Chromeleon 7

Chromatography Data System

Version 7.4.1

Supported Operating Systems

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1 Introduction

This document lists the operating systems supported for use with Chromeleon 7.4.1 and the role within Chromeleon for which each operating system can be used.

Note: Changes to this document since the previous release of Chromeleon 7 are highlighted in yellow.

2 Support details

2.1 General

Chromeleon 7.4.1 is a Feature Release version of Chromeleon CDS.

2.1.1 Operating system support

In general, Feature Releases and subsequent Maintenance Updates are supported on the current version(s) of Windows Desktop, Windows Server, and Citrix available at the beginning of the validation phase of the Chromeleon project.

2.1.2 Database support

In general, Feature Releases and subsequent Maintenance Updates are supported for use with the latest version, and the most recent update of the previous version, of Microsoft SQL and Oracle databases available at the beginning of the validation phase of the Chromeleon project.

2.1.3 Operating system and database releases after Chromeleon release

After a Chromeleon Feature Release, we continue to monitor new Windows (including Windows KBs) and Database releases. If new versions of Windows, SQL, or Oracle are released between Chromeleon Feature Releases, then we will normally aim to test Chromeleon compatibility with those versions within a 6-month period and make an updated announcement about Chromeleon support on those platforms. However, if a subsequent Chromeleon Feature Release (FR+1) is released within that 6-month period, then the new Windows, SQL, or Oracle versions will be tested and supported on the subsequent release only.

2.2 Supported operating systems per role

The following table lists the operating systems supported for each role in Chromeleon.

For Enterprise Chromeleon systems, any supported Client operating system(s) can be used in combination with any supported Server operating system(s).

Role	Supported Operating Systems
Standalone Workstation[4]	Microsoft Windows 11 Pro and Enterprise (64-bit)[10] Microsoft Windows 10 Pro and Enterprise (64-bit)
Remote Client/Data Processing Client[4]	Microsoft Windows 11 Pro and Enterprise (64-bit)[10] Microsoft Windows 10 Pro and Enterprise (64-bit)
Thin Client[1]	Microsoft Windows Server 2025 with Terminal Services activated Microsoft Windows Server 2022 with Terminal Services activated Microsoft Windows Server 2019 with Terminal Services activated Microsoft Windows Server 2022 with Terminal Services activated running Citrix Virtual Apps and Desktops 7 2203 LTSR
IPC/Enterprise Workstation[4]	Microsoft Windows 11 Pro and Enterprise (64-bit)[10] Microsoft Windows 10 Pro and Enterprise (64-bit)
247 Instrument Controller[4]	Windows 11 LTSC 24H2 firmware version TDS6.70 (TDS6)[10] Windows 10 LTSC 21H2 firmware version TDS6.50 (TDS6) Windows 10 LTSC 21H2 firmware version TDS5.51 (TDS5) [9] Windows 10 LTSC 1809 firmware version TDS5.50 (TDS5) [9]
Chromeleon Domain Controller[1]	Microsoft Windows Server 2025 Microsoft Windows Server 2022 Microsoft Windows Server 2019
Data Vault Server (Master or Slave) [1]	Microsoft Windows Server 2025 Microsoft Windows Server 2022 Microsoft Windows Server 2019
Database Server[2][8]	Oracle 19c [7] Oracle 18c [7] Microsoft SQL Server 2025 Microsoft SQL Server 2022 Microsoft SQL Server 2019 Microsoft SQL Server 2017
Local database	Oracle not supported for local data vault Microsoft SQL Server 2025 Express Microsoft SQL Server 2022 Express Microsoft SQL Server 2019 Express Microsoft SQL Server 2017 Express Microsoft SQL Server 2016 Express
Raw Data Server[1]	Microsoft Windows Server 2025 Microsoft Windows Server 2022 Microsoft Windows Server 2019
.Net Framework[6]	Microsoft .NET Framework 4.8 Microsoft .NET Framework 4.7 Microsoft .NET Framework 4.6.2 Microsoft .NET Framework 3.5 SP1 [11]
Virtualization[3]	Virtualization is supported for the following roles: • Chromeleon Domain Controller • Chromeleon Data Vault Server (load-balanced) • Database Server (Oracle and SQL) • Chromeleon Raw Data Server • Thin Client/Remote Client/Data Processing Client

Role	Supported Operating Systems
Cloud Deployment[5]	Cloud deployment is supported for the following roles: • Chromeleon Domain Controller • Chromeleon Data Vault Server (load-balanced) • Database Server (Oracle and SQL) • Chromeleon Raw Data Server • Thin Client

Notes:

[1] Windows Server 2025, 2022, and 2019 are supported on both the Standard and Datacenter editions.

[2] If the database is installed on the same machine as the Chromeleon Domain Controller or the Chromeleon Data Vault Server (neither of these configurations are recommended as they cause a potential single-point-of-failure in the Chromeleon system), the database version must be compatible with the Server operating system. Refer to the documentation for your chosen database for more information.

[3] Thermo Fisher Scientific has tested Chromeleon on a range of virtualization hypervisors. Our findings are that, provided the hypervisor is capable of hosting a virtual machine running one of the Windows versions listed in the table above, it is capable of being used in a Chromeleon system in any of the roles listed in the Virtualization section of the table above. Virtualization is not supported for Workstation or IPC roles as a physical connection to an instrument is required and reliable “virtualized” instrument connection mechanisms are not fully compatible with real-time operations and usage of multiple communication ports.

[4] See section 2.4 for further information regarding Windows 10 support.

