

System requirements for the latest release versions of CAAS and 3mensio applications.

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1. 3mensio Workstation

Version: **10.9**

Hardware configuration:

For use with 4D datasets (Mitral, Tricuspid, 3D US):

- Intel i7 / AMD Ryzen 7 or better CPU
- 1 TB SSD for data
- 32 GB of RAM
- Discrete DX11 GPU (min. 2GB VRAM), or
- Intel UHD 750 GPU or better
- 1920x1080 or higher resolution

For use with 3D datasets (Aortic Valve, LAA, Vascular)

- Intel i5 / AMD Ryzen 5 or better CPU
- 512 GB SSD for data
- 16 GB of RAM
- Discrete DX11 GPU (min. 2GB VRAM), or
- Intel UHD 750 GPU or better (min. Intel UHD 620 GPU)
- 1920x1080 or higher resolution

If your system does not meet these specifications, you may expect degraded performance and/or sub-optimal screen layout. When upgrading from a previous version of 3mensio, performance and capability of the system will not be reduced even if it does not meet the above specifications.

Supported operating systems:

The standalone 3mensio software is supported on:

- Windows 10/11 x64 (but not Windows 10 LTSC 1503)
- Windows 11 Arm 64 (when installed on Parallels on an Apple Silicon Mac)
- Microsoft Windows Server 2016 x64 (shared archive only)
- Microsoft Windows Server 2019 x64 (shared archive only)
- Microsoft Windows Server 2022 x64 (shared archive only)
- Microsoft Windows Server 2025 x64 (shared archive only)

Desktop Windows may be both regular and “Long Term Service Channel” versions, the latter versions are supported for a longer period. Regular Windows 10 support stops in October 2025, Windows 10 Enterprise LTSC stops in January 2027.

To ensure the safety of our product, it is required that the Windows OS continues to receive security updates. The OS versions indicated are requirements at the time of release. Future 3mensio releases and patches may require an update of the OS when that OS version is no longer supported by Microsoft, or when components we use, such as WebView2 and .NET, no longer support it.

3mensio on an Apple Mac is supported using Parallels, with the following conditions:

Apple Mac M1 based and later

- Parallels 17
- Windows 11 (64 bit Arm edition)

Intel based Apple Mac

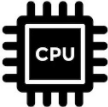
- Mac hardware supports DirectX 10
- Parallels version is 15.0 or higher
- At least 4 Gb of RAM available for virtual machine

When Parallels is used:

- Retina resolution is turned off (parallels VM config)
- Video memory set at max. 512 MB (parallels VM config)
- It is recommended to have at least 4 GB of RAM available for the VM.

2. CAAS Workstation

Version: 8.5

	Computer / Processor	Intel Core 5 equivalent CPU or higher (Intel Core 7 equivalent CPU or higher for IV-LINQ with streaming device)
	Operating system	Windows 10 64-bit Windows 8 and 8.1 64-bit Windows 7 64-bit with Service Pack 1 (SP1) or higher <i>Please be aware that, even though CAAS Workstation is tested on Windows 7 and Windows 8, no security updates are provided by Microsoft anymore.</i>
	Video card	In case the QCA3D, IV-LINQ and vFFR extension is used, a video card of 256 MB or higher and OpenGL 1.1 support
	Memory	4 GB Ram (8 GB Ram for IV-LINQ with streaming device)
	Monitor	Minimum screen resolution of 1280 x 800
	Hard drive	SSD with 500mb of free disk space
	Drive	DVD-ROM drive (if installation is done from a CD-ROM)
	Peripherals	Two button mouse device, mouse wheel is recommended PC standard keyboard USB port for the software protection device which supports at least USB 1.0 compatible devices (USB 3.0 port for connecting the IV-LINQ streaming device)

Caas Workstation

Version: **9.3**

Specifications for the Server Minimum hardware requirements:

- Computer with an Intel Core 5 equivalent or higher
- 16 GB available memory
- Network connectivity and available network bandwidth of at least 10 Mbps
- At least 1 GB of free disc space

Supported Operating Systems:

- Windows Server 2019
- Windows Server 2022
- Windows Server 2025
- Windows 10 (64 bit version)
- Windows 11 (64 bit version)

Specifications for the Client

Minimum hardware requirements:

