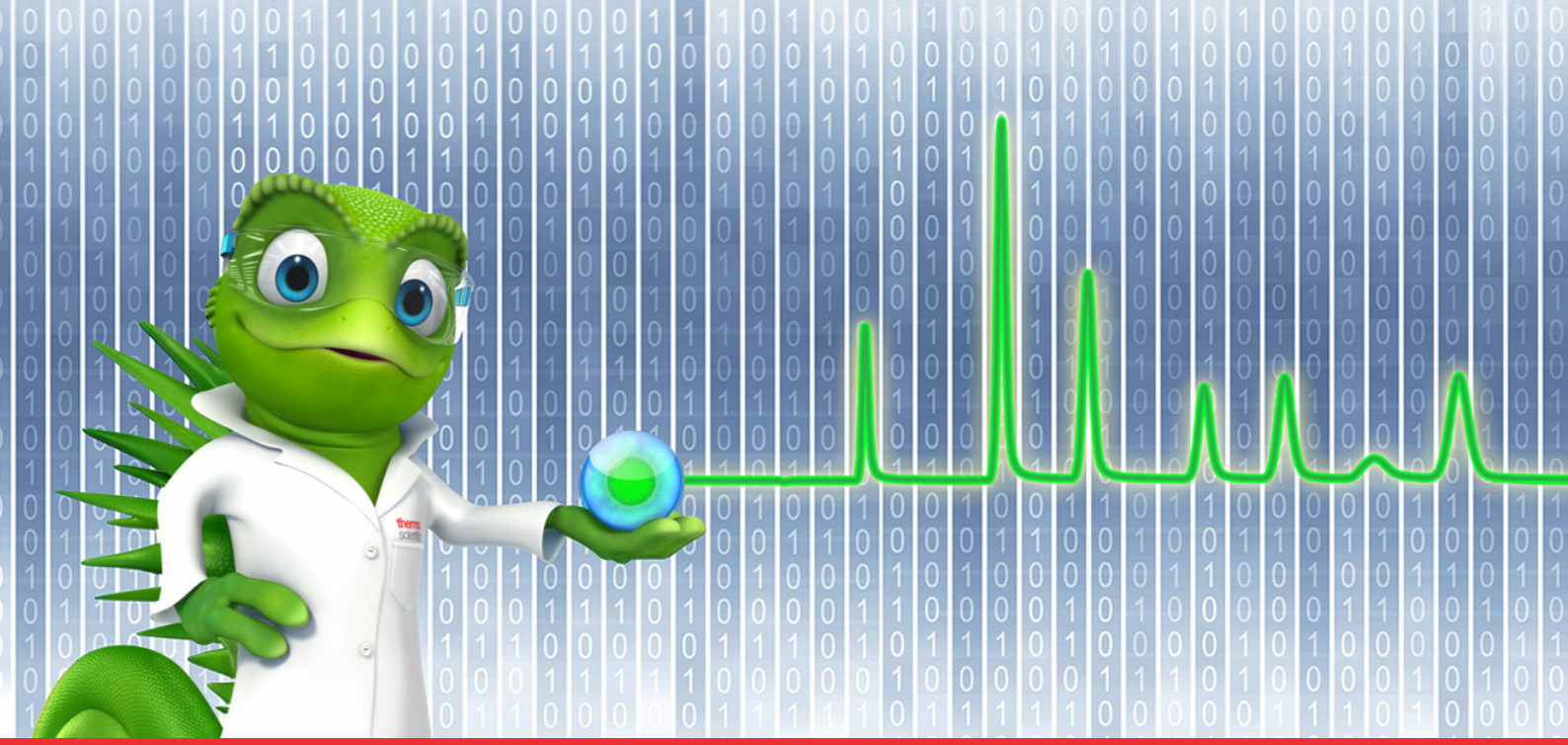

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Supported Operating Systems

Chromeleon 7
Chromatography Data System

Software Version 7.3.2 MUc • September 2024

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Table of contents

1 Introduction 4
2 Support details 5
2.1 General 5
2.1.1 Operating system support 5
2.1.2 Database support 5
2.1.3 Operating system and database releases after Chromeleon release 5
2.2 Supported operating systems per role 6
2.3 Windows and database security updates 7
2.4 Windows feature updates 8

1 Introduction

This document lists the operating systems supported for use with Chromeleon 7.3.2 MUc 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 7.3.2 MUc is a Maintenance Update of Chromeleon 7.3.2.

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) Microsoft Windows 10 Pro and Enterprise (64-bit)	
Remote Client/Data Processing Client[4]	Microsoft Windows 11 Pro and Enterprise (64-bit) Microsoft Windows 10 Pro and Enterprise (64-bit)	
Thin Client[1]	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 Microsoft Windows Server 2019 with Terminal Services activated running Citrix XenApp 7.15 Microsoft Windows Server 2016 with Terminal Services activated Microsoft Windows Server 2016 with Terminal Services activated running Citrix XenApp Server 7.15	
IPC/Enterprise Workstation[4]	Microsoft Windows 11 Pro and Enterprise (64-bit) Microsoft Windows 10 Pro and Enterprise (64-bit)	
247 Instrument Controller[4]	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 2022 Microsoft Windows Server 2019 Microsoft Windows Server 2016	
Data Vault Server (Master or Slave) [1]	Microsoft Windows Server 2022 Microsoft Windows Server 2019 Microsoft Windows Server 2016	
Database Server[2][8]	Oracle 19c [7] Oracle 18c [7]	Microsoft SQL Server 2022 Microsoft SQL Server 2019 Microsoft SQL Server 2017
Local database	Oracle not supported for local data vault	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 2022 Microsoft Windows Server 2019 Microsoft Windows Server 2016	
.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	
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 2022, 2019, and 2016 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 2016 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.

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

Beginning with Windows 10, version 21H2 (Windows 10 November 2021 update), feature updates will be released annually in the second half of the year via the General Availability Channel. Microsoft will continue to support at least one Windows 10 release until October 14, 2025. For details on the feature releases of Windows currently in support by Microsoft, refer to the Microsoft website.

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.

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