

CGM LABDAQ 20.1 & Above System Requirements—MS SQL

- Hardware and software must meet all requirements that apply to your CGM LABDAQ configuration. Check your proposal or contract to determine the specific items included with your system.
- The hardware and software described here do *not* constitute a catalog of items sold by CompuGroup Medical.

Servers and Workstations

- Mac OS® and hardware platform are *not* supported.
- A CGM LABDAQ server *cannot* function as the primary or backup domain controller.

	Ideal Use	Processor	RAM	Storage	Operating System	Backup Device	Other Hardware
Dedicated Server— Scanning, 6 SSD 2U Xeon Gold	Large labs Any lab storing scans or attachments in LABDAQ. Can be paired with Interface Server to load balance	Gold Xeon 6230 2.1G, 20C/40T	128GB	1.2TB SSD SAS ISE x2 1.92TB SSD SAS ISE x4 (RAID-1)	Windows® Server 2022 Standard	Data Backup (Network) 1 TB NAS	Smart UPS – 6 HDD
Dedicated Server 4 SSD 2U Xeon Gold	15-30 Workstation labs with some level of attachments but not every requisition or result. Five or more HL7 interfaces. Can be paired with Interface Server to load balance database vs application	Gold Xeon 6230 2.1G, 20C/40T	128GB	1.6TB SSD SAS ISE x2 1.92TB SSD SAS ISE x2 (RAID-1)	Windows® Server 2022 Standard	Data Backup (Network) 1 TB NAS	Smart UPS – 6 HDD
Dedicated Server 4 SSD 2U Xeon Silver	10-20 Workstation labs with some level of attachments but not for every requisition or result	Intel Xeon Silver 4316 2.1G, 20C/40T	64GB	1.6TB SSD SAS ISE x4 (RAID-1)	Windows® Server 2022 Standard	Data Backup (Network) 1 TB NAS	Smart UPS – 6 HDD

	Ideal Use	Processor	RAM	Storage	Operating System	Backup Device	Other Hardware
Dedicated Server—2 SSD Tower	Mid-sized labs with 5-15 workstations Any lab with 2-3 file-based analyzers Facilities with 1-2 remote labs & 1 unidirectional analyzer connection per remote lab	Intel® XEON® E-2146G 6 Core or equivalent	64GB	Mirrored (2- 1TB SSD) & 250 GB NVMe M.2 Boot Drive	Windows® Server 2022 Standard	Data Backup (Network) 1 TB NAS	Smart UPS
Workstation-Server	Physician’s office lab (POL) with low test volume Connects to a max of 3 other workstations.	Ryzen™ 5 or equivalent	64GB	1TB SSD & 250GB NVMe M.2 Boot Drive	Windows® 11 Professional	USB HDD External	
Virtual Server	Client preference	Intel® XEON® E2136 or equivalent 4 Cores assigned to LABDAQ/MS SQL	64GB—32GB just for MS SQL	1TB— More if scanning 250GB for the OS partition Avoid RAID 5 or 6 due to write penalty	Windows® Server 2022 Standard	300 GB partition for internal backups + separate server backup	
Interface Server 2 SSD 2U	Lab with several HL7 interfaces—in addition to other Dedicated Server	Gold Xeon 5318Y 2.1G, 24C/48T	128GB	1.2TB SSD SAS ISE x2 (RAID-1)	Windows® Server 2022 Standard	Data Backup (Network) 1 TB NAS	Smart UPS – 6 HDD
Workstation	All lab work	AMD Ryzen™ 5 or equivalent	16GB DDR4	250GB NVMe M.2 Drive	Windows® 11 Professional	Not Required	4-Port PCI Express Serial Card if connecting to analyzers UPS

Minimum Requirements

Certain existing hardware may be adequate with the following specifications:

Dedicated server—6SSD 2U

- **Ideal Use:**
 - Mid-sized labs with 5-15 workstations
 - Any lab with 2-3 file-based analyzers
 - Facilities with 1-2 remote labs and 1 unidirectional analyzer connection per remote lab
- **Processor:** Intel® XEON® Silver 4216 16 Core or equivalent
- **RAM:** 64GB
- **Storage:** Six 1TB 7,200 RPM SAS hard disks, configured as three RAID-1 mirrored pairs

Dedicated Scanning Server—6 HDD (2U)

- **Ideal Use:**
 - Large labs
 - Any lab storing scans or attachments in LABDAQ. Can be paired with Interface Server to load balance
- **Processor:** Intel® XEON® Silver 4216 16 Core or equivalent
- **Storage:**
 - Six SATA Read-Intensive 6Gbps SSDs in three RAID-1 mirrored pairs:
 - Two 960GB SSDs
 - Two 1.92TB SSDs
 - Two 3.84TB SSDs

Operating Systems

- **For servers:** Windows® Server 2019
- **For workstations:** Windows® 10 Pro, 64-bit

Virtual Hosted Environments

If you choose a virtual hosted environment for your server, reference [SERVERS AND WORKSTATIONS \(Page 1\)](#) and configure your server based on the virtual server specifications. **Note:** No other applications may run on the CGM LABDAQ server.

