



Labworks, LLC  
230 North 1200 E #202  
Lehi, UT 84043  
Phone: 844 452-2967  
[www.labworks.com](http://www.labworks.com)

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## LABWORKS v7.1

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### Hardware and Software Guide

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## Table of Contents

1 General Description .....	3
2 Hardware Requirements .....	3
2.1 Server Hardware Requirements (Database Server as well as Application Server) .....	3
2.2 Client Hardware Requirements .....	3
2.3 Webserver Hardware Requirements (Optional) .....	3
3 Software Requirements.....	4
3.1 Required Software for Database - Oracle.....	4
3.2 Required Software for Database – SQL Server.....	4
3.4 Required Software for Webserver (Optional) .....	5

## 1 General Description

LABWORKS LIMS 7.1 is a suite of Laboratory Information Management System (LIMS) applications from Labworks, LLC. This document describes the required hardware and software to install and run LABWORKS 7.1 application. Please note that we do support the versions that software was qualified on (Qualified column). In the Supported column, we will only list supported versions on which the software was not explicitly qualified.

## 2 Hardware Requirements

### 2.1 Server Hardware Requirements (Database Server as well as Application Server)

Hardware Component	Recommended Specification
Memory (RAM)	32 GB
Processor	8 core 3.0 GHz or higher processor
Free Space Required on Hard Drive	250 GB + 1 GB per User per year

**Note:**

Database Server hosts the Application Database.

Application Server hosts the LABWORKS Server and Application Services.

With every LABWORKS version available, we tend to make more and more use of threading and parallelization so the more cores and threads that can be given to workstations and servers, the better.

**It is recommended to deploy the Database Server, Application Server and Webserver on separate environments.**

### 2.2 Client Hardware Requirements

Hardware Component	Recommended Specification
Memory (RAM)	16 GB
Processor	4 core 3.0 GHz or higher processor
Free Space Required on Hard Drive	20 GB

### 2.3 Webserver Hardware Requirements (Optional)

Hardware Component	Recommended Specification
Memory (RAM)	32 GB*

Processor	4 core 3.0 GHz or higher processor
Free Space Required on Hard Drive	100 GB

*\*only for 64 bit systems, one would need more than 4GB RAM*

**Note:** It is recommended to implement the standard industry practice to deploy a Testing Server in parallel with the Production Environment, so that customer can safely validate new versions of the software without putting the Production Environment at risk.

### 3 Software Requirements

#### 3.1 Required Software for Database - Oracle

Software	Qualified	Supported
Operating System	<ul style="list-style-type: none"> <li>Windows Server 2019</li> <li>Windows Server 2022</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">List of Operating Systems Supported</a></li> </ul>
Oracle	<ul style="list-style-type: none"> <li>19c</li> </ul>	<ul style="list-style-type: none"> <li>19c</li> </ul>
Oracle Installation	<ul style="list-style-type: none"> <li>Oracle Standard Edition</li> <li>Oracle Enterprise Edition</li> </ul>	<ul style="list-style-type: none"> <li>Oracle Standard Edition</li> <li>Oracle Enterprise Edition</li> </ul>
Oracle Character Set	UTF8, AL32UTF8	UTF8, AL32UTF8, we8mswin1252
Oracle Features	<ul style="list-style-type: none"> <li>Partitioning optional (Oracle Enterprise Only)</li> </ul>	<ul style="list-style-type: none"> <li>Partitioning optional (Oracle Enterprise Only)</li> </ul>

#### 3.2 Required Software for Database – SQL Server

Software	Qualified	Supported
Operating System	<ul style="list-style-type: none"> <li>Windows Server 2019</li> <li>Windows Server 2022</li> </ul>	<ul style="list-style-type: none"> <li>Windows Server 2019</li> <li>Windows Server 2022</li> </ul>
SQL Server	<ul style="list-style-type: none"> <li>SQL 2019</li> </ul>	<ul style="list-style-type: none"> <li>SQL 2019</li> </ul>
SQL Installation	<ul style="list-style-type: none"> <li>SQL Standard Edition</li> <li>SQL Enterprise Edition</li> </ul>	<ul style="list-style-type: none"> <li>SQL Standard Edition</li> <li>SQL Enterprise Edition</li> </ul>

### 3.3 Required Software for Client

Software	Qualified	Supported
Operating System	<ul style="list-style-type: none"> <li>Windows 10</li> </ul>	<ul style="list-style-type: none"> <li>Windows 10</li> <li>Windows Server 2019</li> <li>Windows Server 2022</li> </ul>
Microsoft Office	<ul style="list-style-type: none"> <li>Office 2013</li> <li>Office 2016</li> <li>Office 365</li> </ul>	<ul style="list-style-type: none"> <li>Office 2013</li> <li>Office 2016</li> <li>Office 365</li> </ul>
Oracle Client (If applicable)	<ul style="list-style-type: none"> <li><input type="checkbox"/> Oracle 19c Release 2 Client 32 Bit • Only the full Oracle client is qualified.</li> <li><input type="checkbox"/> Oracle</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Oracle 19c Client 32 Bit • Only the full Oracle client is qualified.</li> <li><input type="checkbox"/> Oracle</li> </ul>

### 3.4 Required Software for Webserver (Optional)

Software	Qualified	Supported
Operating System	<ul style="list-style-type: none"> <li>Windows Server 2019</li> <li>Windows Server 2022</li> </ul>	<ul style="list-style-type: none"> <li>Windows Server 2019</li> <li>Windows Server 2022</li> </ul>
Internet Information Services (IIS)	<ul style="list-style-type: none"> <li>IIS 10</li> </ul> <p>This should be installed and running, to confirm: Control Panel -&gt; Administrative Tools -&gt; Internet Services Manager Application will run in 32 bit mode. Make sure "Default Web Site" is started.</p>	<ul style="list-style-type: none"> <li>IIS 10</li> </ul> <p>This should be installed and running, to confirm: Control Panel -&gt; Administrative Tools -&gt; Internet Services Manager Application will run in 32 bit mode. Make sure "Default Web Site" is started.</p>
.NET Framework	.NET Framework 4.7.2 Application Pool Enable 32 bit applications.	.NET Framework 4.7.2 Application Pool Enable 32 bit applications.
Network	<p>Network connectivity to the Oracle/SQL database from the Webserver.</p> <p>Clients must be able to connect to the Webserver. All clients must be able to resolve the same name to browse to the Webserver.</p>	<p>Network connectivity to the Oracle/SQL database from the Webserver.</p> <p>Clients must be able to connect to the Webserver. All clients must be able to resolve the same name to browse to the Webserver.</p>

Microsoft Office (Standard, Professional, or Enterprise)	Required for Excel Calculations <ul style="list-style-type: none"> <li>• Excel 2013</li> <li>• Excel 2016/Office 365</li> </ul>	Required for Excel Calculations <ul style="list-style-type: none"> <li>• Excel 2013</li> <li>• Excel 2016/Office 365</li> </ul>
Oracle Client	Oracle 19c Client	Oracle 19c Client
<b>Software</b>	<b>Qualified</b>	<b>Supported</b>
	<i>Only the full Oracle client is qualified.</i>	<i>Only the full Oracle client is supported.</i>
Other Applications	1. Bartender Enterprise 2019 is required if printing Bartender labels from Sample Login  2. Crystal Report 2020	1. Bartender Enterprise 2019 is required if printing Bartender labels from Sample Login  2. Crystal Report 2020