

# CGM LABDAQ 20.1 & Above *Minimum* 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.
- This document assigns **minimum requirements**. They may need to be altered or increased to ensure optimal performance.
- The hardware and software described here does *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.

	Dedicated Server— 6 HDD (2U)	Dedicated Scanning Server—6 HDD (2U)	Dedicated Server—2 HDD	Server- Workstation	Virtual Server*	Workstation
<b>Ideal Use</b>	Large labs with 3 or more remote lab locations Single labs with more than 15 workstations More than 3 file-based analyzers	Large labs Any lab storing scans or attachments in LABDAQ	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	Physician’s office lab (POL) with low test volume This server connects to a max of 2 other workstations.	Client preference	All lab work
<b>Processor</b>	Intel® XEON® Silver 4112 Quad Core or equivalent	Intel® XEON® Silver 4112 Quad Core or equivalent	Intel® XEON® Quad Core E3-1230 v6 or equivalent	Ryzen™ 5 or equivalent	Intel® XEON® E2136 or equivalent 4 Cores assigned to LABDAQ/MS SQL	Ryzen™ 3 or equivalent
<b>RAM</b>	32GB	32GB	32GB	32GB	64GB— 32GB dedicated for MS SQL	8GB DDR4

	Dedicated Server— 6 HDD (2U)	Dedicated Scanning Server—6 HDD (2U)	Dedicated Server—2 HDD	Server- Workstation	Virtual Server*	Workstation
<b>Storage</b>	Six 1TB 7,200 RPM SAS hard disks, configured as three RAID-1 mirrored pairs	Six 7,200 RPM SAS hard disks configured as three RAID-1 mirrored pairs: Two 1TB disks Two 2TB disks Two 4TB disks	Two 1TB SATA 7,200 RPM hard disks, mirrored	1TB HDD	1TB— More if scanning 250GB for the OS partition Avoid RAID 5 or 6 due to write penalty	1TB hard disk
<b>Operating System</b>	Windows® Server 2016 Standard Edition, 16 Core	Windows® Server 2016 Standard Edition, 16 Core	Windows® Server 2016 Standard Edition, 16 Core	Windows® 10 Pro	Windows Server 2016 Standard Edition, 16 Core	Windows® 10 Professional, 64-bit
<b>Backup Device</b>	Client responsible for backup device	Client responsible for backup device	Client responsible for backup device		300 GB partition for internal backups, plus a separate server backup	Not Required
<b>Other Hardware</b>	Uninterruptible Power Supply (UPS) Dual Power Supply	Uninterruptible Power Supply (UPS) Dual Power Supply	Uninterruptible Power Supply (UPS)			4-Port PCI Express Serial Card if connecting to analyzers Uninterruptible Power Supply (UPS)

### \*Virtual Server Notes

- Windows® Server 2016 Essentials Edition is *not* supported because it installs as a domain controller. Windows® Server 2019 Essentials Edition cannot be installed as a domain controller.

## MS SQL Server Standard

### 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 LD1 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 LD1 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 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.
- 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 2016 or Windows Server 2019 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.

**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**.

## 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 cloud systems such as AWS or Azure.
- 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.

## Peripherals

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

	Report Printers	Label Printers: 1-2 Workstations, 1 Site, No Orders via EMR	Label Printers: 3 or More Workstations OR Multiple Sites; Orders via EMR	Hand-Held Barcode Scanners	High-Speed Scanners
<b>Recommended Hardware</b>	Laser printer	Zebra ZD410 USB or Ethernet, Zebra GC 420, Zebra GK 420d Ethernet, and Dymo 450 are known to be compatible	Zebra ZD410 Ethernet and Zebra GK 420d Ethernet are known to be compatible	High-performance linear image	TWAIN-compliant, high-speed, high-volume scanner manufactured by Canon, Fujitsu, or Ricoh
<b>Interface</b>	Local or Network	USB, serial, or Network (depending on printer)	Network	USB, Network, or Bluetooth	USB or Network
<b>Other Requirements</b>			Label printers required at both lab and remote sites		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 with network to access test schema
- A license for CGM LABDAQ
- Remote access to the CGM LABDAQ server and test workstation by CGM personnel

## 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 SFTP, 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**

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**Printed Name**

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**Title**

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**Date**

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**CGM LAB/CompuGroup Medical**

**Signature**

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**Printed Name**

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**Title**

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**Date**

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