It is common for most third-party vendors to include MS SQL Server and Device Cal licensing. Please verify this when choosing a vendor. Should licensing be included, this is referred to as Client-Provided MS SQL licensing. If licensing is not included, this is referred to as CGM-Provided MS SQL licensing and requires you to purchase the licenses through us.

If you are providing your own MS SQL Server and Device Cal licensing, please reference [MS SQL SERVER LICENSING](#)(Page 5) for additional information about Client- versus CGM-Supported licensing. CGM-Supported licensing is a paid option that allows us to assist with MS SQL database and CGM LABDAQ-related issues. We do **not** set up nor do we support configuration of your virtual hosted environment. **Note:** Changes to database structure or configuration without CGM's approval will violate the DBA support agreement. If terms are violated, support of database will be terminated.

Required Information

When providing your own MS SQL Server and Device Cal licensing, the following information must be provided to your Implementation Engineer prior to the installation of CGM LABDAQ:

- Creation of an SA user and password
 - This user is required to run scripts for creation of the schema to house your database and our cgmlab user
 - In some instances, you may need to enable “SQL Server and Windows Authentication mode” in SQL Server Management Studios to allow connections to MS SQL by the SA and cmglab users
- Instruction as to which drives the MS SQL backup and data files are stored
- IP Address of the server (If using AWS, this would be the external IP address)

Virtual Platforms

- CGM supports VMware and Microsoft Hyper-V virtual platforms. If you are already established on another platform, please discuss with a CGM representative.
- CGM-provided licenses are not valid on ANY cloud service that offers their own pricing for MS SQL Server licensing. This includes but is not limited to AWS, Azure and Google Cloud.
- Under the Server + CAL mode, each server license allows customers to run any number of SQL Server instances in a single OSE either physical or virtual.

MS SQL Server Standard

CGM does *not* support Microsoft SQL Server Express.

MS SQL Server Licensing

Microsoft SQL (MS SQL) Server 2019 Standard Edition Server and Device CAL licensing will normally be provided by CGM.

DBA support for CGM-Provided MS SQL Licenses

CGM will install the MS SQL licenses for the dedicated CGM LABDAQ instance.

What is included in DBA support?

- Installation of the standard maintenance package for all CGM LABDAQ clients. **Custom options are not offered or supported.**
- Creation of scheduled tasks for database backups and common maintenance.
- Creation of the LABDAQ user and database; creation and maintenance of database structure.
- Database recovery in case of failure.
- Troubleshooting database-related errors and performance issues (as needed).
- Contacting Microsoft or other vendors/third-parties on the client's behalf.
- Database updates/patches.

What is NOT included in DBA support?

- Monitoring the overall system health and security (user access, storage, disk health, etc.). This is the client's responsibility.
- Active performance monitoring and database reports.

DBA support for Client-Provided, CGM-Supported MS SQL Licenses

What is included in DBA support?

- Installation of the standard maintenance package for all CGM LABDAQ clients. **Custom options are not offered or supported.**
- Creation of scheduled tasks for database backups and common maintenance.
- Creation of the LABDAQ user and database; creating and maintaining database structure.
- Database recovery in case of failure.
- Troubleshooting database-related errors and performance issues (as needed).

What is NOT included in CGM DBA support for Client-Provided MS SQL?

- Monitoring the overall system health and security (user access, storage, disk health, etc.). This is the client's responsibility.
- Active performance monitoring and database reports.
- Contacting Microsoft or other vendors/third-parties on the client's behalf.
- Database updates/patches.
 - Microsoft does quarterly releases of cumulative updates. These should be downloaded and installed by the client's IT when released.
Download link: [Latest updates for Microsoft SQL Server](#).

