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Supported Operating Systems

Chromeleon 7
Chromatography Data System

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Revision	Date	Comment
1	Feb 2020	Initial Product Release (Chromeleon 7.3)
2	Mar 2021	Updated to include support for Microsoft SQL Server 2019, Microsoft Windows Server 2019. Updated Virtualization and Cloud sections. Updated the Windows 10 End of Service section.

Note: Changes made since the previous version of this document are highlighted in <mark>yellow</mark>.

Table of Contents

1 Introduction

This document lists the operating systems supported for use with Chromeleon 7.3 and the role within Chromeleon for which each operating system can be used.

2 Support Details

2.1 General

2.1.1 Operating System support

In general Feature Releases (FR) are supported on the current version(s) of Windows Desktop, Windows Server, and Citrix available at the time of the release phase of the Chromeleon project.

2.1.2 Database support

In general Feature Releases (FR) are supported for use with the latest version, and the most recent update of the previous version, of Microsoft SQL and Oracle databases.

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, for each role in Chromeleon, the operating systems supported.

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	Microsoft Windows 10 Pro and Enterprise (64-bit)[5] Microsoft Windows 8.1 Professional (64-bit)[6][8]
Remote Client / Data Processing Client	Microsoft Windows 10 Pro and Enterprise (64-bit)[5]
Thin Client	Microsoft Windows Server 2019 with Terminal Services activated [1] Microsoft Windows Server 2016 with Terminal Services activated[1] Microsoft Windows Server 2016 with Terminal Services activated running Citrix XenApp Server 7.15[1] Microsoft Windows Server 2012 R2 (64-bit) with Terminal Services activated[1] Microsoft Windows Server 2012 R2 (64-bit) with Terminal Services activated running Citrix XenApp Server 7.6[1]

IPC / Enterprise Workstation	Microsoft Windows 10 Pro and Enterprise (64-bit) [5] Microsoft Windows 8.1 Professional (64-bit)[6][8]	
247 Instrument Controller	Microsoft Windows 10 LTSC 1809 firmware version TDS5.50 (TDS5) [5]	
Chromeleon Domain Controller	Microsoft Windows Server 2019 [1] Microsoft Windows Server 2016 [1] Microsoft Windows Server 2012 R2 (64-bit) [1]	
Data Vault Server (Master or Slave)	Microsoft Windows Server 2019 [1] Microsoft Windows Server 2016 [1] Microsoft Windows Server 2012 R2 (64-bit) [1]	
Database Server[2]	Oracle 18c[6] Oracle 19c[6]	Microsoft SQL Server 2017 Microsoft SQL Server 2019
Local database	Oracle not supported for local data vault	Microsoft SQL Server 2014 Express SP3[7] Microsoft SQL Server 2016 Express[7] Microsoft SQL Server 2017 Express[8] Microsoft SQL Server 2019 Express[7]
Raw Data Server	Microsoft Windows Server 2019 [1] Microsoft Windows Server 2016 [1] Microsoft Windows Server 2012 R2 (64-bit) [1]	
.Net Framework[10]	Microsoft .NET Framework 3.5 SP1 Microsoft .NET Framework 4.6.2 Microsoft .NET Framework 4.7	
Server Virtualisation	Virtualisation is supported for the following roles [3]: • 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	
Cloud deployment	Cloud deployment is supported for the the following roles [9]: • 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	

Notes:

[1] Windows Server 2019, 2016 and 2012 R2 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 is 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] Chromeleon has been tested by Thermo Fisher Scientific on a range of virtualisation 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 Virtualisation 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 'virtualised' instrument connection mechanisms are not fully compatible with real-time operations and usage of multiple communication ports.

[4] With Chromeleon 7, you can only create standard data vaults locally on the hard drive of the PC that runs Chromeleon 7. Standard data vaults are shared in a Chromeleon domain, but the connectivity, performance, and capacity are limited by the SQL Server version

[5] See section 2.2 for further information regarding Windows 10 support

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

[7] SQL Server Express 2014 SP3 is only supported on Workstation and IPC computers which have previously had Chromeleon 7.2 installed. When Chromeleon 7.3 is installed onto a computer which does not have any version of SQL Server Express installed, SQL Server Express 2017 will be installed. If Chromeleon 7.3 is installed onto a computer which has any version of SQL Server Express more recent than 2014 SP3 (e.g. SQL Server Express 2016 or 2019) installed, the Chromeleon installation kit will identify this installed version and will not attempt to install any other version of SQL Server Express.

[8] Windows 8.1 is only supported for on Workstation and IPC computers which have previously had Chromeleon 7.2 installed, and thereby have SQL Server Express 2014 installed (see [7] above). Installations of Chromeleon 7.3 on computers running Windows 8.1 without a previous installation of a version of SQL Server Express earlier than 2017 are not supported because SQL Server Express 2017 is not supported on Windows 8.1.

[9] Chromeleon has been tested by Thermo Fisher Scientific on Amazon Web Services (AWS) Elastic Cloud Compute (EC2) instances of Windows 2016 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 'virtualised' instrument control connection mechanisms are not fully compatible with real-time operations and usage of multiple connection ports.

[10] 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. In order 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.

2.3 Windows 10 Service Periods

With the release of Windows 10, Microsoft's support model was changed. This has an impact on the way Thermo Fisher Scientific is able to support Chromeleon on Windows 10.

Windows 10 Feature Updates are now released twice a year and each feature release is supported by Microsoft for approximately 30 months.

Microsoft will continue to support at least one Windows 10 Semi-Annual Channel (Professional / Enterprise) until October 14, 2025.

At the time of release of this document, the versions of Windows 10 which are under support by Microsoft and are therefore supported for Chromeleon 7.3 are displayed in the table below:

Windows 10 Version	End of service for Professional edition	End of service for Enterprise edition	End of service for Long-term Servicing Channel edition
Version 1703	Windows 10 Pro Version 1703 is no longer supported	Windows 10 Enterprise 1703 is no longer supported	n/a
Version 1709	Windows 10 Pro Version 1709 is no longer supported	Windows 10 Enterprise 1709 is no longer supported	n/a
Version 1803	Windows 10 Pro Version 1803 is no longer supported	May 2021[2]	n/a
Version 1809	Windows 10 Pro Version 1809 is no longer supported	May 2021	Aug 2028[1]
Version 1903	Windows 10 Pro Version 1903 is no longer supported	Dec 2021	n/a
Version 1909	May 2021	May 2022	n/a
Version 2004	Dec 2021	Dec 2022	n/a
Version 20H2	May 2022	May 2023	n/a

Notes:

[1] LTSC editions of Windows 10 are released less often than other editions, but are supported for a longer period.

[2] End-of-life for Windows 10 1803 was extended due to the impact of COVID-19

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