

eRAD PACS eVolution and RIS Workstation Requirements

Requirements for eRAD PACS eVolution viewer and RIS workstation

Component		Minimum	Recommended	Diagnostic Workstation
CPU**		2 core/2 logical (Intel i3, i5, i7 or equivalent)	4 core/8 logical (Intel i5 gen8 or newer, i7 or equivalent)	6 core/12 logical (Intel i5 gen8 or newer, i7 or equivalent)
RAM		8GB, or 2-times the size of the largest data set.	16GB, or 2-times the size of the largest data set.	32GB, or 2-times the size of the largest data set.
Disk	Program	100MB free		
	Cache Size	20GB	100GB	250GB*
	Type	Any	SSD (SATA or NVMe)	SSD (NVMe)
Dedicated GPU	Basic Use	No need		
	Plugins (Reconstruction, Volume 3D, Image Fusion)	DirectX 11 compatible Min 512GB RAM	DirectX 11 compatible Min 1GB RAM	DirectX 11 compatible Min 2GB RAM
NIC card		10Mbps	1000 Mbps	1000 Mbps
Operating System		Windows 8, 10, 11 64-bit	Windows 10/11 64-bit.	Windows 10/11 64-bit.
Browser <i>See note about Java plug-in support.</i>		IE11 or later, Edge, Mozilla Firefox, or Google Chrome (preferred)	IE11 or later, Edge, Mozilla Firefox, or Google Chrome (preferred)	IE11 or later, Edge, Mozilla Firefox, or Google Chrome (preferred)
		For full web viewer, browser must support HTML5, WebGL and websockets	For full web viewer, browser must support HTML5, WebGL and websockets	For full web viewer, browser must support HTML5, WebGL and websockets
Input devices		3-button mouse with scroll wheel, Microphone	3-button mouse with scroll wheel, Microphone	3-button mouse with scroll wheel, Microphone

*Cache Size

For high resolution tomosynthesis mammography consider 500GB-1TB

** Processor cores and speed

The eRAD PACS desktop viewer is multi-threaded, running some tasks in parallel to maximize CPU usage but with a special threading mechanism to avoid blocking other Windows tasks. Some of the more significant parallel tasks are as follows:

- Parsing the session data (more prior studies require more parsing)
- Image enhancement processing
- Decompression (studies containing many images require more decompression)
- Image manipulation (e.g., magnification, adjusting window and level)

For a workstation meeting the minimum supported CPU configuration only, the number of cores and the processor speed might affect viewer performance. No strict method or rule exists for making this determination. The minimum supported CPU recommendation above is based on experience but might not be best for every situation.

-If a workstation uses the recommended CPU or better, viewer performance is affected by the processor's general capabilities and not by the relationship between number of cores and processor clock rate,

Nuance Dragon Naturally Speaking plug-in module: Supports *DragonMedical Practice Edition 4*. The workstation must satisfy the following requirements:

- CPU: Minimum: 2.2 GHz Intel® dual core or equivalent AMD processor. Faster processors yield faster performance.
- Free hard disk space: 4GB if DVD installation
- RAM: 4 GB for all operating systems
- Supported Operating Systems:
 - Windows 8.1, and 10, 64-bit
 - Windows Server 2008 R2
 - Windows Server 2012
 - Windows Server 2012 R2
 - Windows Server 2016
- Internet Explorer 11 or the current version of Chrome or Edge for online Help and for installation if installing from the Web
- Microsoft .NET Framework version 4.5.2 or later. Generally, the .NET Framework is pre-installed on Windows 7, 8.1, and 10 computers. If you do not have it installed, you are prompted to install it during Dragon's installation. Nuance does not provide the .NET Framework with your installation; you must download the installation file from [microsoft.com](https://support.nuance.com/compatibility/).
- An audio input device capable of 16-bit recording for dictation. For a list of recommended devices, see <https://support.nuance.com/compatibility/>.

Additional comments

Windows 8 notes:

- The following changes to Windows 8 defaults are required or recommended:
 - Set the Windows User Access Control (UAC) default setting to its lowest setting, *Never Notify*.
 - If Direct 3D is enabled in the eRAD PACS viewer, Windows Aero function should be disabled.
 - Add the eRAD PACS viewer (epviewer.exe or pbuilder.exe) to the Windows Defender excluded file types.
- The following changes to browser defaults are recommended for performance optimization:
 - Disabled the pop-up blocker (all browsers),
 - Disable web site phishing filter (IE11).
 - Disable SmartScreen filtering (IE11).
- Some restrictions apply to Philips SpeechMike devices. See notes on microphone devices below. Philips SpeechMike devices require the drivers from the Philips SpeechExec v5.0 SR4 CD.
- If using multiple display controllers, each one must be WDDM 1.1 compliant and have their WDDM 1.1 driver installed.

Mammography:

- Rendering full-field digital mammography images for diagnostic interpretation requires FDA cleared monitors. eRAD offers compliant models. Others exist. Check with your preferred monitor manufacturer for a list of complying models.

Microphones:

- Any Windows-compliant microphone can be used for recording dictation.
- Philips SpeechMikes are required when using the integrated microphone controls and for speech recognition. Windows 7 and later support USB versions (only) of the following models: PowerMic II, LFH-3500/3510 series, SMP-3700/3710.
- Requires Philips SpeechMike firmware version 2.50 or later.
- Philips Device Control Center corresponding to the installed device is required for all SpeechMikes starting with v7.2 build 101 and v7.3 build 1.

Anti-virus software

- The eRAD PACS viewers will not function when the following anti-virus packages are installed: Kaspersky Anti-virus.

RAM amount notes:

- A series consisting of fewer than 750 512x512 images or 3000 256x256 image requires 1GB of RAM to render. 2GBs of RAM renders series consisting of twice as many images of the same size.

eRAD PACS Web Viewer:

- Requires HTML5-compliant browser and support for WebGL and websockets. Chrome, Firefox, Internet Explorer 11, and Edge comply with these standards.