- Minimum screen resolution of 1920 x 1080 (landscape) or 1080 x 1920 (portrait) and 16 M colors
- Minimum screen diagonal 9.7"
- Network connectivity and available network bandwidth of at least 10 Mbps
- Mouse like pointer device with mouse wheel or trackpad
- Standard keyboard
- Touchscreen

Supported Web Browsers:

- Google Chrome (version >= 79) for Windows and macOS/iOS/iPadOS
- Microsoft Edge, chromium-based (version >= 79) for Windows and macOS/iOS/iPadOS
- Apple Safari (version >= 12) for macOS/iOS/iPadOS
- Browser size ≥ 1024 x 768 (landscape) or ≥ 768 x 1024 (portrait)

NOTE: In case server and client are deployed on the same physical machine, a Windows Operating System is required.

Prerequisite software components CAAS Workstation requires the following software components:

- Microsoft ASP.NET Core 6.0.11
- Microsoft Visual C++ 2015-2022 redistributable package
- Microsoft Windows Desktop Runtime 6.0.11
- Microsoft .NET Framework 4.8
- Sentinel Runtime Environment 9.14

3. CAAS MR Solutions

Version: **5.3**

Recommended hardware:

- Computer/Processor
 - Computer with an Intel Core 5 equivalent – 8th Gen equivalent or higher.
- Memory
 - 16 GB Ram or higher
- Hard Drive
 - SSD (with at least 80 GB free space)
- Drive
 - CD-ROM drive (if installation is done from a CD-ROM)
- Graphics Card
 - Graphics card that supports OpenGL version 3.3 or higher (memory $\geq$ 2 Gb)
(for 4D Flow: memory $\geq$ 4 GB)
 - Graphics card NVIDIA Quadro or higher
- Monitor
 - Color monitor
 - Minimum resolution of 1280x1024
- Peripherals
 - A two-button mouse device with mouse wheel
 - A PC standard keyboard
 - One USB port for the software protection device which supports USB 3.0 compatible devices

Supported Operating Systems:

- Windows 10 (64-bit)
- Windows 11 (64-bit)
- Windows Server 2016
- Windows Server 2019
- Windows Server 2022

All service packs are supported

4. CAAS Qardia

Version: **2.2**

Specifications for the server

Supported operating systems:

- Windows Server 2012
- Windows Server 2016
- Windows Server 2019
- Windows 10 (64 bit versions)
- Windows 11

Recommended hardware:

- Computer with an Intel Core 5 equivalent or higher
- HD access time < 12 ms
- 16 GB available memory (available = not consistently claimed by other applications)
- Network connectivity and available network bandwidth of at least 10 Mbps (available = available for the necessary communication of Caas Qardia, not used by other processes)
- A graphics card of 256 MB that supports at least OpenGL 3.3

Specifications for the workstation

Supported web browsers (assuming up to date versions are available):

- Google Chrome
- Microsoft Edge (Chromium-based)
- Safari on Mac OS

Required operating systems are any version of Windows or Mac OS that supports these browsers. Other operating systems that support these browsers may be usable, but have not been tested by Pie Medical Imaging.

Recommended hardware:

- Available network bandwidth of 10 Mbps (available = available for the necessary communication of Caas Qardia, not used by other processes)
- Mouse like pointer device with mouse wheel (or trackpad)
- Standard keyboard
- A color monitor with a minimum screen resolution of 1280 x 1024 (landscape) and 16 M colors, with a sufficiently high refresh rate

Client-based deployment

Workstation must adhere to the hardware and OS requirements for the server, as described above in 'Server-based deployment'.

Workstation must also adhere to the hardware and browser requirements for the workstation, as described above in 'Server-based deployment'.

GPU support

For the 'image classification' feature (if this is enabled by your purchased license – see 9.3), performance can be drastically improved by using a GPU. By default, Caas Qardia will select the best available GPU for this feature, if one is present on the installation machine (GPU may be missing, for example in virtualized environments).

However, the GPU must be suitable for Caas Qardia with the following general requirements:

- 2 GB of GPU RAM available
- GPU must be 'current' and mainstream model, e.g. NVIDIA Geforce, NVIDIA Quadro RTX, Quadro K2000, AMD Radeon, ... The device must support DirectX 12 (please check your device documentation to see if this is the case)
- Latest drivers must be installed