interpretation, analytics, and clinical decision support tools
*any brand or model **generate >500,000 billed tests annually, or >200 bed hospitals, or >500 requisitions per day ***generate <500,000 billed tests annually, or <200 bed hospitals, or <500 requisitions per day ****HL7 2.5.1, LOINC, SNOMED, etc. *****using NAACCR Pathology Laboratory Electronic Reporting, vol. V, version 4.0, April 2011 ed. Note: a dash as an answer means company did not respond or question is not applicable	[†] formerly ^{TD} Synergy	[†] formerly XIFIN LIS Anywhere, PathCentral AP Anywhere, eTeleNext AP Anywhere

All information is supplied by the companies listed. The tabulation does not represent an endorsement by the CAP.

In the market for laboratory software or instrumentation?

VISIT
captodayonline.com/
productguides
to view, print,
and compare
product information.



These interactive guides are online now:

INSTRUMENTS

- AP automation: tissue processors, embedders, microtomes, stainers
- Automated molecular platforms
- Bedside glucose testing systems
- Chemistry and immunoassay analyzers for mid- and high-volume laboratories
- Chemistry and immunoassay analyzers for point-of-care and low-volume laboratories
- Coagulation analyzers
- Coagulation analyzers—point of care, self-monitoring
- Hematology analyzers
- In vitro blood gas analyzers
- Laboratory automation systems and workcells
- Next-generation sequencing instruments
- Urinalysis instrumentation

SOFTWARE SYSTEMS

- Anatomic pathology computer systems
- Billing/Accounts receivable/RCM systems
- Blood bank information systems
- Laboratory information systems
- Laboratory-provider links software
- Positive patient identification products