System Requirements for CGM DBA support on Client-provided SQL Server database

- Dedicated host with Windows Server 2022 operating system
 - No other applications may be run on the CGM LABDAQ server
 - If server is virtual, a separate virtual machine is required.
 - If server is physical, a dedicated physical server is required.
- Dedicated instance of MS SQL Server 2019, with valid Standard or Enterprise edition license.
 - No other instance of MS SQL Server installed on the CGM LABDAQ server except for the dedicated CGM LABDAQ instance.
- MS SQL Server 2019 database and SQL Server Management Studio (SSMS) must be installed before CGM LABDAQ installation or conversion.
 - The MS SQL Server 2019 database must be installed using the default instance name (MSSQLSERVER).
 - If the client has not installed the MS SQL database, the install package and license key need to be available to CGM personnel before CGM LABDAQ installation.
- Clients are expected to use their own System Admin (SA) account password.
 - CGM password cannot be used for these installs. Once CGM has access we will create a new admin account.

DBA support for Client-Provided, Client-Supported MS SQL Licenses

What is included when the client both provides and supports MS SQL Licensing?

- CGM will create the LABDAQ user and database and maintain the database structure.

Changes to database structure or configuration without CGM's approval will violate the DBA support agreement. If terms are violated, support of database will be terminated.

Other Requirements

- High-volume labs, labs with large CGM LABDAQ databases, and labs that use advanced auditing or the scanning/attachments option, **may need more storage**. Consult your IT specialist for specifications.
- A high-speed internet connection is required for CGM Technical Support to access your system.
- CGM LABDAQ may recognize logins from the office domain only; any **VPN** network used for access **must connect to the office network's domain**.

Peripherals

Note: A high-speed, high-volume scanner may be required to convert large amounts of paper, including patient requisitions.

	Recommended Hardware	Interface	Other Requirements
Report Printers	Laser printer	Local or Network	
Label Printers: 1-2 Workstations, 1 Site, No Orders via EMR	Zebra ZD410 USB or Ethernet, Zebra GC 420, Zebra GK 420d Ethernet, Dymo 450, and GoDex DT2x are known to be compatible	USB, serial, or Network (depending on printer)	
Label Printers: 3 or More Workstations OR Multiple Sites; Orders via EMR	Zebra ZD410 Ethernet, Zebra GK 420d Ethernet, and GoDex DT2x are known to be compatible	Network	Label printers required at both lab and remote sites
Hand-Held Barcode Scanners	High-performance linear image	USB, Network, or Bluetooth	
High-Speed Scanners	TWAIN-compliant, high-speed, high-volume scanner manufactured by Canon, Fujitsu, or Ricoh	USB or Network	Resolution: 200dpi

Network (WAN)

- Dedicated, synchronous bandwidth, minimum of 5 Mbps point-to-point for up to 10 workstations at each remote site connected to the main laboratory
- Maximum average ping time of 20 milliseconds

Test Environment

A test environment, if specified in the contract, requires the following:

- One workstation either containing a test schema or with network access to a test schema. The test schema cannot be connected to the LABDAQ production environment
- A license for CGM LABDAQ Test Environment access (includes 1 MS SQL Device CAL and 1 Concurrent LABDAQ license.) Additional licensing may be needed when connecting multiple workstations to the test environment.
- Remote access to the test workstation or server by CGM personnel to address support issues

System Security

At a minimum, maintaining required system security consists of:

- Secure network configuration
- Windows Updates *regularly installed*
- Protection measures against malware, viruses, and other malicious intrusions
- Restriction of personal use of CGM LABDAQ workstations—such as web browsing, email, social networking, media streaming (except for CGM educational videos)

Note: Anti-virus software may affect performance of CGM LABDAQ.

HL7 Integration

To complete an interface using the CGM LABDAQ Import/Export Application, the following is required:

- Contract with the third-party vendor supplying software or data requiring an HL7 interface
- An SMTP, VPN, or other link between the network supporting CGM LABDAQ and the HL7 interface

CGM LABDAQ Physician-Office Lab (POL) Product Limitations

- The CGM LABDAQ POL product is limited to 4 CGM LABDAQ concurrent licenses. A fee-based conversion to CGM LABDAQ will be required for system additions/expansion. Some software modules are not available with CGM LABDAQ POL. Please contact CGM for details.

System Requirements Compliance

By signing below, you agree to adhere to the Minimum System Requirements prior to the installation of CGM LABDAQ software. Not meeting these requirements may impact performance and violate the CGM LABDAQ maintenance agreement.

Signatures

You

Signature

Printed Name

Title

Date

CGM LAB/CompuGroup Medical

Signature

Printed Name

Title

Date