[5] Chromeleon has been tested by Thermo Fisher Scientific on Amazon Web Services (AWS) Elastic Cloud Compute (EC2) instances of Windows 2022 Server and Windows 2019 Server. Any other cloud platform which supports the creation of a Windows Server VM running one of the Windows versions listed in the table above is supported for use in a Chromeleon system in any of the roles listed in the Cloud deployment section above. Cloud deployment is not supported for Workstation or IPC roles as a physical connection to an instrument is required and reliable “virtualized” instrument control connection mechanisms are not fully compatible with real-time operations and usage of multiple connection ports.

[6] The .net framework versions listed in this table are the minimum versions required for use with Chromeleon. Each version of Microsoft Windows comes with a version of .net framework already installed. Newer version of Windows will have version(s) of .net which are later than the versions listed in the table. To use Chromeleon, you must also ensure that the minimum versions of .net listed in the table are installed in addition to any pre-installed versions.

[7] Installation of the Oracle 18c and 19c clients require special instructions. These can be found in the document #460 of the Chromeleon Enterprise documents.

[8] The database versions documented can also be deployed as RDS (Relation Database Service) based versions for customers installing a cloud-based infrastructure.

[9] Windows 10 LTSC 1809 reached end of support in Jan 2024. Instrument Controllers of version TDS5 can now be field upgraded to version Windows 10 LTSC 21H2 (IoT Enterprise LTSC), with mainstream support ending Jan 2027 and extended support ending Jan 2032. The upgrade will require the purchase of a valid Microsoft Windows sticker to prove authenticity of the Windows version installed. Please contact your local Thermo Fisher representative who will be able to assist in this matter.

[10] Existing TDS6 Instrument Controllers running Windows 10 based firmware can be field upgraded to version Windows 11 LTSC 24H2 (IoT Enterprise LTSC). The upgrade will require the purchase of a valid Microsoft Windows sticker to prove authenticity of the Windows version installed. Please contact your local Thermo Fisher representative who will be able to assist in this matter.

[11] Microsoft SQL Server supports a maximum physical disk sector size of **4096 bytes (4 KB)**. Physical sector sizes above 4 KB are **not supported by any released SQL Server version**, regardless of SQL edition or Chromeleon version. When the underlying storage reports a physical sector size greater than 4 KB, SQL Server may fail to install or start. Some Windows 11 configurations (particularly on certain NVMe SSDs) report larger physical sector sizes, which can trigger this behavior even if the same system appeared to work under Windows

10. For more information, see the Microsoft troubleshooting guidance: https://learn.microsoft.com/en-us/troubleshoot/sql/database-engine/database-file-operations/troubleshoot-os-4kb-disk-sector-size.

[12] After certain Windows Updates, the **.NET Framework 3.5 (includes .NET 2.0 and 3.0)** Windows Feature may be disabled or removed. If this occurs, Chromeleon Windows services may fail to start at runtime. Re-enable **.NET Framework 3.5** (NetFx3) via "Turn Windows features on or off" or using DISM /Online /Enable-Feature /FeatureName:NetFx3 /All, then restart the affected services. **Installing .NET 3.5 may require internet access** (unless an offline source is provided) and is **often slow/time-consuming**, with duration depending on **network speed** and **system policy** (e.g., WSUS/Feature-on-Demand settings).

2.3 Windows and database security updates

This Chromeleon release has been validated for use with the operating systems and databases listed in the previous sections. Security updates to Windows and other system components are not formally validated.

For optimum security, the installation of the latest Windows and database security updates is generally recommended.

However, security updates are not formally validated against already released versions of Chromeleon, so the possibility of a conflict between Chromeleon releases and these updates cannot be excluded. Therefore, installation and testing of security updates is the responsibility of the respective installation site.

In the event of a compatibility issue when testing a security update, contact your local Thermo Fisher Scientific representative for support. Reasonable efforts to solve such problems will be made, but compatibility with every security update cannot be guaranteed.

2.4 Windows feature updates

Thermo Fisher conducts its testing of a Chromeleon CDS release against the latest available feature release of Windows 10 and Windows 11 available at the time of release. We do not formally test against all previous feature releases. As with security updates (see section 2.3), the possibility of a conflict between Chromeleon releases and these Windows feature releases cannot be excluded. Therefore, installation and testing of these Windows feature releases is the responsibility of the respective installation site.

The following tables provide a summary of the current end of support dates for Windows 10 and Windows 11 releases:

Windows 10 Version	Mainstream Support End Date	Extended Support End Date
22H2 General Availability Channel – Enterprise, Education, IoT Enterprise	14th October, 2025	Additional year available through purchase – Extended Security Updates (ESU).
21H2, Long-Term Support Channel 2021 - Enterprise	12th January, 2027	Not available
21H2, Long-Term Support Channel 2021 – IoT Enterprise	12th January, 2027	13th January, 2032
1809, Long-Term Support Channel 2019 - Enterprise	End of servicing	9th January, 2029
1607, Long-Term Support Branch 2016 - Enterprise	End of servicing	13th October, 2026

Windows 11 Version – Pro, Pro Education, Pro for Workstations	End of Servicing
25H2 General Availability Channel	12th October, 2027
24H2 General Availability Channel –	13th October, 2026

Windows 11 Version – Enterprise, Education, IoT Enterprise	End of Servicing
25H2 General Availability Channel	10th October, 2028
24H2 General Availability Channel	12th October, 2027
23H2 General Availability Channel	10th November, 2026

Windows 11 Version – Long-Term Support Channel	End of Servicing
24H2	10th October, 2034

3 Legal notices

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3.2 Revision history

Revision	Date	Comment
1.0	August2026	First Issue